

Kemin-Balykchy OHTL and Balykchy Substation Environmental & Social Impact Assessment (ESIA): Volume IV – Framework ESMP

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Abbreviations

AoI	Area of Influence
CBO	Community Based Organisations
CHA	Critical Habitat Assessment
CHS	Community Health and Safety
CHSS	Community Health, Safety and Security
CSEE	Center for State Ecological Expertise
CSR	Corporate Social Responsibility
DC	Direct Current
EBRD	European Bank for Reconstruction and Development
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EPC	Engineering, Procurement, and Construction
EPRP	Emergency Preparedness and Response Plan
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
GHG	Greenhouse Gas
GIP	Good International Practice
GIP	Good International Practice
GIS	Geographical Information System
HPZ	Health Protection Zone
HR	Human Resources
IBA	Important Bird Area
IFC	International Finance Corporation
ILO	International Labour Organisation

IP	Indigenous peoples
IUCN	International Union for Conservation of Nature
LARF	Land Acquisition and Livelihood Restoration Framework
MEEPCC	Ministry of Ecology, Environment protection and Climate change of the Republic of Kyrgyzstan
NCR	Non-compliance report
NEGK	National Electric Grid of Kyrgyzstan
NGO	Non-Governmental Organisation
NSR	Noise Sensitive Receptors
NTS	Non-Technical Summary
O&M	Operation and Maintenance
OHS	Occupational Health and Safety
OHTL	Overhead transmission line
PM	Particulate Matter
PPA	Power Purchase Agreement
PPE	Personal Protective Equipment
PR	Performance Requirement
PS	Performance Standards
PV	Photovoltaic
RAP	Resettlement Action Plan
RoW	Rights of Way
SEE	State Ecological Expertise
SEP	Stakeholder Engagement Plan
K-B	Kemin-Balykchy
SS	Substation
UN	United Nations
WBG	World Bank Group
WHO	World Health Organisation

1 Introduction

1.1 Background

The European Bank for Reconstruction and Development (EBRD) plans to provide a sovereign loan to the Joint-Stock Company National Electric Grid of Kyrgyz Republic (JSC NEGK). The loan will finance the construction of a 53 km 500 kV overhead transmission line between the existing Kemin substation in Chui region and a new substation named "Balykchy, SS", located 6.4 kilometres outside Balykchy city in Issyk-Kul region.

The Project aims to connect electricity generated by renewable energy plants to the national power grid, improving the reliability, efficiency, stability, quality, and security of the electricity supply.

EBRD has appointed Juru Ltd "Juru", supported by local social consulting firm Evidence CA, to conduct the Environmental and Social Impact Assessment (ESIA) following EBRD's 2019 Environmental and Social Policy. This document provides a framework Environmental and Social Management Plan (ESMP), which outlines mitigation measures, minimum standards, monitoring requirements, and key performance indicators.

1.2 Scope of the ESMP

This framework ESMP covers the design, procurement, construction, operation, and decommissioning phases of the Project. It aligns with the environmental and social requirements in Chapter 3, including national regulations and EBRD ESP 2019 standards. Table 1 summarises relevant E&S aspects as determined by the ESIA, with specific obligations detailed therein. The framework applies to NEGK (the operator), the Engineering Procurement Construction (EPC) Contractor, and all third-party subcontractors.

Table 1: Summary of topics addressed in the framework ESMP

Environmental	Social (including labour)
<ul style="list-style-type: none"> • Climate resilience • Supply chain (construction) • Air quality – dust/fugitive (C/D¹) • Noise (C/D) • Site clearance, including habitat clearance (C/D) • Hazardous material handling (C/O/D) • Waste (including hazardous waste) (C/O/D) • Wastewater discharges (C/D) • Water use and water efficiency (C/O/D) • Traffic and transportation (C/D) • Pollution prevention (e.g., discharges to groundwater or land) (C/D) 	<ul style="list-style-type: none"> • Employment (including local content policy) (C/O/D) • Labour welfare (including the welfare of sub-contractors, casual workers and migrant workers) (C/O/D) • Supply chain management (C) • Occupational health and safety (C/O/D) • Community health and safety specifically traffic safety, GBV, communicable diseases) (C/O/D) • Security and security force management (C/D) • Emergency preparedness (C/O/D) • Accommodation management (as applicable) following IFC / EBRD guidance note: Accommodation: Processes and Standards (Guidance Note by IFC and EBRD, 2009 (C)

1.3 The objective of the ESMP

The purpose of this ESMP is to establish a framework for protecting the environment and community from activities that may cause harm or nuisance, as identified during the ESIA process. The ESMP includes the following:

Requirements for an ESMS aligned with EBRD PR1, ISO 14001, and ISO 45001 to manage impacts on sensitive receptors from Project activities as identified in the ESIA include:

- Organisation and responsibilities

This framework ESMP is structured as follows:

- Section 1: Introduction
- Section 2: Project Overview
- Section 3: Regulatory Framework

¹ C = Construction, O = Operation, D = Decommissioning.

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- Section 4: Organizational Framework
 - Section 5: Mitigation and Management Requirements
 - Section 6: Monitoring and Reporting
 - Section 7: Document Control
 - Section 8: Stakeholder Engagement
 - Section 9: Grievance Mechanism
 - Section 10: Management Review

Figure 1: Project overview

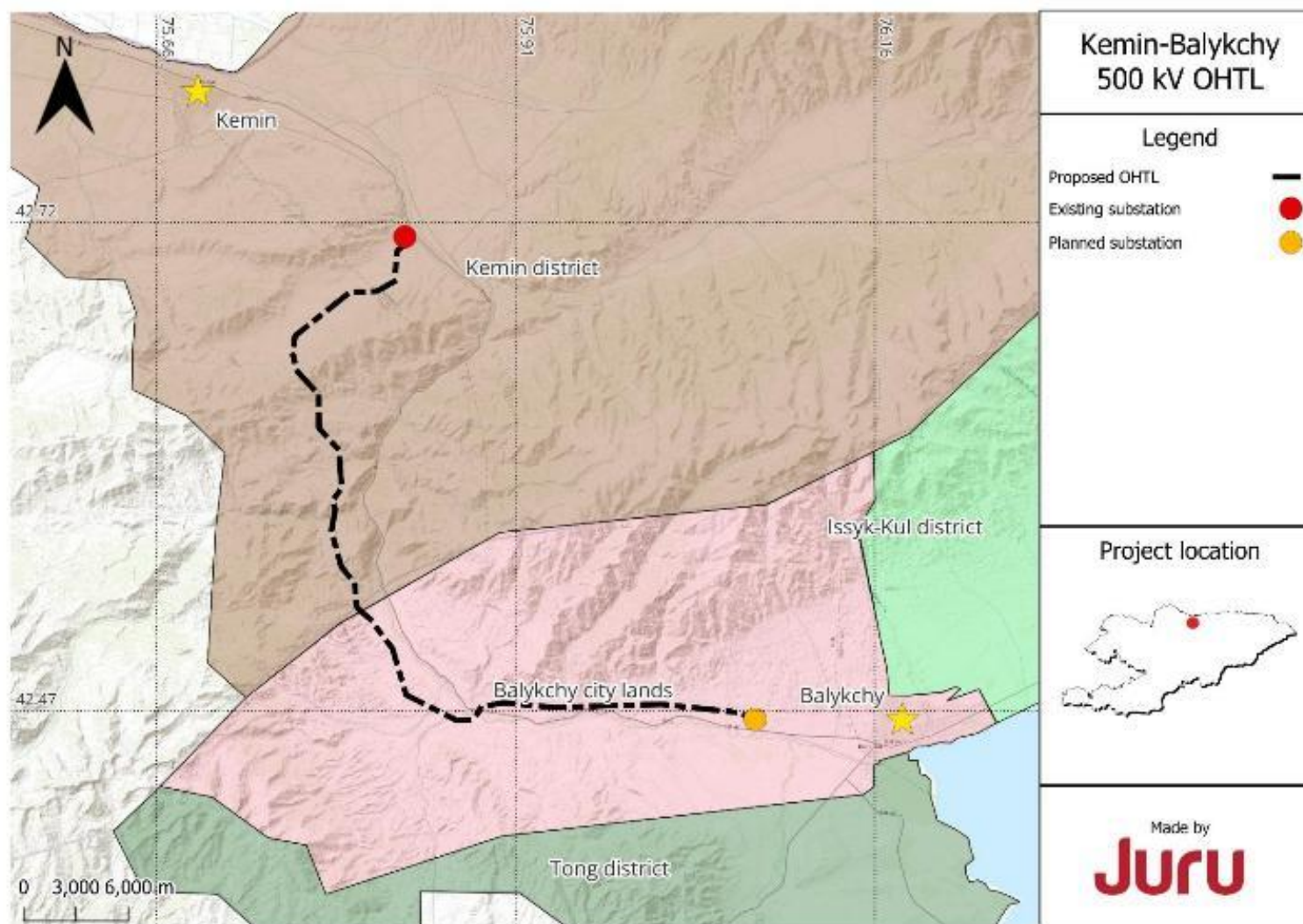
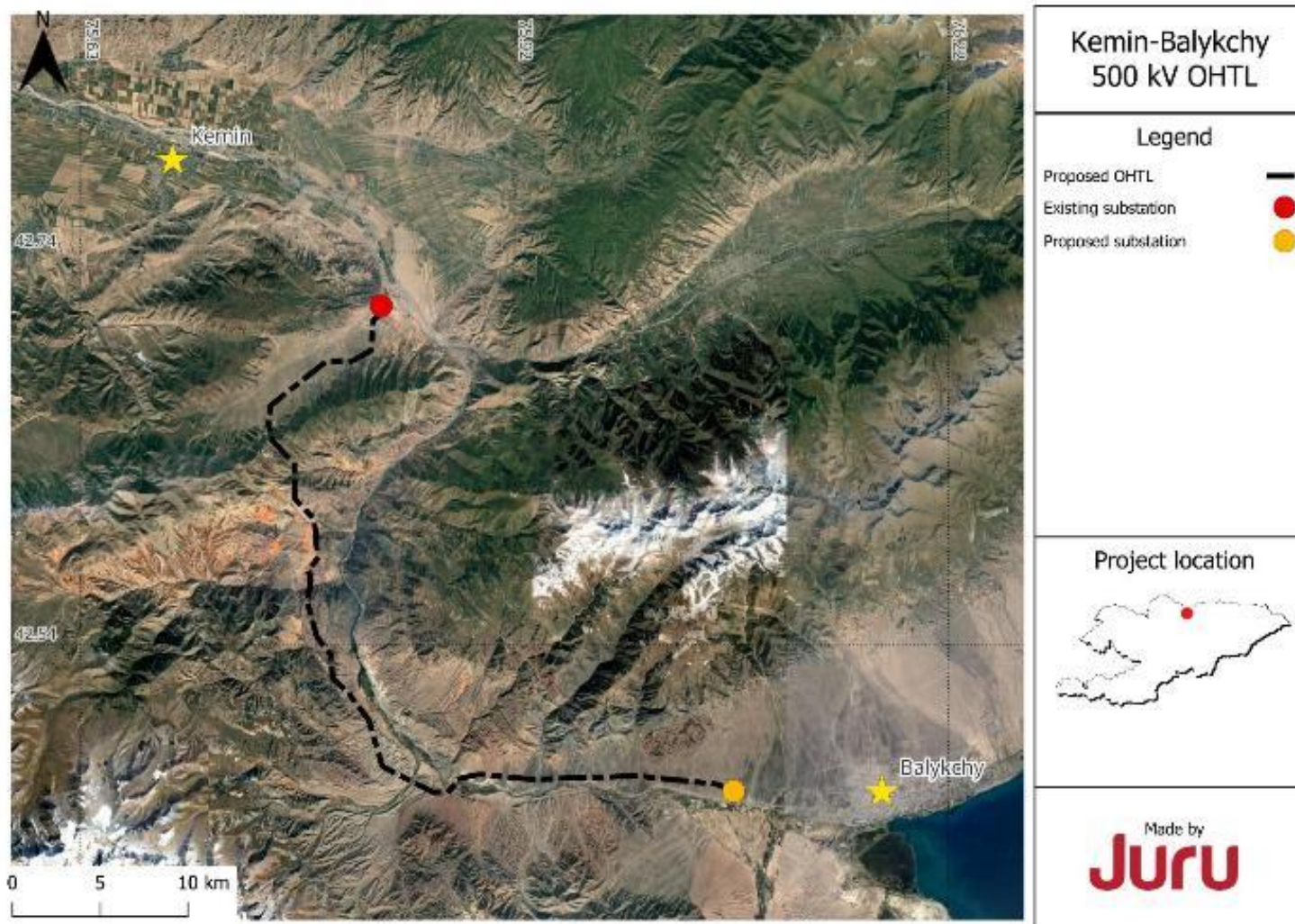


Figure 2: Proposed OHTL Routing



2 Project Overview

2.1 Introduction

The primary components of the K-B OHTL and substation Project are:

- 52.9 km of 500kV OHTL between the settlements of Cholok (Chui region, 13 km from Kemin city) and a new substation (Balykchy) near Kok-Moynok-1 settlement, (Issyk-Kul region, 6 km away from Balykchy city) .

Related activities in support of the OHTL works will include:

- End-user works at the Kemin SS - A new substation bay will be installed within the substation footprint.
- New 14.3 ha standalone substation - Balykchy SS 6 km west of Balykchy (Figure 3 and Figure 4)
- 78 m servitude under the OHTL (including the area for tower footprint, and the health protection set back of 30 m on either side of the outermost conductor).
- Upgrades to existing access routes (gravel) or new access routes (gravel) suitable to provide access to the OHTL RoW and new substation.

A summary of the key characteristics of the OHTL is provided in Table 2.

Table 2: Summary of OHTL characteristics

Feature	Description
Circuit type	Single
Number of phases	3
Approximate length of OHTL	52.9 km
Elevations along the route, m ASL (meters above sea level)	1,286 to 2,407
Total length of new access road	Estimated between 50km to 70km (worst case estimate)
Tower Type	PB5, PB4, R2, U1, U2k
????Tower height	24.3 to 38 m
Typical Span / Maximum span	250 m to 350 m / 1000m
Optical Ground Wire (OPGW)	Yes

A total of 5 types of towers are planned to be used, made of galvanized steel: 2 variations of H-guyed towers, 1 type of suspension towers and 2 angle or deviation towers. The height parameters for the towers are presented in Table 3 below:

Table 3: Tower height parameters

Tower type	Tower height (m)	Height to the wire (m)
PB4	32.2	27.2
R2+5	38.0	32.0
U2k	24.3	21.8

Tower footprint and foundation requirements are summarised in Table 4.

Table 4: Foundation characteristics (source: Juru and NEGK)

Tower Requirement	R2+5 500 kV (self-supporting)	PB 4 500kV (guyed)	U2k 500 kV (angle)
Number of foundations	Four foundation columns at ground level	Two foundation columns at ground level	Four foundation columns at ground level
Average footprint	9.048m x 6.272m (56.75 m ²) (the footprint is defined as the outer of the foundation columns at ground level).	18.4m x 19.2m (353.28 m ²) (total) (b) (the footprint is defined as the outer border of the guy wires).	7.5m x 5m (37.5 m ²) (the footprint is defined as the outer of the foundation columns at ground level).
Foundation type	Actual size and type will depend on the type of tower and the sub-soil conditions. The main types are “piled”, “pad and chimney”, and “anchors”. Angle towers will require more extensive foundations.		
Notes	Area inside the footprint can return to natural habitat, but not easily used for grazing.	The area inside the footprint can be used, although may restrict the movement of machinery – not preferred in agricultural areas due to guy wires.	Area inside the footprint can return to natural habitat, but not easily used for grazing.

Figure 3: Location of the new Balykchy SS (Source: Juru).

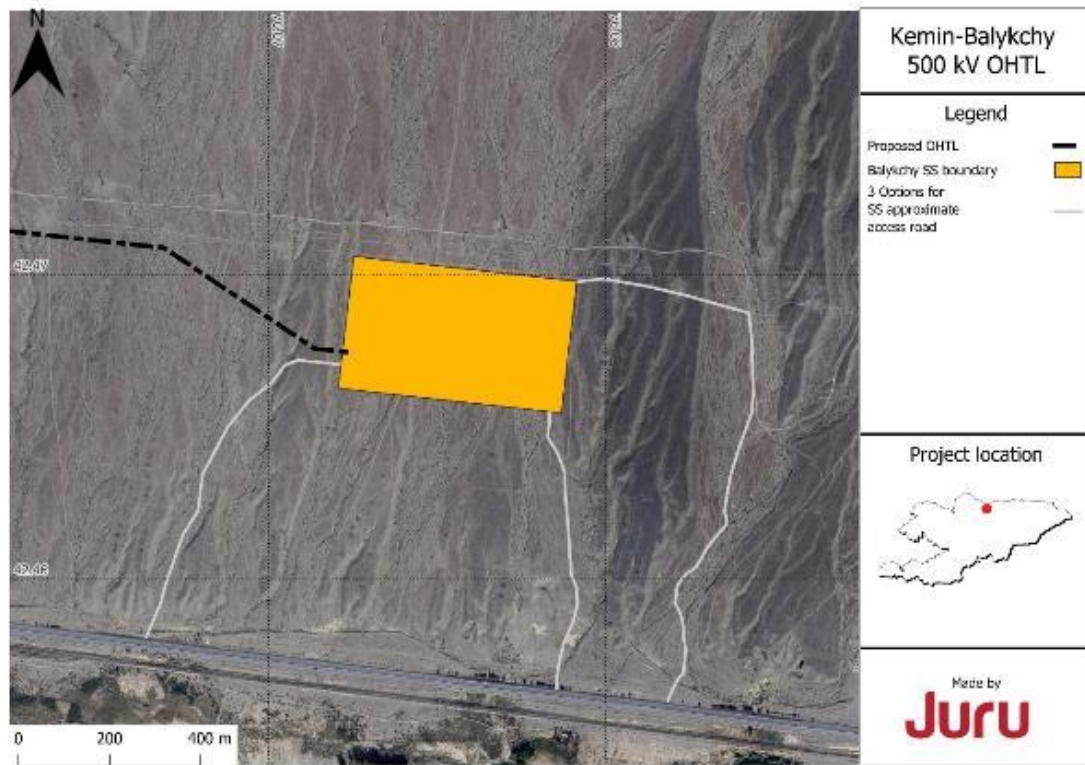
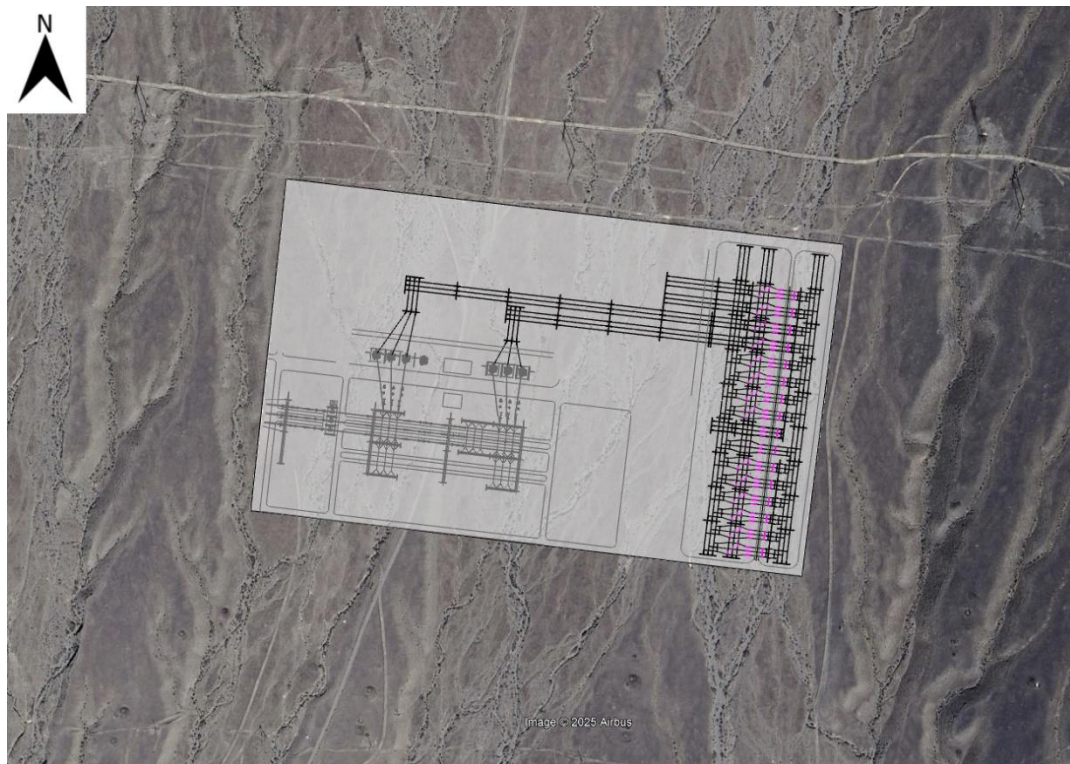


Figure 4: Proposed Balykchy SS layout



The main components of the new Balykchy SS are summarised in Table 5.

Table 5: Main components of Balykchy SS

No.	Equipment	Description and Key Specifications
1	Autotransformers	500/220/35 kV, 167 MVA, 7 pcs (1 reserve), oil-immersed, OLTC, forced oil circulation, air cooling
2	Shunt Reactors	500 kV, 120 MVar, 3 pcs, oil-filled, air cooling
3	Circuit Breakers and Disconnectors	500 and 220 kV, various types, including with one or two earthing blades
4	Instrument Transformers	Current and voltage transformers (CTs and VTs) with support structures for 500 and 220 kV
5	Relay Protection and Automation (RPA)	Main and backup protection cabinets for transformers and lines (500/220 kV), breaker control cabinets, bus differential protection, central alarm cabinet
6	Automated Metering System (AMI)	Includes three-phase meters, data acquisition and transmission devices, power supply, and communication interface
7	Telemetry System	Measuring transducers, switching and power supply equipment
8	Communication System	High-frequency and optical communication cabinets, fixed/vehicle radio stations, antennas
9	Insulator Strings and Bus Conductors	Sets of suspension and tension insulator strings, 500/220 kV bus conductors
10	Supporting Structures and Surge Protection	Support insulators, bay/busbar gantries, surge arresters

This work is planned to be conducted by NEGK. The Balykchy SS will be constructed by private third parties (via separate contract). Once operational, both facilities will be transferred to NEGK, which will assume responsibility for operations and maintenance (O&M) activities.

The coordinates of the Project are provided in Table 6 and Table 7.

Table 6: Kemin-Balykchy OHTL preliminary coordinates

Northing (Y)	Easting (X)
42.71250	75.83514
42.71140	75.83646
42.70550	75.82740
42.68998	75.82565
42.68484	75.81316
42.68431	75.79448
42.66211	75.75637
42.65293	75.75468

Northing (Y)	Easting (X)
42.64413	75.75766
42.63203	75.77274
42.61477	75.77300
42.60454	75.78581
42.59970	75.78719
42.58423	75.78882
42.57781	75.78249
42.57321	75.78434
42.56209	75.78159
42.54392	75.78848
42.53513	75.79805
42.52391	75.79896
42.52212	75.80051
42.51575	75.81047
42.51312	75.81253
42.50188	75.82416
42.47813	75.83365
42.46494	75.86909
42.46543	75.87950
42.46901	75.88393
42.47182	75.88562
42.47410	75.90114
42.47164	75.93699
42.47329	76.01145
42.46893	76.06681
42.46694	76.07083
42.46686	76.07187

Table 7: Balykchy substation preliminary coordinates

Northing (Y)	Easting (X)
42.46616	76.07146
42.46567	76.07741
42.46827	76.07782
42.46875	76.07187

2.2 Project receptors

The Aol communities are made up of:

- directly affected ayils- Kok-Moinok 1, Kok-Moinok 2 (including DEU 10), and Cholok
- indirectly affected ayils - Boroldoy, Dorozhniy, Kemin, Kichi-Kemin, Kyzyl Oktyabr, Sovetskoe, Jil-Aryk, Kiz-Kiya.

Other important receptors are shown in Figure 5 and listed in Table 8 below.

Table 8: Receptors within OHTL AoI

Cluster number	Description
C1	Construction material production facility
C2	Cement plant
C3	Clusters of roadside shops
C4	Brick production facility
C5 – C6	Trade (construction materials)
C7	Fish farming facilities (Kiymat-Kur-Kol)
C8	Cement plant
C9	Proposed Solar PV land plant
C10	Construction camps for a solar power plant
C11	Construction camps for a wind power plant
S1	Cholok village
S2	Kiz-Kiya village
S3 – S5	Kok-Moynok-2 village
S6 – S8	Kok-Moynok-1 village
F1 – F16	Clusters of farms
H1	Herders
NABU	NABU Wildlife Rehabilitation Centre

With reference to Figure 6, the OHTL RoW crosses the Chu River upstream of the village of Kok-Moinok-2, after which it turns southeast into the mountains. The route crosses two right tributaries of the Chu River and several seasonal streams within the gorges. Upstream from the Kok-Moynok-1 village, two water intake canals also originate:

- The left canal diverts water to agricultural fields.
- The right canal directs water toward wastewater treatment facilities near the riverbank.

The Chu River receives many tributaries along the OHTL route, the largest being the right-bank tributary, the Chon-Kemin River. Two additional right-bank tributaries exist between the villages of Kok-Moynok-1 and Kok-Moynok-2 (one identified as Kiyamat-Kur-Kul) and three periodically drying streams. On the left bank, there are two permanent and two temporary tributaries.

Artificial ponds near the Kemin substation are used for irrigation or livestock watering. Additionally, artificial fishery ponds are currently under construction on the southern outskirts of the village of Kok-Moynok-2. Water bodies in the planned OHTL area are shown in Figure 6.

The main transport arteries in the Study area are shown in Figure 7

.

The Project design has avoided placing project components within archaeological protected zones and maintained a minimum 50m buffer from the archaeological sites. Nevertheless, there are several locations where the OHTL RoW intersects with the protection zones of archaeological sites. The results of the assessment are shown in Figure 8. The intersection points have been zoomed in on the map to facilitate their identification during later stages of planning.

Figure 5: Receptor map

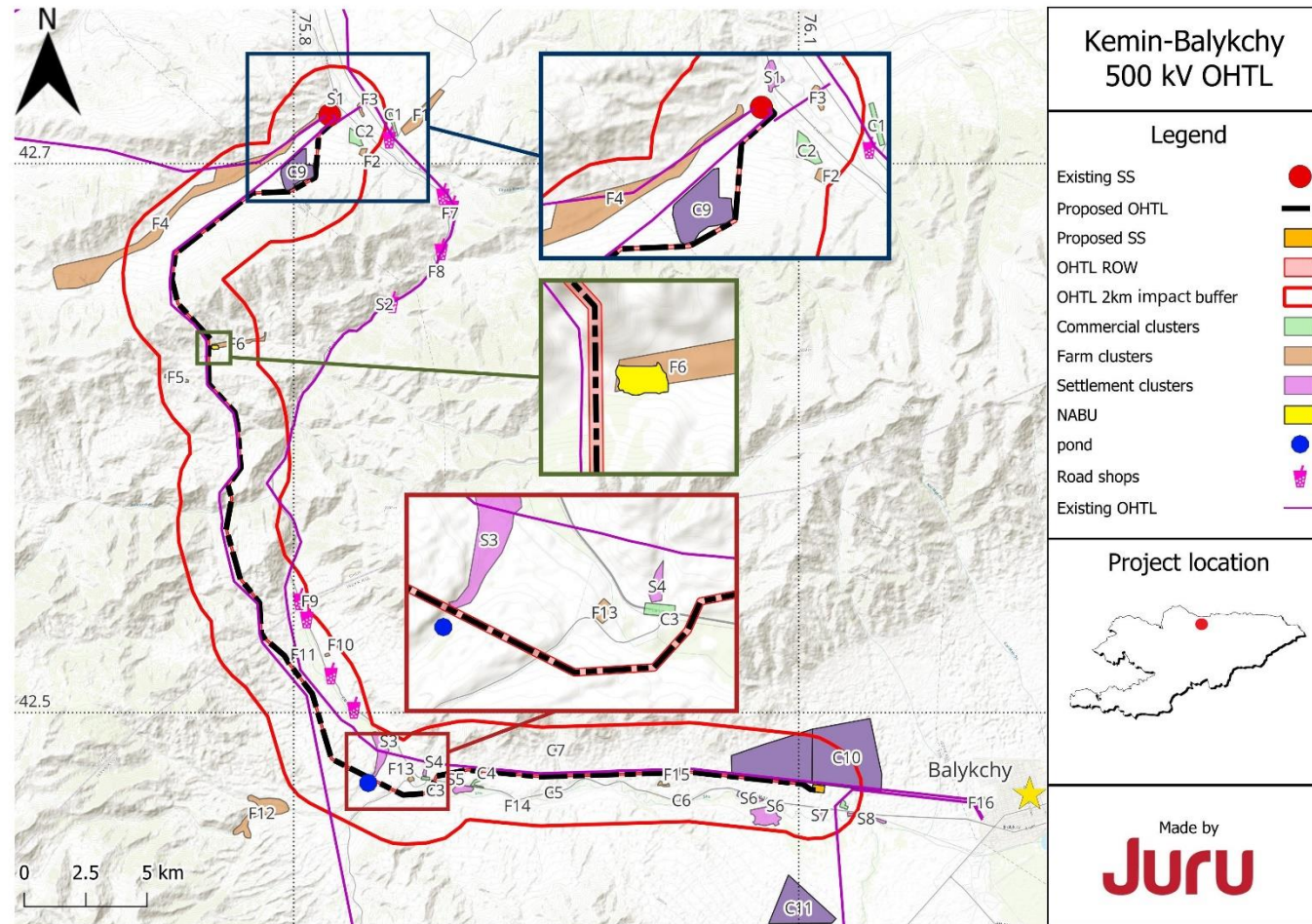


Figure 6: Surface water features along the OHTL RoW

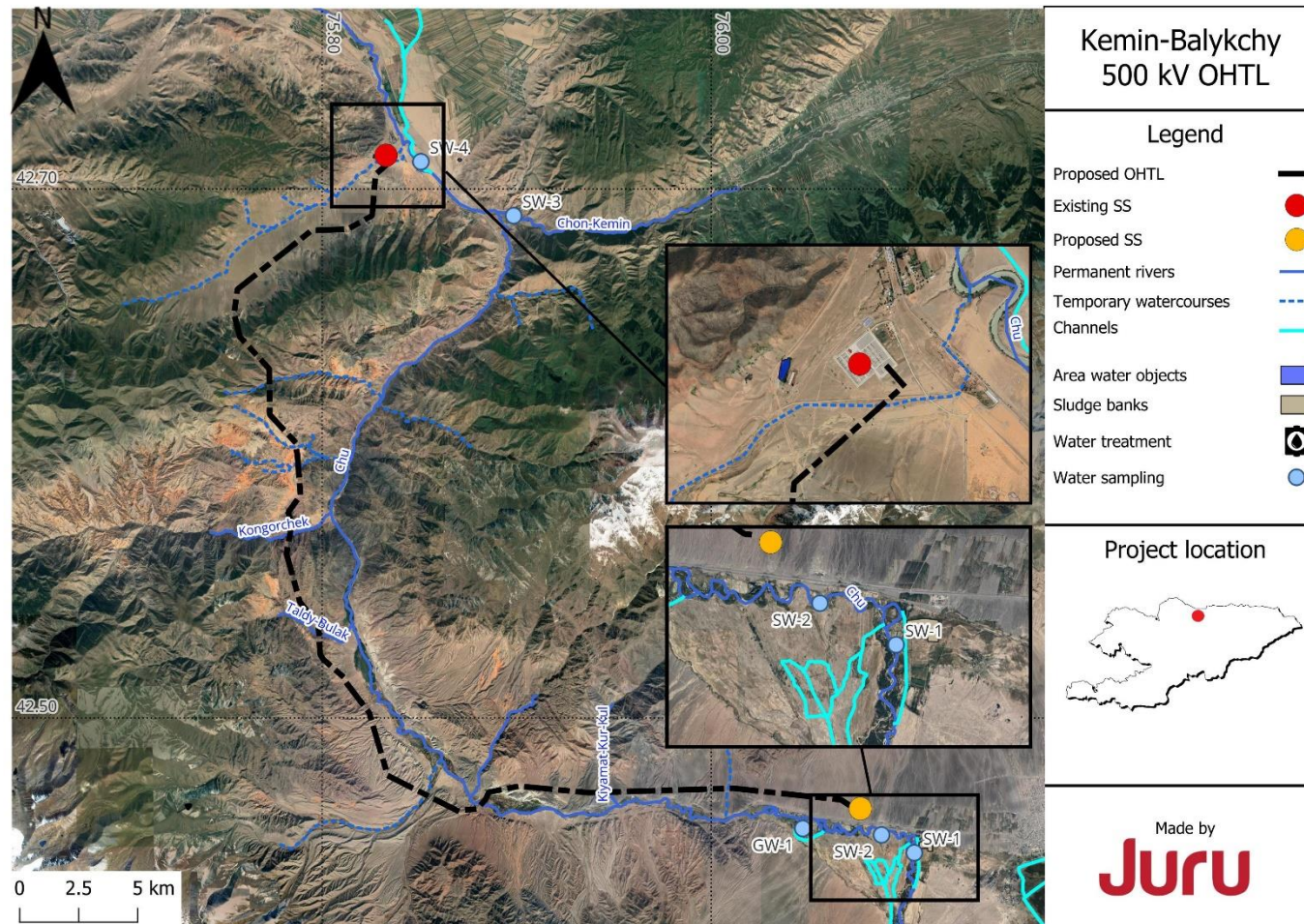


Figure 7: Main transport arteries.

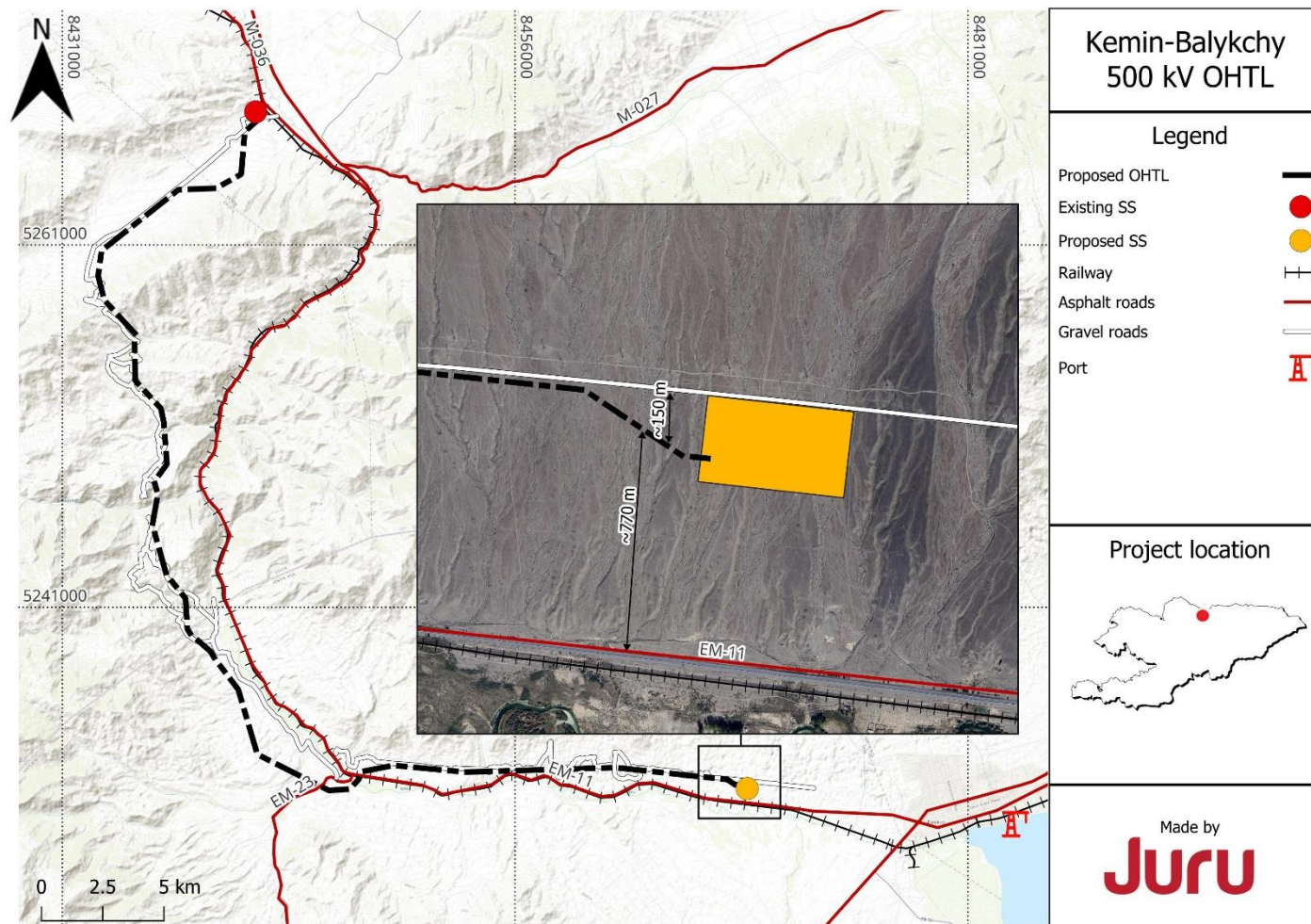
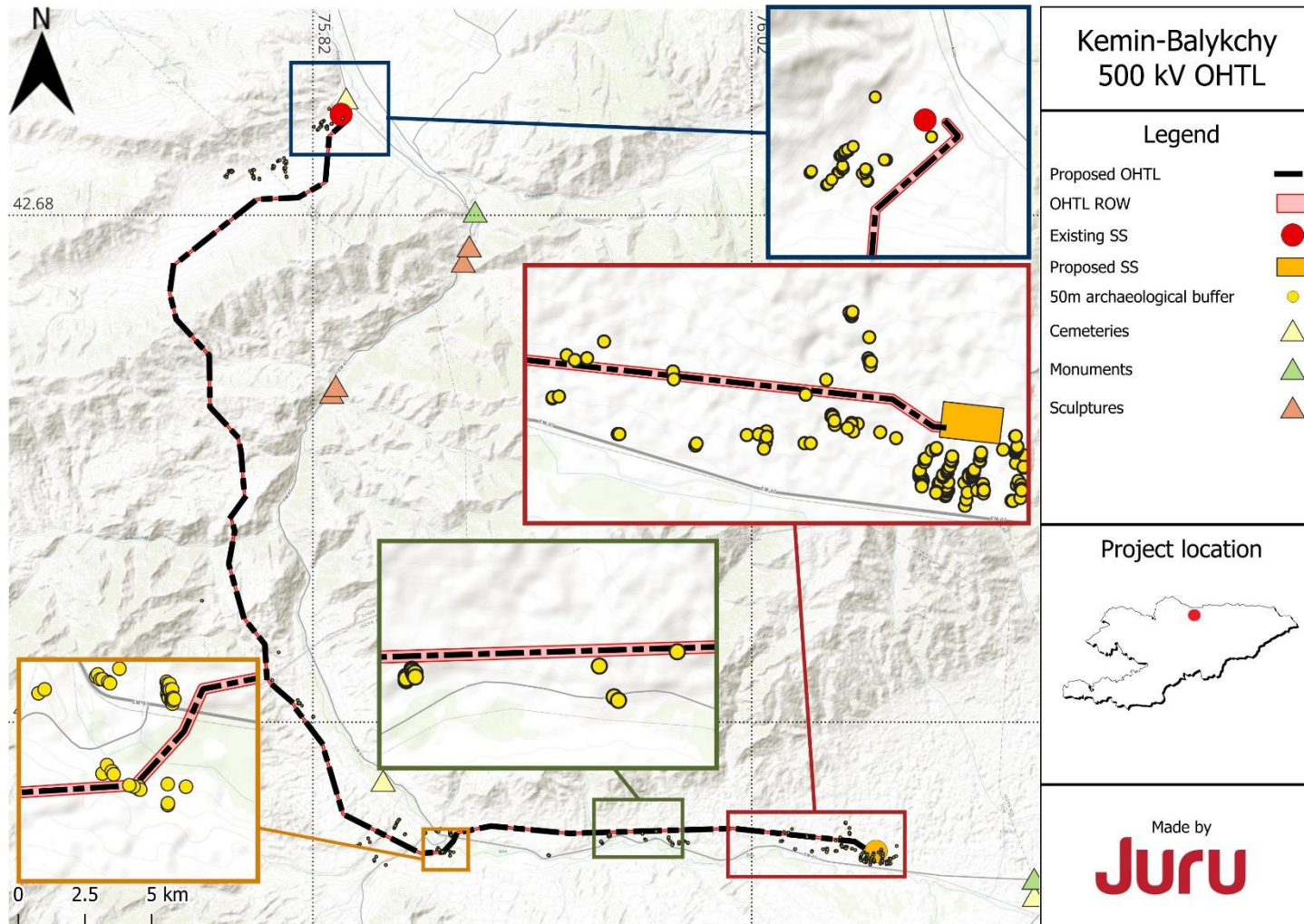


Figure 8: Cultural heritage objects



2.3 Land requirements

For newly designed 500 kV OHTL, buildings and structures must be set back 30 m from the outermost conductor on either side of the OHTL; this forms the RoW or servitude. The state owns all land in Kyrgyzstan. The owner of the land rights of the Project AOI include the government, private landowners and the Forestry Department. Local municipalities (until recently previously pasture committees) manage the temporary allocation of land for grazing. This is completed under a contract for between 1-3 years and is negotiated individually between the municipality and the herder. In addition, there are area used by communities, where animals are grazed on a rotational basis.

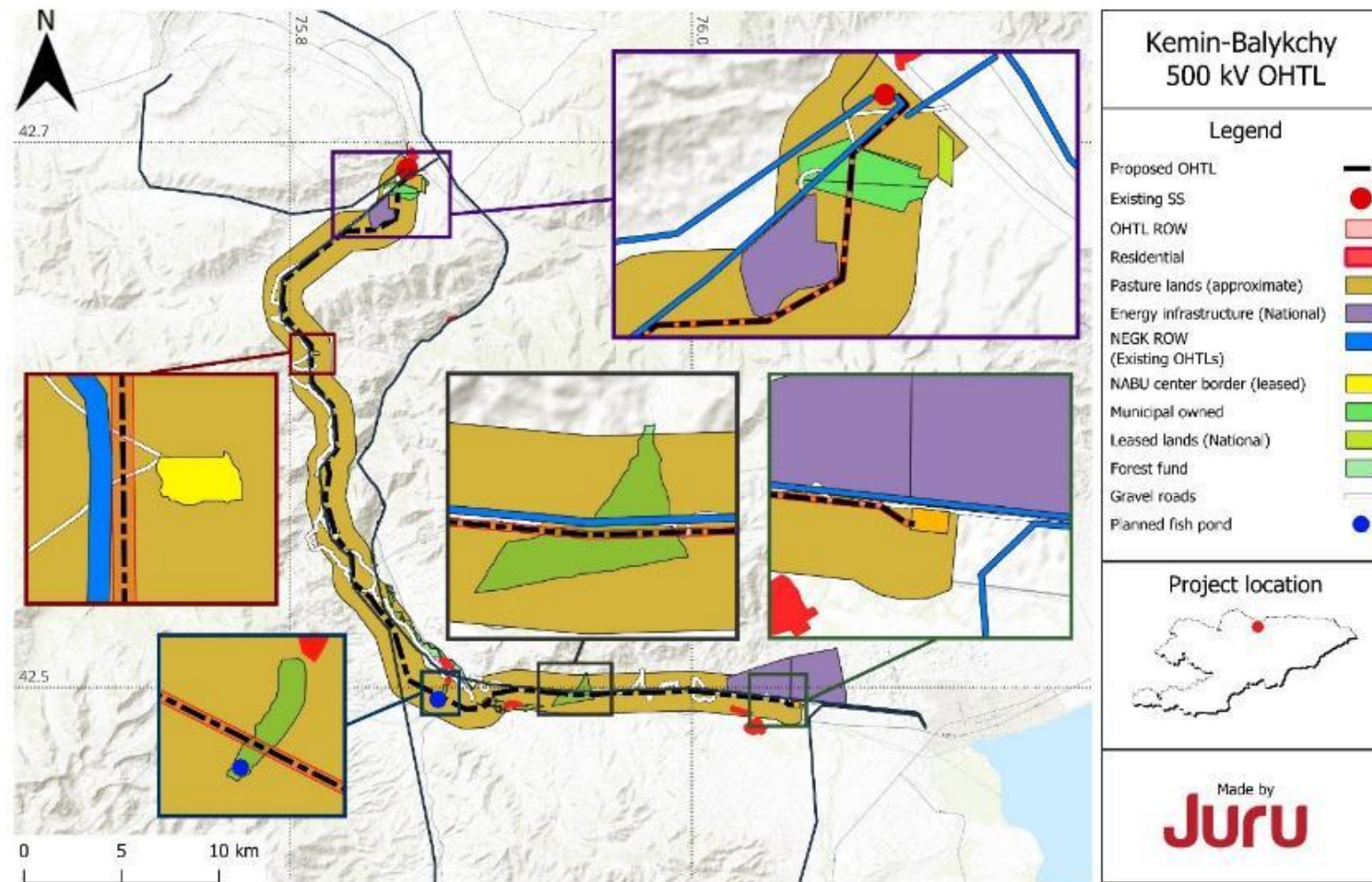
The Project will need to obtain servitude rights over the land for the OHTL and any permanent and temporary access roads (unsurfaced). NEGK will enter into a servitude agreement for this purpose.

Procedures for obtaining the use of a RoW in Kyrgyz Republic are well defined. Calculation and compensation of losses to those with land rights will be performed following national regulations ensuring landowners, land users, and lessees are liable to be fully refunded (including the lost profit) in the case of limitation of their rights from the construction or operation of the Project. Land law relating to servitude in Kyrgyzstan also protects the owner/user and does not deprive the owner of their parcel's possession, use, and disposition rights.

The ESIA has assessed potential livelihood losses. Permanent land take will be for the OHTL tower footprints only. Grazing and other activities may continue under the line once operational. Work at the substations will be entirely within the exiting substation footprints. Further information on this is provided in the LARF (Volume VI) and a livelihood restoration plan is required to be prepared by NEGK in support of the servitude process. Compensation payments must be paid in full before any works start on the OHTL construction. Compensation arrangements are the responsibility of the NEGK.

A land use map is provided in Figure 9 below.

Figure 9: Project area Land use map



2.4 Development and construction activities

There are four main stages of the Project cycle: pre-construction, construction, operation and decommissioning. Pre-construction work includes finalising the design, recruitment and procurement of equipment and site setup.

Construction typically progresses sequentially by one or more teams working along the whole or sections of the OHTL route. The key phases of the development are site clearance (rocks, utilities, vegetation), enabling works to establish vehicle access to each tower location, civil works (tower foundation works), steel delivery, steel erection, conductor stringing and then commissioning. A laydown area will be established for the OHTL at a location central to the line and close to the main delivery rail station. Smaller and temporary equipment storage sites will also be established at strategic locations along the route to store key plant equipment and materials; these may also move along the OHTL following the construction works.

It may be necessary to establish borrow pits along the construction route to supply aggregate for supporting the construction activities, including road building.

Workers' accommodation will be in existing accommodation in nearby settlements that are approved in accordance with the Project Accommodation Management Plan and the standards defined therein e.g. IFC/EBD Accommodation Standards and Practices

At this time, the water source for the construction process is unknown.

Materials and equipment will likely be delivered by road to the Project area and then delivered to a central Materials and Equipment laydown area (location to be determined) before offloading equipment and materials for transfer to the worksites.

NEGK will operate and maintain the OHTL and implement preventative, and emergency maintenance works following their corporate operations and maintenance (O&M) procedures. The substations will either be remotely operated or have one or two permanent workers (operating in a shift system). The substation maintenance works will be intermittent and within the operational site boundary. The expected lifetime of the infrastructure is 30 to 40 years (at least). At the end of its lifetime, options will be considered to replace the OHTL, repair it or remove all infrastructure from the site.

2.5 Project schedule

The development schedule is anticipated as set out in Table 9.

Table 9: Current anticipated development schedule

Activity	Date
Project Categorisation	September 2024 (completed)
Scoping	January 2025 (completed)
Consultation on draft ESIA	June 2025 (completed)
Finalization of the Submission of the draft ESIA	June 2025 (completed)
EBRD 120-day disclosure period	Mid- July to Mid-October 2025
Finalise ESIA (including public consultation comments)	October 2025
Financial close	Q4 2025 (immediately after signing)
Pre-mobilisation (finalisation of route corridor, tower micro-siting, planning and design)	Q1 2026
Construction Start	Q1 2026
Construction End	Q1 2027
Expected Lifetime	Approximately 50 years or more

3 Regulatory Framework

3.1 National regulatory framework

The following Laws are relevant to the Project:

- The Law of the Kyrgyz Republic On “Environmental Protection” dated June 16, 1999, No. 53 (as amended and supplemented on June 13, 2024, No. 95)
- The Law of the Kyrgyz Republic No. 151 “General Technical Regulation on Ensuring Environmental Safety in the Kyrgyz Republic”, dated May 8, 2009 (as amended of July 8, 2019)
- The Law of the Kyrgyz Republic dated June 20, 2001, No. 53 “On the Protection and Use of Plant Resources” (as amended and supplemented as of March 23, 2020)
- The Law of the Kyrgyz Republic dated June 17, 1999, No. 59 “On Wildlife” (as amended and supplemented as of March 23, 2020)
- The Law of the Kyrgyz Republic No. 181 “On Production and Consumption Waste”, dated August 15, 2023
- The Land Code of the Kyrgyz Republic dated June 2, 1999, No. 45 (as amended and supplemented as of August 5, 2022)
- The Forest Code of the Kyrgyz Republic dated July 8, 1999, No. 66 (as amended and

supplemented as of February 7, 2024)

- The Law of the Kyrgyz Republic “On the Conversion (Transformation) of Land Plots” dated July 15, 2013, No. 145 (with the latest amendments as of October 21, 2024)
- The Law of the Kyrgyz Republic dated January 11, 2001, No. 4 “On the Management of Agricultural Lands” (as amended and supplemented as of August 4, 2020)
- The Law of the Kyrgyz Republic “On Water” dated January 14, 1994, No. 1422-XII (with the latest amendments and supplements as of April 5, 2019)
- Sanitary and Epidemiological Rules and Standards (SanPiN), approved by the Resolution of the Government of the Kyrgyz Republic dated April 11, 2016, No. 201.

3.2 Project standards

The following Project standards are applicable to the Project. Where national and Lender standards deviate the more stringent standard will always apply.

Table 10: Ambient Air Quality MPCs²

Pollutant	Regulation	MPC (µg/m ³)				
		One-time	Hourly	24 hours	Annual	Most stringent
Nitrogen Dioxide (NO ₂)	National	85	-	40	-	10
	WHO	-	200	25	10-	
Sulphur Dioxide (SO ₂)	National	500	-	50	-	40
	WHO	-	-	40	-	
Carbon Monoxide (CO)	National	5000	-	3000	-	3000 ³
	WHO	-	-	10000	-	
PM _{2.5}	National	160	-	160	-	5
	WHO	-	-	15	5	
PM ₁₀	National	300	-	30p	-	15
	WHO	-	-	45	15	

²Resolution of the Government of the Kyrgyz Republic dated April 11, 2016, No. 201 Hygienic standards “Approximate Safe Levels of Pollutant Exposure in the Atmospheric Air of Populated Areas” according to Appendix 15 and World Bank Group (WBG) General Environmental, Health, and Safety Guidelines (EHS Guidelines - General)

³ Maximum daily 8-hour mean

Table 11 presents the permissible noise levels for the premises most relevant for the project.

Table 11: National noise limits (Source: GOST 23337-78, SanPiN 2.1.2.1002-00) / WBG Noise Level Guidelines (One-hour L_{aeq} (dBA))

Receptor	L _{aeq} (dBA)			
	Daytime		Night-time	
	07.00-23.00 / 07.00-22.00		23.00 – 07.00 / (07.00-22.00)	
	Average	Max	Average	Max
Areas directly adjacent to residential buildings, polyclinics, dispensaries, rest homes, boarding houses, libraries, schools, etc.	55 / 55	70	45 / 45	60
Areas directly adjacent to hospitals and sanatoriums	45 / 55	60	35 / 45	50
Areas directly adjacent to hotels and dormitories	60 / 55	75	50 / 45	65
Recreational zones near hospitals and sanatoriums	35 / 55	50	35 / 45	50
Recreational zones in residential micro-districts, construction of cottages, rest homes, sanatoriums, schools, retirement homes, etc.	45 / 55	60	45 / 45	60
Industrial; commercial	70 / 70		70 / 70	

The standard SN 2.1.8.562-96 “Noise in Workplaces, Residential and Public Buildings, and Residential Areas” encompasses a broad range of requirements related to environmental safety and comfort for the population and workers. Table 12 represents the standard requirements:

Table 12: National noise level limits for working spaces (Source: SN 2.1.8.562-96)

Category of Work Intensity	Category of Physical Workload				
	Light Physical Work	Moderate Physical Work	Heavy Work 1st Degree	Heavy Work 2nd Degree	Heavy Work 3rd Degree
Light Intensity	80	80	75	75	75
Moderate Intensity	70	70	65	65	65
High-Intensity Work 1st Degree	60	60	-	-	-

Category of Work Intensity	Category of Physical Workload				
	Light Physical Work	Moderate Physical Work	Heavy Work 1st Degree	Heavy Work 2nd Degree	Heavy Work 3rd Degree
High-Intensity Work 2nd Degree	50	50	-	-	-

National water standards are set out by the Resolution of the Government of the Kyrgyz Republic dated April 11, 2016, No. 201 (Hygienic standards “Maximum Permissible Concentrations of Chemical Substances in Water Bodies for Domestic and Cultural Use” according to Appendix 16). The requirements are presented in Table 13.

Table 13: Standards and Maximum Permissible Concentrations (MPC) for water

No	Substance	MPC, mg/l
1	Al	0,2
2	Benzo(a)pyrene	0,5
3	V	0,1
4	Cd	0,001
5	Technical kerosene	0,01
6	Mg	50
7	Mn	0,1
8	Cu	1
9	As	0,01
10	Na	200
11	Pb	0,01
12	Sulfates	500
13	Sulfides and H ₂ S	0,05
14	Chlorides	350
15	Zn	1

Council recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (1999/519/EC) (CD 1999) and IFC EHS General guideline

refers to guidance from the International Commission on Non-Ionizing Radiation Protection (ICNIRP), which establishes the following exposure levels for EMF:^{4 5 6}

- public exposure to electric field as 5 kV/m and for magnetic fields 100 micro-Tesla
- occupational exposure to electric fields as 10 kV/m and magnetic fields and 500 micro-Tesla
- CD 1999 also states that for compliance with CD 1999, consideration as to the significance of the time of exposure and the duration of exposure are important in considering risk.

3.3 EBRD Requirements

The following Lenders standards and GIP are applicable to the Project:

- The European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy 2019 (ESP 2019);
- PR1 – Assessment and Management of Environmental and Social Risks and Impacts;
- PR2 – Labour and Working Conditions;
- PR3 – Resource Efficiency and Pollution Prevention and Control;
- PR4 – Health, Safety and Security;
- PR5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
- PR6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PR8 – Cultural Heritage;
- PR10 – Information Disclosure and Stakeholder Engagement.
- WBG General EHS Guidelines (April 2007) - cover the four areas of the environment; occupational health & safety (OHS); community health & safety (CHS); construction and decommissioning.
- WBG EHS Guidelines Electric Power Transmission and Distribution (April 2007).
- Voluntary Principles on Security and Human Rights (est. 2000); (<http://www.voluntaryprinciples.org/>);
- United Nations Guiding Principles for “Protect, Respect and Remedy” Human Rights Framework (2011); (<https://www.business-humanrights.org/en/un-secretary-generals-special-representative-on-business-human-rights/un-protect-respect-and-remedy-framework-and-guiding-principles>);
- United Nations Code of Conduct for Law Enforcement Officials; and (<https://www.un.org/ruleoflaw/blog/document/code-of-conduct-for-law-enforcement->

4 ICNIRP (1998). Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz). Health Phys, 74(4), 494-522

5 Application of ICNIRP Exposure Guidelines for 50 Hz Power Frequency Fields”

http://www.hpa.org.uk/webw/HPAwebandHPAwebStandard/HPAweb_C/1195733805036?p=1158934607693

6 EU, 1999. Council Recommendation on the limitation of exposure of the general public to electromagnetic fields (0 Hz – 300 GHz). Official Journal of the European Communities 1999/519/EC.

officials/;

- United Nations Basic Principles on the Use of Force and Firearms by Law;
- Use of Security Forces: Assessing and Managing Risks and Impacts (February 2017);
- Worker's Accommodation: Processes and Standards (Guidance Note by IFC and EBRD, 2009), and
- Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets, World Bank, 2007.

4 Organisational Framework

4.1 Plans and Procedures

The Project construction-ESMP (CESMP) and Operation-ESMP (OESMP) will be developed by the ESIA Consultant as part of the development activities. The Project construction will be awarded to a winning engineering, procurement and construction (EPC) contractor under an open tender process for the development and construction phase (“EPC Contractor”). At the commercial operation date (CoD), the Project and all operations and maintenance (O&M) obligations will transfer to the responsibility of NEGK.

The EPC Contractor will be required to develop implementation plans aligned with the requirements of the CESMP. NEGK will be required to ensure company policies and procedures for the relevant obligations under the CEMSP and the requirements of the OESMP.

Table 14 summarises the responsibility for developing and implementing key plans and procedures required to be developed for the Project.

Table 14: Summary of responsibilities for developing and implementing Project plans.

Policy / Plan and Procedure	NEGK	NEGK PIU	EPC Contractor	Notes
Environmental and Social Action Plan (Lender)	X – Oversight and Implementation	X - Implemented by NEGK PIU during the pre-construction and construction phase.	X - Support NEGK PIU for actions allocated to the Contractor	Part of loan agreement with Lender
Construction - ESMP	X – Develop	X - Implement and oversight responsibilities during pre-construction/construction as defined in the ESMP	X - Implementation actions allocated to the Contractor	Prepared by ESIA Consultant on behalf of the Project.
Operation – ESMP	X – Develop	X - Implement and oversight responsibilities during pre-construction/construction as defined in the ESMP	X - Implement actions allocated to the Contractor	Prepared by ESIA Consultant on behalf of the Project.
Stakeholder Engagement Plan	X - Develop	X - Implement during the pre-construction and construction phase.	X - Support NEGK to implement engagement activities during construction with the NEGK PIU	Prepared as part of the ESIA process.
LARF	X - Develop	X - Implement by NEGK PIU	X - Ensure all work does not encroach outside land identified in the LARF.	Already developed as part of the ESIA process.
Livelihood Restoration Plan (LRP)	X - Oversight	X - Develop LRP and implement pre-construction actions	X - Adhere to LRP for any land requirements that were not identified during the initial draft of the LRP and closed during pre-construction.	Aligned with the LARF
HR Policy / Labour management plan (including local employment protocol)	X - Oversight	X for NEGK employees	X – for Contractor and subcontractor employees	Aligned with the CESMP / OESMP.
E&S Policy		X – Approve and oversee implementation by Contractor	X - Develop and implement	Requires lender and NEGK approval before work begins.

Policy / Plan and Procedure	NEGK	NEGK PIU	EPC Contractor	Notes
H&S Plan including training plan, medical services plan		X – Approve and oversee implementation by Contractor	X - Develop and implement	Requires lender and NEGK approval before work begins.
Emergency Response Plan including Pollution (spill) Incident Control Plan		X – Approve and oversee implementation by Contractor	X - Develop and implement	Requires lender and NEGK approval before work begins.
Vegetation Clearance and Rehabilitation Plan (temporarily cleared areas)		X – Approve and oversee implementation by Contractor	X - Develop and implement	Requires lender and NEGK approval before work begins.
Social Management Plan including worker accommodation plan		X – Approve and oversee implementation by Contractor	X - Develop and implement	Requires lender and NEGK approval before work begins.
Biodiversity Management Plan	X	X - Implementation of NEGK obligations X –oversee Contractor implementation	Implementation of obligations assigned to the Contractor	Requires lender and NEGK approval before work begins.
Environmental Plan (air, noise, waste dust, water use, water run off)		X – Approve and oversee implementation by Contractor	X - Development and implementation	Requires lender and NEGK approval before work begins.
Cultural Heritage Management Plan including chance finds procedure		X – Approve and oversee implementation by Contractor	X - Development and implementation	Requires lender and NEGK approval before work begins.
Communication plan (aligned with NEGK SEP)		See SEP above	X - Development and implementation	Requires lender and NEGK approval before work begins.
Security Management Plan		X – Approve and oversee implementation by Contractor	X - Development and implementation	Requires lender and NEGK approval before work begins.

4.2 Responsible entities

This section elaborates further the key roles and responsibilities for environment, health, safety and social (EHSS) management structures applicable to the Project.

- **NEGK:** is the developer of the Project. NEGK is ultimately responsible for E&S compliance and submission of reports to Lenders. NEGK will be the key entity signing the loan agreement with the Lenders and for overseeing the implementation of E&S requirements as defined in the ESIA and supporting documentation.
- **Project Implementation Unit (PIU):** is the entity responsible for the overseeing the specific implementation requirements of the project (technical, E&S and financial) .
- **Engineering, Procurement, and Construction (EPC) Contractor** is responsible for preparing the detailed design and layout of the Project; supply of the material and equipment; constructing the Project and its various components. The roles and responsibilities required to be provided by the EPC contractor are outlined in section 4.4.
- **Subcontractors:** Subcontractors are identified as any entity (international or local) appointed directly by the EPC Contractor through contractual arrangements to undertake construction activities within the Project area or provide a specific service for the Project. This could include but not be limited to the appointment of civil, electrical and mechanical subcontractors or services related to cleaning, water supply, waste collection, etc.
- **Lenders Environmental and Social Advisor (LESA):** Is assigned by the Lender(s) to provide different services, including E&S due diligence of the Project before financial close, supervision and monitoring of the construction and operational phases. The LESA will draft the ESAP for Lender and Owner agreement.
- **Ministry of Natural Resources, Ecology, and Technical Supervision (MNRETS)** which oversees:
 - The Department of State Environmental Expertise (EE) (conducting state environmental reviews of project documentation).
 - The Environmental Monitoring Department (conducting laboratory research on environmental conditions).
 - Environmental and Technical Supervision Services (state environmental control and monitoring of compliance with the norms and requirements of the legislation of the Kyrgyz Republic).
 - Regional Departments of MNRETS (conducting state environmental reviews of project documentation, regulatory and technical documentation, including environmental passports for enterprises, projects of maximum permissible air emissions, wastewater discharges, waste generation, and issuing permits for emissions, discharges, and waste disposal into the environment).

4.3 EPC Contractor selection

The Contractor selection process will require a demonstration of the following competencies:

- ISO 14001 certified environmental management system or equivalent.
- ISO 45001 or equivalent certified health and safety management system.

- Publicly disclosed Health and Safety Policy Statement.
- Publicly disclosed Environmental Policy Statement.
- Human Resource Policy.
- Statements relating to any H&S convictions, reportable incidents or environmental breaches.
- Information on supplier qualification related to labour (forced labour, child labour, occupational health and safety and biodiversity)
- Experience implementing requirements of E&S Policy on projects.

The EPC Contractor must coordinate, supervise and monitor all its Subcontractors and ensure that safe practices are implemented, and work is conducted safely and in strict compliance with the ENGK ESMS and supporting management plans.

The EPC Contractor must provide evidence to NEGK of the Subcontractor's HSE qualification, which is based on demonstrated capability on HSE management and the NEGK supply chain process (described below). Risks and hazards associated with the Subcontractor's work must be identified and addressed in the EPC Contractor ESMS.

The EPC Contractor must prepare a sufficient Subcontractor's safety management system. Personnel from Subcontractors will be treated the same way as those from the EPC Contractor.

4.4 Framework roles and responsibilities

Key roles and responsibilities for the PIU and EPC Contractor are presented in Table 15. This must be expanded in the subsequent Management Plans (Owner and EPC) as relevant.

Table 15: Roles and responsibilities for implementing the ESMP (framework)

PIU
<ul style="list-style-type: none"> • Implementation of NEGK commitments in the CESMP and provide oversight of EPC Contractor obligations outlined in the CESMP and elaborated in the EPC Implementation plans. • Sharing the CESMP and NEGK owned management plans with the EPC Contractor, guiding the EPC Contractor in preparing the Contractor implementation plans, and approving these plans as per the requirements of the CESMP • Updating the CESMP when necessary and sharing additional commitments with the EPC Contractor • Employment of competent E&S safeguard staff and external experts to implement the requirements of the Project. • Auditing contractor activities in line with CESMP requirements. • Ensuring compliance with project standards, making necessary emergency corrections in case of non-compliance. • Stopping work in any situation that threatens the environment and human health and safety. • Providing follow-up and analysis of environmental and social accidents. • Ensuring stakeholder participation, implementing the grievance mechanism, ensuring continuous information transfer through open communication. • Promptly notify the Lenders of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers, including but not limited to incidents and accidents encountered during construction works, environmental spills, etc. • Provide sufficient detail regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. • Coordination of the actions and assessments if a change due to engineering/design changes, route/location changes, applicable legislation changes related to environmental and social issues, authority provision changes, any new environmental/social data is introduced, construction/operation strategy changes or stakeholders influence the project. • Implementation of the Lender ESAP (either directly or by ensuring Contractor obligations are met) and delivered to the Lenders
EPC Contractor
<ul style="list-style-type: none"> • Fulfilment of all Contractor obligations outlined in the Project CESMP and Contractor management plans. • Ensuring compliance with project standards, obtaining all relevant permits and licenses.

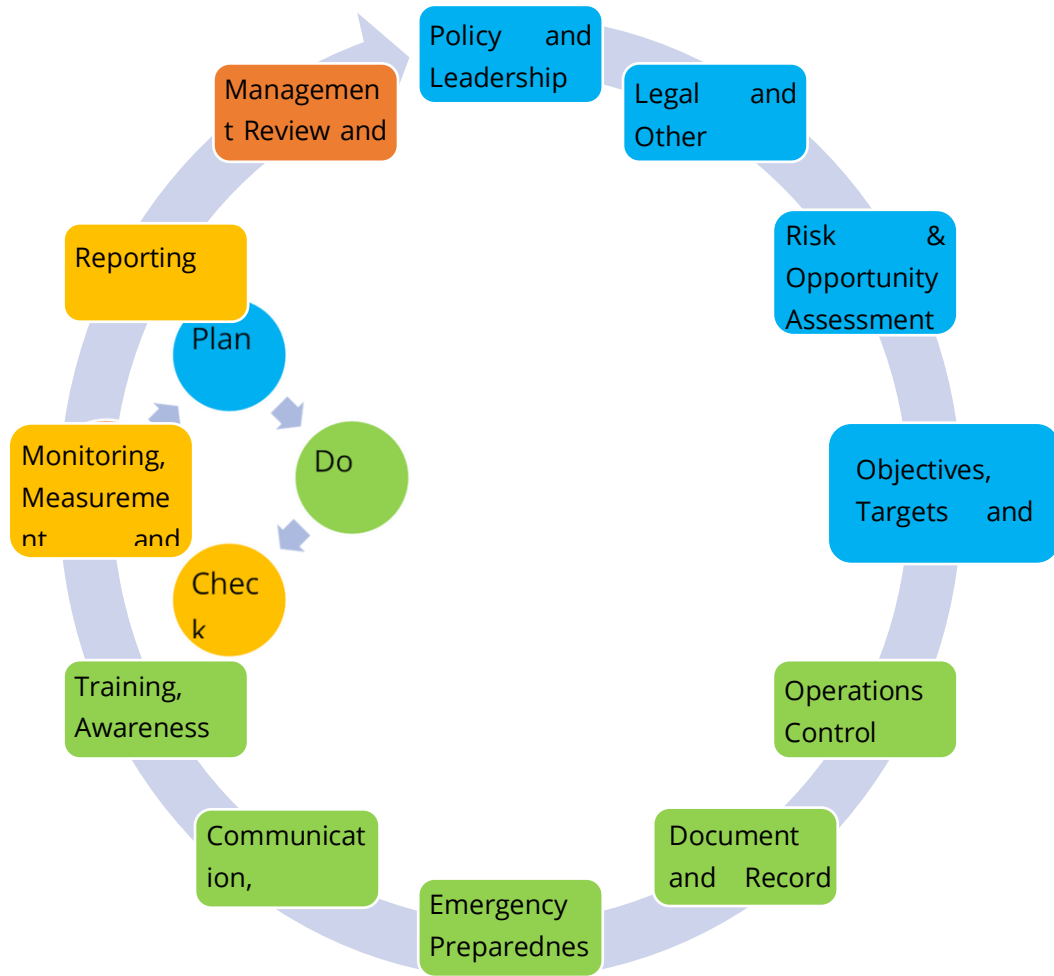
- Monitoring construction activities (including subcontractor activities) and taking measures within the scope of the CESMP and Contractor management plans.
- Develop of plans/procedures in line with the CESMP structure, implementation after the approval of the Project Company.
- Employment of HSSE staff within the scope of the project.
- Providing the necessary training to the contractor and sub-contractor staff on environmental and social issues.
- Environmental review, monitoring and audits related to ESMP practices, evaluation of results.
- Providing follow-up and analysis of environmental and social accidents.
- Environmental inspections, monitoring and audits related to ESMP practices, reporting to NEGK
- Prompt notification of accidents and incidents and keeping an incident register at construction site throughout the Project life.

4.5 Environmental and social management system (ESMS)

NEGK and the EPC Contractor must separately establish and maintain an environmental and social management system (ESMS) to support the implementation of respective obligations under the CESMP and that aligns with the requirements set out in EBRD ESP 2019 including:

- Establish and maintain an ESMS and health and safety management system (HSMS) developed in the manner of international frameworks quality, occupational health and safety and environmental management such as ISO 9001, ISO 14001, and ISO 45001 that is proportionate to their role on the Project and the impacts identified in the ESIA.
- Establish a Human Resources (HR) Policy that aligns with EBRD Performance Requirement 2 and specifically address issues including but not limited to: code of conduct; recruitment; compensation and benefits; official working hours; leave; termination; collective bargaining; child labour; forced labour and overtime to be adopted/reflected in the practices of ALL parties working on the Project.

An effective ESMS must follow the “Plan, Do, Check, Act” principles of international management systems incorporating the elements outlined in the figure below and described below.



4.5.1 NEGK-ESMS

The NEGK ESMS will consider oversight obligations on the EPC contractor for the construction phase as set out in the CESMP, the requirements of the O-ESMP and the Biodiversity Management Plan (BMP), SEP and local development obligations for the construction and operation phase as defined in following chapters.

4.5.2 EPC ESMS

The EPC-ESMS means the EPC Contractor's environmental, social, health and safety management system (including policies, plans and procedures) for managing compliance with Environmental and Social Law and Environmental and Social Standards and which is aligned to ISO 14001 and ISO 45001.

The EPC Contractor ESMS must cover the scope of the construction phase work and interface as necessary with the NEGK ESMS for all the topics outlined in section 5 and 4.6. The EPC ESMS and HR Policy must cover all third-party subcontractors working following the EPC Contractor.

The EPC Contractor ESMS will include a project specific E&S Policy and supporting plans and procedures outlining how it is intended to implement the required elements of the ESMS to ensure works are executed in a responsible manner.

The EPC Contractor must prepare a the plans and procedures outlined in Table 14 with the plans including as relevant the following information.

- Legal and other requirements – establish and maintain a system for monitoring legal and other requirements in a systematic way.
- Risk assessment and control – procedure for assessment of risk and opportunities and management processes for each phase to prevent or mitigate adverse E&S impacts and enhance opportunities.
- Objectives and targets – construction phase objectives and targets must be defined bed in Project plans and monitored using project-specific Key Performance Indicators (KPIs).
- Operations management – procedures must be defined to manage the operations to be performed at site, including management of change and sub-contractor management.
- Documentation handling – establish a complete and up-to-date file of all relevant sources of information, records and documentation to evidence compliance with E&S requirements.
- Communication and participation – Procedures must be defined to support communications at all stages of the Project/lifecycle as per the SEP and to ensure that personnel at the appropriate level and function know and understand their HSESS obligations and information.

Training awareness and competence – procedures must be developed to oversee competence and training and recorded in a training and competence matrix for all E&S roles and engineering roles with E&S responsibilities. Training may include induction training, on the job training, specialist training related to the competencies required for specific roles. General awareness training must also be provided on the ESMS and other E&S matters including:

- A general understanding of the health and safety and environmental risks associated with the works.
- Local, national, and international actions which are required to combat these risks.
- Notification of any specific receptor sensitivities.
- Emergency preparedness and response provisions.
- Requirements for waste management, materials management, traffic management, dust control, control of noise.
- Natural hazard risks.
- Requirements for H&S, environment and labour incident notification, investigation and reporting procedure.
- Stakeholder engagement requirements.
- Security requirements for the site.
- Labour grievance mechanism and code of conduct, welfare arrangements and key contract provisions.
- Worker code of conduct and workers grievance mechanism.
- Monitoring, evaluation of compliance and reporting – develop a program of monitoring and reporting to enable E&S performance to be evaluated against project standards. The monitoring and reporting system must include a feedback loop to promote continual improvement. Minimum monitoring and reporting requirements for the Project are

defined in Chapter 6 below. This must include an accident and incident reporting procedure.

- Supervision, inspections and auditing – the EPC Contractor must establish a program and supporting procedures to supervise and measure the effectiveness of the management system. This should be through a combination of inspections, audits (internal and third party).
- Management review and planning –Sub-Contractor management must demonstrate periodic review of the ESMS to ensure its continuing suitability, adequacy, and effectiveness

The EPC Contractor ESMS will be reviewed and accepted for use by NEGK PIU and EBRD at least 60 days prior to mobilisation at site.

The EPC Contractor will appoint key roles to support the implementation of E&S measures for the Project at the site level. The EPC Contractor will be required to nominate:

- one (1) EPC Contractor E&S Manager
- two (2) Senior EPC Contractor HSE Manager (or separate H&S Manager and Environmental Manager),
- one (1) EPC Contractor HR Manager,
- one (1) EPC Contractor social officer (CLO, accommodation, GBVH etc.)
- one (1) EPC Contractor HSE Officer for every 50 workers.

Subcontractors will also have their own E&S staff. Subcontractors with less than 20 workers shall deploy a non-dedicated E&S Manager. Subcontractors with more than 20 workers shall deploy a dedicated HSE Officer and an additional HSE Officer for each additional 50 workers deployed on-site.

The EPC Contractor's management team will be responsible for ensuring sub-contractor performance, including:

- Adequately informing sub-contractors of the requirements of the Project ESMP (this document) and the Contractor C-ESMP and ensuring they can adhere to the requirements.
- Making sub-contractors fully aware of all the E&S and occupational health and safety (OHS) and labour rights requirements that must be adhered to through back-to-back provision contract documentation.
- Identify the procedures for monitoring and reporting sub-contractor performance and integrate this into overall site reporting requirements.

The EPC-ESMS must include organization charts for the roles set out above. The HSE officers shall be appropriately qualified for this work and have the authority to issue instructions and take protective measures to prevent harm, accidents and environmental incidents.

This EPC-ESMS shall include the EPC Contractor's system manuals and related source documents, including policies, management programs and plans, procedures, requirements, performance indicators, responsibilities, training and periodic audits designed to maintain compliance with the Environmental and Social Standards, Environmental and Social Laws and ISO 14001/45001. This

EPC-ESMS shall be prepared by the EPC Contractor and delivered to the Owner at least sixty (60) days before the Commencement Date.

The EPC Contractor must develop a permit tracking mechanism/register to outline all necessary licenses, consents and permits in line with Environmental and Social Laws, including timing and responsibility for obtaining under the responsibility of the EPC Contractor.

The EPC Contractor must prepare the plans and procedures as summarised in Table 14.

An operational environmental and social management plan (O-ESMP) with supporting procedures, forms and method statements (60 days prior to commercial operation date (COD) will also be prepared.

4.6 HR policy

NEKG and EPC Contractor will provide human resources (HR) policies and plans demonstrating compliance with legal and other requirements stipulated in this ESMP. The policies and plans will include detailed information on workforce induction, worker rights, child and forced labour, equal opportunity, migrant workers, promotion of local employment opportunities, labour unions, worker accommodation requirements, provision for retrenchment plans, security personnel, influx management, and GBVH. The EPC Contractor will ensure that core labour requirements align with legislation and that requirements are cascaded down to contracting chains, including Subcontractors and suppliers of core materials.

5 Mitigation and Management Requirements

5.1 Introduction

The ESMP sets out requirements for the design, pre-mobilisation, construction (including site preparation) and operation phases of the Project.

5.2 Mitigation and Management Requirements – Design phase

Table 16: Mitigation and management requirements – design phase

Objective	Activity	Action	Responsibility	Timescales	Evidence
Avoid significant impacts to sensitive receptors (human, ecological, touristic, cultural) from the construction works.	OHTL, substation and access roads (permanent and temporary)	<ul style="list-style-type: none"> - OHL routing avoids existing settlements as far as possible structures (including fish farms and animal pens), crops and tree. - Maintain at least 125 m between dust generating equipment and dust sensitive receptors and the OHTL, substation and access road where possible. - Avoid all known areas of cultural heritage and archaeological significance and maintain a 50m set back between all features and any project infrastructure (permanent or temporary). - Site OHTL towers outside protection setbacks for rivers or at least 25m from surface water feature. - Site substation more than 50m from any surface water features. - Route access roads more than 50m from any surface water features. 	<p>NEGK (Technical Specification)</p> <p>Contractor (Detailed Design)</p>	<p>Pre-FC⁷</p> <p>Pre-Mobilisation</p>	<p>EPC Contract Technical Specification</p> <p>Approved Design</p>

⁷ pre-FC – Pre financial close.

Objective	Activity	Action	Responsibility	Timescales	Evidence
		<ul style="list-style-type: none"> - Maintain line routing at least 25m either side of the central conductor between sensitive receptor and the line route to factor in ICNRIP EMF exposure guidance. - Include requirement for a chance finds procedure in the Project contract. 			
Address climate resilience measures in the technical design.	Design / EPC Contractor Technical Specification	<ul style="list-style-type: none"> - Design OHTL for climate projections up to 2085 - Consider need to reinforce the structures or higher design standards (stronger winds, higher temperatures). - Design road to consider short-term, extreme weather events. - Design any drainage to account for increased or short-term extreme precipitation patterns. - Specify more effective cooling for substations and transformers, including retrofitting measures, improved shading (through greening), and choice of cooler locations where possible around the substation. 	NEGK (Technical Specification) Contractor (Detailed design)	Pre-FC Pre-Mobilisation	EPC Contract Technical Specification Approved Design
Minimise impact on groundwater, soils	All works	<ul style="list-style-type: none"> - Use of groundwater for potable or construction related purposes is prohibited. - Adopt tension stringing technique to avoid impact on soils between the towers and stringing points. - Grade temporary access roads so that their slope is not too large to avoid the 	NEGK (Technical Specification) Contractor (Detailed design)	Pre-FC Pre-Mobilisation	EPC Contract Technical Specification Approved Design

Objective	Activity	Action	Responsibility	Timescales	Evidence
		build-up of fast-running run-off water during extreme precipitation events.			
Traffic Management	Design / EPC Contractor Technical Specification	<ul style="list-style-type: none"> - Design laydown area and delivery approach to minimise vehicle movements on eastern third of the OHTL. - Design RoW access routes ensuring no project traffic through Kok-Moynok 2 including the residential area of DEU-10. 	Contractor (Detailed design)	Pre-Mobilisation	Approved Design
Ensure biodiversity mitigation measures are incorporated into the design.	Design / EPC Contractor Technical Specification	<ul style="list-style-type: none"> - OHTL Design Specification in the Contract to include the requirement to undertake the following for approval of the final design by a qualified project ecologist on behalf of NEGK. - Design for the installation of Bird Flight Diverters (BFDs), with BFD installed roughly once every 10 meters on each of the overhead, or static lines of the OHTL following GIP, within four specific segments, totalling 8.722 km in length, that have been identified as having elevated collision risk due to proximity to features that may concentrate eagle/vulture flight activity as listed below and elaborated in the BMP): <ul style="list-style-type: none"> o Narrow sections (2) of gorges with potential nesting habitat and elevated flight traffic of eagles and vultures o Chui River crossing, with potentially elevated flight traffic 	NEGK (Technical Specification) Contractor (Detailed design)	Pre-FC Pre-NTP	EPC Contract Approved Design

Objective	Activity	Action	Responsibility	Timescales	Evidence
		<ul style="list-style-type: none"> of waterbirds <ul style="list-style-type: none"> o Portion of line in proximity to NABU wildlife rehabilitation center, to avoid proximity to collision-prone rehabilitated birds near their release site - Design “Raptor safe” pylon designs for the entire OHTL: <ul style="list-style-type: none"> o electrified cables suspended below, rather than above support structures; o $\geq 2\text{m}$ of insulators at each attachment point of a powerline to a support structure; o $\geq 2\text{m}$ separation between electrified cables; o jumper cables suspended below insulators/support structures. - Micro-siting of towers, access road and temporary laydown areas to avoid known locations of <i>Malus sieversii</i>, <i>Tulipa zenaidae</i>, <i>Tulipa ostrowskiana</i>, and any other species of plants identified as PBF or with comparable redlist status, if discovered in preconstruction surveys, to the extent possible. - Micro-siting of pylons and access roads to avoid any areas within 25 m of the Chui, 			

Objective	Activity	Action	Responsibility	Timescales	Evidence
		<p>Konorchok, or Kok-Moinok Rivers, or within 25 m of riparian forest groves along the rivers</p> <ul style="list-style-type: none"> - Limit the extent of new access road that must be built along the RoW. Use existing road wherever possible (refer also to the transportation mitigation section). 			
Waste and Hazardous materials.	Design / EPC Contractor Technical Specification	<ul style="list-style-type: none"> - Prohibit the following materials in the project specification: <ul style="list-style-type: none"> o asbestos; o PCB containing materials; o lead based paints; o pesticide, herbicides as defined under Stockholm convention. - Offsite manufacture of foundation blocks. - Waste must be segregated at site and where possible options for recycling adopted. 	<p>NEGK (Technical Specification)</p> <p>Contractor (Detailed design)</p>	<p>Pre-FC</p> <p>Pre-Mobilisation</p>	<p>EPC Contract</p> <p>Approved Design</p>
Safeguard the wellbeing and improve the living standards of those whose livelihoods are involuntarily displaced.	Prepare Livelihood Restoration Plan (LRP)	<ul style="list-style-type: none"> - Avoid all livelihood features / structures (including fish farms and animal pens), crops and trees) where possible 	Contractor (Detailed design)	Pre-Mobilisation	Approved Design
EMF	Detailed design	<ul style="list-style-type: none"> - Design conductors following established guidance. 	Contractor (Detailed design)	Pre-Mobilisation	Approved Design
Health and Safety (worker, community)	Design / EPC Contractor	<ul style="list-style-type: none"> - Where necessary include fencing, safety signage (in locally used languages) and other relevant features to deter 	Contractor (Detailed design)	Pre-Mobilisation	Approved Design

Objective	Activity	Action	Responsibility	Timescales	Evidence
	Technical Specification	<p>community members from entering the site and/or climbing the OHTL towers.</p> <ul style="list-style-type: none"> - Avoid or minimize routing the Project through touristic areas, where possible. - Plan to reach peak construction during the touristic off-season. - Incorporate GIP engineering controls in Project design (clearances, loadings). - Incorporate measures to reduce the risk of these hazards impacting the Project as per national codes and norms and international standard specifications. - Require the Main Contractor to be certified to ISO45001 (or equivalent). - Specify safety signage on all towers following GIP electrical specifications and codes of practice. - All towers to have security features to prohibit climbing or other interference. 			
Labour	EPC Contractor Technical Specification	<ul style="list-style-type: none"> - Lead contractor and Tier 2 sub-contractors to demonstrate functioning HR policy aligned with ILO core conventions as well as Kyrgyz law in contractor contracts. - Define organisation requirements for the construction and operation phase for the developer and the contractor(s), including the number of E&S personnel and their qualifications. - Contractor ESMS and C-ESMP prepared 	Contractor (Detailed design)	Pre-Mobilisation	Approved Design

Objective	Activity	Action	Responsibility	Timescales	Evidence
		and accepted by NEGK or the Main Contractor.			
Protection of known cultural heritage	Design / EPC Contractor Technical Specification	- Consider options to relocate the known angle tower that sits within 50m of a kurgan (noting this may have resultant impacts to the alignment of the line that may raise other impacts) (refer to archaeological report in Volume III).	Contractor (Detailed design)	Pre-Mobilisation	Approved Design

5.3 Mitigation and Management Requirements - Pre-mobilisation phase

Table 17: Mitigation and management requirements – pre-financing / pre-mobilisation (any mobilization to site except pre-construction survey work)

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
Comply with national permit requirements.	Environmental permits (permanent)	- Obtain national Environmental Approval (Stage 1 or 2).	Contractor approved by NEGK/Lenders	Pre-Financial Close (FC)	Permit matrix – monthly updates
Implement robust ESMS for the duration of the Project.	ESMS implementation	- Review NEGK operational HSMS to identify gaps to align with GIP (e.g., ISO45001) for implementation prior to COD.	Contractor approved by NEGK/Lenders	Pre-Financial Close (FC)	NEGK HSMS gap analysis
Implement robust ESMS for the duration of the Project.	Site implementation from NTP to COD	- Develop a project-level Environmental and Social Management System (ESMS) (aligned with ISO14001 and ISO45001) to address gaps in NEGK corporate ESMS (row above) for overseeing construction phase works including: <ul style="list-style-type: none"> o E&S Policy o C-ESMP o Supporting plans and procedures (see topic specific sections below) o Legislation Register o Organogram and definition 	Contractor approved by NEGK/Lenders	Pre-mobilisation	E&S Policy ESMS C-ESMP Internal communication procedure Inspection and audit program Incident reporting and investigation procedure

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		<ul style="list-style-type: none"> of roles and responsibility for E&S management ○ Training Matrix ○ Inspections and audits schedule ○ Monitoring ○ Reporting ○ Document Control ○ Management Review 			E&S monitoring program
Demonstrate Contractor capacity to implement the H&S requirements for the Project.	Site implementation from NTP to COD	<ul style="list-style-type: none"> - Develop a project-level Environmental and Social Management System (ESMS) (aligned with ISO14001 and ISO45001) to address gaps in NEGK corporate ESMS (row above) for overseeing construction phase works including: <ul style="list-style-type: none"> ○ E&S Policy ○ Supporting plans and procedures (see topic specific sections below) ○ Legislation Register ○ Organogram and definition of roles and responsibility for E&S management ○ Training Matrix ○ Inspections and audits schedule ○ Monitoring ○ Reporting 	Contractor approved by NEGK/Lenders	Pre-mobilisation	E&S Policy ESMS C-ESMP Internal communication procedure Inspection and audit program Incident reporting and investigation procedure E&S monitoring program

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		<ul style="list-style-type: none"> Document Control Management Review 			
Demonstrate NEGK capacity to oversee E&S	Site implementation from NTP to COD	<ul style="list-style-type: none"> Assign NEGK responsible person for E&S to oversee E&S obligations for the site (may be based elsewhere). Define E&S safeguard specialist in PIU organogram. 	NEGK	Pre-mobilisation	Named NEGK person CV PIU organogram
Demonstrate Contractor capacity to implement the H&S requirements for the Project.	Site implementation from NTP to COD	<ul style="list-style-type: none"> Establish a comprehensive Construction HSMS and OHS Plan (OHTL) and separate plans for each end-user works. Conduct Project specific risk assessment identifying physical chemical, biological and other hazards and prioritising hazard elimination, hazard control and hazard minimisation. Develop a Project specific Emergency Preparedness and Response Plan (EPRP) (incorporating risk management protocols for climate related risks, natural disaster risks, traffic risks, response to traffic accidents etc). 	EPC Contractor	Pre-mobilisation	EPC HSMS approved by PIU and Lenders

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		<ul style="list-style-type: none"> - Develop a medical evacuation procedure to enable injured workers to access appropriate emergency facilities. Check access and arrival times of ambulances and other emergency services. Ensure medical preparedness includes paramedic, first aid equipment and first aiders. 			
Demonstrate Contractor capacity to implement the E&S requirements for the Project.	Pre-mobilisation	<ul style="list-style-type: none"> - Develop a project-level Environmental and Social Management System (ESMS) (aligned with ISO14001 and ISO45001) to address gaps in NEGK corporate ESMS (row above) for overseeing construction phase works including: <ul style="list-style-type: none"> o E&S Policy o Supporting plans and procedures (see topic specific sections below) o Legislation Register o Organogram and definition of roles and responsibility for E&S management o Training Matrix or all workers, including inductions and regular refresher training o Inspections and audits 	EPC Contractor	Pre-mobilisation	Contractor ESMS and C-ESMP approved by PIU and Lenders

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		<ul style="list-style-type: none"> ○ schedule ○ Monitoring ○ Reporting ○ Document Control ○ Management Review 			
Demonstrate Contractor capacity to meet EBRD PR2 and national labour law	Labour management	<ul style="list-style-type: none"> - Lead contractor and Tier 2 sub-contractors to demonstrate functioning HR policy aligned with ILO core conventions as well as Kyrgyz law in contractor contracts and specifically, sets a minimum age for working on the Project, prohibits the use of child and forced labour and encourages non-discrimination. - Define organisation requirements for the construction and operation phase for the developer and the contractor(s), including the number of E&S personnel and their qualifications. 	EPC Contractor	Pre-mobilisation	HR Policy documentation approved by PIU and Lenders
Ensure accommodation aligned with EBRD PR2	Accommodation management	<ul style="list-style-type: none"> - Prepare an Accommodation management plan that defines available worker accommodation in line with the EBRD and IFC Guidance on worker accommodation. 	EPC Contractor	Pre-mobilisation	Accommodation Management Plan approved by PIU and Lenders
Ensure transparent and robust supply chain.	Selecting suppliers	<ul style="list-style-type: none"> - Perform supply chain due diligence/obtain the third-party supply chain due diligence reports to verify potential suppliers' credentials regarding the occurrence of forced 	Contractor approved by NEGK/Lenders	Pre-mobilisation	Supply Chain and Local Employment and Procurement

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		labour child labour or occupational health and safety failures			
Promote the use of local workers on the Project.	Procurement of local labour and contractors	<ul style="list-style-type: none"> - Develop a local employment and procurement protocol. - Prepare a labour Policy on prioritising local employment. - Identify villages that will be considered 'local' for the purpose of local hiring (suggested villages up to 15 km from the Project RoW). - Discuss with local community the employment and procurement contracts available, in order to manage expectations (as there will not be a lot of jobs available). - Prioritize employment of community members where possible. - Prioritize procurement of goods from local communities where possible. 	EPC Contractor	Pre-mobilisation	Local employment procedure approved by PIU and Lenders Labour Policy MOM of meetings (SE Log) Monthly Labour monitoring statistics Procurement summary
Implement good international practice (GIP) for Contactor and Site management and coordination.	Notification of works	<ul style="list-style-type: none"> - Plan ahead and give regulators advanced warning of potential problems and start of works - Always display on site the emergency number for regulators and local community leaders at key worksites - Ensure site personnel know the correct procedure for reporting incidents 	EPC Contractor	Pre-mobilisation	Monthly update via the PIU

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
	Managing sub-contractors	<ul style="list-style-type: none"> - Sub-contractors to provide work completion certificates and EHS certificates as proof of their past environmental performance prior to hiring. - Ensure Sub-contractors have a copy of the Project ESMP as part of the tender process. - Ensure sub-contractors attend environmental training / induction session. - Audit the performance of sub-contractors during the Project. - Adhere to the local hiring policy (see section below) for prioritising local contractors. - Require sub-contractors to provide a copy of their HR policy for approval, or that they commit to following the EPC Contractor's/NEGK's HR policy. 	EPC Contractor	Part of contractor tender process	Proof of checks, training records Site inspection records HR policies approved by EPC Contractor
	Management and site control	<ul style="list-style-type: none"> - Nominate person within Contractor's organisation with defined responsibility for EHS role in Project. - Require all method statements to include EHS requirements. - Through relevant training, ensure everyone on site is aware of their responsibilities and liabilities with respect to the environment and social 	EPC Contractor	Throughout project works	Successful third-party audit (NEGK's Environmental Consultant)

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		responsibility. - Through site induction, make staff and visitors aware of Project environmental issues and environmental standards. - Display warning signs at key work sites prominently. - Make NEGK's environmental policy available to all on site.			
		- Adequately protect primary work sites against vandalism, theft and breakage. Construction works Contractor to be responsible for security the site at all times while the services are being performed. - Secure the worksite boundary.	EPC Contractor		
	All site works	- Establish a safe working environment with an occupational health and safety (OHS) plan that addresses potential hazards, identifies preventive and protective measures, including training and use of PPE, and describes documentation and reporting of accidents, diseases and incidents.	EPC Contractor	Throughout project works	OHS Plan

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
	Liaison with the local community	<ul style="list-style-type: none"> - Nominate a community point of contact in the Contractor team (a CLO). - Display contact board at the perimeter of key work sites stating contact details in the event of a complaint or comment. - Use this board to display information about project phasing and other relevant matters. - Implement the requirements of the grievance mechanism and stakeholder engagement plan (SEP). - Deal with any complaints that arise quickly and in accordance with the defined complaints procedure. - Create a log of complaints and ensure they are properly followed up and resolved. 	EPC Contractor/CLO	Start of site works – ongoing thereafter	Complaints register Monthly audits Communication records CLO Daily site walks around Grievance logs Number of complaints
Ensure general site housekeeping and environmental protection	Daily and weekly site inspections of permanent work sites	<ul style="list-style-type: none"> - Work sites will be subjected to “walk-round” site inspection by the contractors’ EHS management staff on a daily basis, 	EPC Contractor (oversight by NEGK)	Throughout project works	Site inspection records Number of complaints Target zero
Safeguard the wellbeing and improve the living standards of those	Complete implementation of the Livelihood Restoration Plan	<ul style="list-style-type: none"> - Prepare a Livelihood Restoration Plan (LRP) based on the LARF once all designs and funding requirements are completed. - Complete all land acquisition and 	NEGK	To be completed prior to construction	Evidence of compensation paid Close out report

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
whose livelihoods are involuntarily displaced		<p>resettlement requirements per the Livelihood Restoration Plan (LRP) prior to the commencement of construction.</p> <ul style="list-style-type: none"> - Confirm with herders if there is sufficient area to graze their animals away from the Project construction works. - Confirm with croppers if there is sufficient area to continue haymaking. - Confirm that construction will not restrict access to grazing / cropping areas. - Confirm any possible employment impacts to herder employees. - Confirm potential livelihood impacts to tourism companies and local businesses. - Design livelihoods grievance mechanism (aligned with main community grievance mechanism) to be implemented and disseminate in a culturally appropriate way to all affected persons. - Where possible time the peak construction of the Project so that it does not coincide with key tourism periods. - Conduct awareness campaigns for 			

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		herders, private farm owners, business owners and local community members and as per Project SEP.			
EMF	All site works	<ul style="list-style-type: none"> - Conduct awareness-raising activities with local farmers, herders and community members to reduce exposure when grazing livestock in the RoW in preparation for future activity under the operational line. 	NEGK	Throughout project works	SE Log Awareness raising material.
Protected Priority Biodiversity Features	Complete mitigation obligations	<ul style="list-style-type: none"> - Conduct pre-construction survey for nesting PBF raptors and vultures within 1 km of the OHTL within the central portion of the OHTL containing potential nesting habitat (refer to BMP for details). - Micro-siting of pylons and access roads to avoid any areas within 500 m of an active nest of a PBF bird species, if possible. - Prior to crossing forest land, consult with Forest Service under Ministry of Emergency, to confirm notify and agree measures to restore vegetation in the RoW if needed (based on final tower siting, access roads, laydown area etc.). Requirements to be reflected in the Project BMP. 	EPC Contractor (oversight by NEGK)	To be completed prior to construction	Updated BMP approved by Lenders.

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		<ul style="list-style-type: none"> - Conduct preconstruction sensitive plant survey in the areas where soil disturbance will occur during construction (pylon bases, new access roads, laydown areas) in portions of OHTL with alpine steppe habitat, to look for all species described as PBF, as well as any other rare plants with similar redlist status, <ul style="list-style-type: none"> o <i>Malus sieversii</i> (IUCN VU, Kyrgyz LC – 2 localities) o <i>Tulipa ostrowskiana</i> (IUCN NT, Kyrgyz VU – 12 localities) o <i>Tulipa zenaidae</i> (IUCN VU, Kyrgyz VU – 1 locality) - Mark the locations of any sensitive geophytes (including all plant species listed at left except for <i>Malus sieversii</i>) discovered within areas to be disturbed during construction with a metal nail, so that subsequent to the plants' brief springtime flowering period, the underground structures (e.g. bulbs) of these plants can be found by the ecologists using a metal detector, and the bulbs can be rescued/relocated to nearby non-disturbed areas, 			

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		<ul style="list-style-type: none"> - Construction phase plant rescue/relocation program (to be defined in the BMP), in consultation with national authorities and as per regulations, including topsoil/soil conservation and replanting measures. - Prior to crossing forest land, consult with Forest Service under the Ministry of Emergency, to confirm, notify and agree measures to restore vegetation in the ROW if needed (based on final tower siting, access roads, laydown area etc.) 			
Water pollution	Construction of project infrastructure may lead to pollution events	<ul style="list-style-type: none"> - Prior to works commencing (in particular during the wet season, late autumn not early Spring), conduct consultation with Ministry of Emergency for any specific recommendations to minimise risks from localised flooding. 	EPC Contractor (oversight by NEGK)	To be completed prior to construction	Surface water protection measures included in Environmental Management Plan
Ensure waste is handled and disposed in line with GIP and EBRD PR3	All site activities	<ul style="list-style-type: none"> - Develop EPC construction Project Waste Management Plan as part of the EPC ESMS. - Liaise with local municipality to identify the available list of waste contractors. - EPC to sign contract with waste management providers. - EPC to perform duty of care audit of 	EPC Contractor	30 days prior to mobilisation	Project Waste Management Plan

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		<p>the proposed general waste, recycling, construction waste and hazardous waste disposal facilities in Kyrgyzstan to confirm compliance with GIP.</p> <ul style="list-style-type: none"> - Disposal of solid waste will be at the closest sanitary landfill to the project site that aligns with GIP. The minimum criteria that define a sanitary landfill are identified in the ESMP. If any of the requirements are not met, the disposal facility will not be used for the purpose of disposal of solid waste for the project and the next closest sanitary landfill will be identified. Endpoint disposal facilities must be approved for use by the Lenders at least 1 month prior to commencement of construction. - EPC Contractor E&S Manager will be required to undertake an inspection on the final waste disposal facilities that the authorized contractors will utilize for disposal of waste streams. The inspection will aim to ensure that the disposal facilities are management and operated in line with Good International Practice (GIP) 			

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
Ensure protection of soils to minimise soil erosion during site clearance	Site / RoW clearance	<ul style="list-style-type: none"> - Develop Soil / Vegetation Removal And Erosion Control Plan 	EPC Contractor	30 days prior to mobilisation	Project Soil / Vegetation Removal And Erosion Control Plan
Ensure protection of communities and road infrastructure during works	All activities	<ul style="list-style-type: none"> - Develop a RoW Traffic Management And Transportation Management Plan (deliveries) - Prepare a RoW access map defining exact access route to each Workfront. - Perform a road condition assessment (gravel road) before and following the "core construction period" to assess damage/dilapidation to road infrastructure that can be attributed to project construction. Repair damage as appropriate, i.e., "make good". - Run a safety campaign to improve the people's knowledge of the traffic hazard on their roads, public information and other activities to address the issues, in particular along the EM11. - Post road safety notices in roadside cafés to inform road users of safe and defensive driving approaches. - Post warning posters in roadside cafes to warn local of construction vehicles 	EPC Contractor	30 days prior to mobilisation	Project Traffic Management And Transportation Management Plan

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		entering and exiting EM11 to the gravel roads (and using the gravel roads). - Disclose the community grievance mechanism for reporting traffic infractions by Project vehicles.			
Safeguard community members	All activities	- Prepare a Security Management Plan that outlines the security requirements for construction and operations (including numbers of guards, whether they will be armed, use of video technology, training and background checks for guards etc). - Prepare an Emergency Preparedness And Response Plan, particularly including access to medical facilities and traffic accidents. - House workers from outside the project area or municipality in accommodation away from touristic locations, and in designated areas of the city, thereby reducing potential social tensions. - Prepare a GBVH Plan to guard workers and community members against sexual exploitation, GBV and contracting communicable diseases, including GBVH grievance mechanism. - Disclose Traffic Management And Transportation Management Plan to	EPC Contractor	30 days prior to mobilisation	Security Management Plan Emergency Preparedness And Response Plan GBVH Management Plan SE Log

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		community members, should any communities be identified as vulnerable to Project impacts along the transportation route.			
Protecting of Known Kurgans	Excavation works	<ul style="list-style-type: none"> - Develop a Protection Zone Plan (hereinafter – PZP) incorporating the following protections applicable during the construction works. For sites within the 0–50 m buffer, the PZP must be developed by a restoration architect. For sites within the 50–150 m buffer, the PZP must be developed by an accredited archaeologist. The Protection Zone Plan is approved by the Ministry of Culture. - If a 50m buffer cannot be maintained conduct a “Salvage Investigation” to determine whether construction works can proceed without excavation. If preservation of the site is not possible, an Excavation and/or Relocation Plan for Archaeological Sites must be developed and implemented under the supervision of an archaeologist. - In addition to recommendations that may arise from the Salvage report, all features within 50m of planned work (tower, substation or access road) 	EPC Contractor	30 days prior to mobilisation	Protection Zone Plan Salvage Investigation (if required)

Objective	Activity	Action	Responsibility	Timescales	Monitoring / KPI
		must erect a cordon to reflect the 50m buffer zone, including clear signage, to protect the buffer zone and ensure no project vehicles encroach into the 50m protection zone.			
Protect unidentified cultural heritage	Excavation works	<ul style="list-style-type: none"> - Establish a Chance Find Procedure (that includes national and EBRD requirements as well as following GIP) for the construction phase, or any phase that requires excavation works - Ongoing discussion with local community members if they have any areas of cultural significance within the proposed Project site and avoid any areas that are identified 	EPC Contractor	30 days prior to mobilisation Ongoing	Chance Finds procedure SE Log

5.4 Mitigation and Management Requirements – Construction

Table 18: Mitigation and management requirements – construction

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
Minimise dust generation within the direct AOI (200 m from the works).	Earthworks, material handling (C&D) (NB measures to control dust from vehicle activities described under	<ul style="list-style-type: none"> - Demarcate specific delivery road and access tracks to points along the RoW and within the OHTL RoW and new substation site and ensure all workers stick to demarcated areas. - Locate all borrow pits at least 200m from any sensitive receptors (human or ecological). 	EPC Contractor (overseen by NEGK Contractor)	Throughout construction phase	Site inspection records Community grievances

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
	<p>traffic and transportation)</p> <p>Infrequent maintenance activities (O&M)</p>	<ul style="list-style-type: none"> - Use existing concrete batching plants in the local area for cement production or use pre-cast concrete blocks. - Following the SEP, inform nearby residents, including the NABU Centre and road users about the timing and duration of works at least 2 weeks before they commence. - Inform local community of the community grievance mechanism (provided in detail in the standalone SEP) which should be available for the neighbouring land users to submit any grievances including those related to dust generation. - Excavation, handling and transport of erodible materials shall be avoided under high wind conditions where practicable. - Minimise dust from material handling sources and from open area sources, including storage piles, by using control measures such as covering, seeding or fencing stockpiles to prevent wind whipping - Enforce speed limits and limit vehicle movements to a maximum of 15 km/h for project vehicles on unsurfaced roads. 			

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<ul style="list-style-type: none"> - Ensure no bonfires or open burning of materials are permitted at the site. - Ensure that all vehicles carrying loose or potentially dusty material to or from the site are fully covered. - Toolbox talks to all workers on the management of dust. 			
Minimise the impact of fugitive emissions from vehicle exhausts and equipment on receptors along with the direct AOI.	Earthworks, material handling/vehicle movements	<ul style="list-style-type: none"> - Control fugitive dust emissions using water or other control measures such as chemical bonding agent or aggregate. - Guarantee that vehicle engines and equipment on site are not left running unnecessarily. - Reduce the movement of construction traffic around the site as much as possible. - Where feasible, use low sulphur fuels to lower SO₂ emissions. - Avoid operating equipment unnecessarily. - Obtain maintenance logs of all vehicles before start of works to confirm vehicles meet national standards for exhaust emissions. 	EPC Contractor	Throughout construction phase	Site inspection records Construction reports
	Operation of site and equipment	<ul style="list-style-type: none"> - Keep normal working hours between 7am and 6pm Monday to 	EPC Contractor		Site inspection records

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
Minimise noise emissions in the OHTL AOI.	presence of workforce at all work fronts and from construction traffic	<p>Saturday.</p> <ul style="list-style-type: none"> - Plant and equipment to be located and operated at least 200 m from nearest sensitive receptors (NSRs) (F6, F15, S3, C9, C10), NABU Centre, fishpond, active nests as defined in the pre-construction survey). - Locate all borrow pits at least 200m from any sensitive receptors (human or ecological). - Avoid blasting. - Prohibit night-time working. - Following the SEP, inform nearby residents, including the NABU Centre and road users about the timing and duration of works at least 2 weeks before they commence. - Inform local community of the community grievance mechanism (provided in detail in the standalone SEP) which should be available for the neighbouring land users to submit any grievances including those related to noise. - Position plant items as far as practically possible from sensitive receptors. - Use quietest work methods and plant items where practicable. - Equipment to be properly 		Throughout construction phase	<p>Construction reports</p> <p>Site inspection records</p> <p>Construction reports</p>

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<p>maintained and fitted with appropriate noise control at all times.</p> <ul style="list-style-type: none"> - Avoid unnecessary revving of engines. - Vehicles are not permitted to idle with engines on. - Switch all equipment off when not in use. - Locate static plant (e.g., generators) to take advantage of any screening to break the line of sight from receptors. - Brief site operatives to keep noise to a minimum. 			
Minimise impact on surface water courses and groundwater.	All works	<ul style="list-style-type: none"> - Drinking water at the construction work front to be provided by bottled water (equating to at least 4.4 litres per day per worker). - All cement to be delivered to site pre-mixed or pre-cast from third parties with approved water use licences. - Do not locate any temporary worksites within 50 m of surface water features or within protection setbacks. - Report all incidents relating to water features in incident log established by the EPC as part of the 	EPC Contractor	Throughout construction phase	<p>Site inspection records</p> <p>Construction reports</p>

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<p>construction ESMS.</p> <ul style="list-style-type: none"> - At work fronts, use barriers between works and ground to minimise impacts from spills or other issues. - Ensure wastewater does not flow directly to ground. - All chemicals, fuels, and oils are stored at the laydown area at either end of the OHTL, not at the work fronts. - Any small quantities stored at the work front must be secured in a suitable container or vehicle overnight and when not in use. - There is no direct discharge of contaminated water or potentially contaminated water to the ground without prior treatment. - No herbicide to be used. - Do not refuel at the tower/stringing work front. All refuelling occurs at a dedicated refuelling site at either end of the OHTL or a refuelling station. - No concrete washout is to take place at tower work fronts. All cement trucks must return to the batching facility or a dedicated wash-out facility at either end of the OHTL to perform cement washout. 			

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<ul style="list-style-type: none"> - Undertake works with hazardous liquids over an area of hardstanding or temporary gravel to avoid seepage to groundwater in the event of a spill. - Portable latrines to be provided at each work front. - General operational management requirements concerning good housekeeping during maintenance works and waste management and spill management provisions must be implemented. 			
Minimise damage to road infrastructure (surfaced roads) and residents along the route (see also CHS below).	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - No project traffic through Kok-Moynok 2 community. Use alternative access route. - No project traffic to go through Kok Moynok 2 community "DEA 10" USE ALTERNATIVE ACCESS ROUTE FROM EM11 (main junction). - Enforce speed limits and reduce vehicle movements (maximum of 15 km/h) for project vehicles on unsurfaced roads. - Comply with weight limit restrictions on all roads. 	EPC Contractor	Throughout construction phase	Approvals Traffic management plan Training logs/ attendance sheets Signage in place
Minimise traffic-related accidents		<ul style="list-style-type: none"> - Ensure all Project vehicles are clearly marked as project-related vehicles. - No nighttime driving along unsurfaced roads. 	EPC Contractor	Throughout construction phase	Road signs Flaggers

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
(surfaced and unsurfaced roads).		<ul style="list-style-type: none"> - All refuelling to take place at central laydown area (not along the OHTL routes or at the work fronts). - Develop drivers code of conduct. - Enforce speed limits and reduce vehicle movements (maximum of 15 km/h) for project vehicles on unsurfaced roads. - Following the SEP, inform nearby dwellings and road users on the timing and duration of works along the OHTL route. - Ensure escorts, flag persons and other safety measures are employed where necessary (in particular on single track roads). - Coordinate with all necessary authorities (especially if there are any abnormal loads). - Include measures to respond to traffic incidents in the EPRP. - Evidence that all drivers can demonstrate required competencies for the vehicle they are driving and have signed a driver's code of conduct 			<p>Reporting on traffic accidents/incidents/ near misses</p> <p>Training logs/ attendance sheets</p>
Minimise impact to soils (contamination).		<ul style="list-style-type: none"> - Adopt GIP for management for pollution prevention from using machines and equipment, refuelling, storage and handling of 	EPC Contractor	Throughout construction phase	Site inspection records

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		hazardous materials and management of wastes.			Construction reports
Minimise impact to soils (degradation).	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Concentrate earthworks in the dry season (summer) where possible. - Avoid total removal of vegetation at nominated worksites (see biodiversity section). - Confine traffic movement to designated routes. - Immediately restore the topsoil and vegetative cover using seeded restoration techniques for all temporarily disturbed areas, to minimise soil erosion. - For any area impacted by compaction, rehabilitate the compacted area to support the return of the impacted area to the original state as quickly as possible following completion of the works. This may require aeration of the topsoil, enrichment of the topsoil or reintroduction of selected species and shrubs. Do not rely on natural rehabilitation. - Areas where natural regeneration has not been successful and native vegetation is the final land use 	EPC Contractor	Throughout construction phase	Site inspection records Construction reports

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<p>objective (i.e. where land form is not stable after 12 months) should also be seeded with native plant species.</p> <ul style="list-style-type: none"> - Direct seeding will be undertaken in areas where immediate stabilisation is required - Ensure correct PPE for workers during excavation works. - Reflect natural gradient and relief when reinstating soils. - When stripping, stockpiling or placing soil, do so in the driest condition possible and use tracked equipment where possible to reduce compaction. - Keep soil storage periods as short as possible. - Clearly define topsoil and sub-soil stockpiles of different soil materials at each work front for reuse of subsoil. - Use earthmoving plant that is appropriate to the size of the site, the volume of soil to be stripped and haul distances. - Topsoil will normally be stripped to a thickness defined by depth below the surface and a distinct colour change. 			

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
Control of Invasive species and weed management	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Map any areas of invasive species noted during the clearance works. - Vehicles and machinery remain on designated roads and access tracks, and if they come into contact with a weed infested area, they will require a wash-down prior to leaving the area; - Access tracks and disturbance areas will be regularly inspected for weeds and control measures employed where declared weeds are identified. - Weed training and identification by all employees, reporting and control will be addressed in the site induction; - Rehabilitation of disturbed areas may benefit from control of other exotic grasses; and - Monitoring of weed infestations within disturbed areas will occur at least monthly during construction 	EPC Contractor	Throughout construction phase	Site inspection records Construction reports
Ensure appropriate handling, storage, disposal of solid waste and hazardous waste to minimise impacts to	OHTL (including access routes), S/S	<ul style="list-style-type: none"> - Use a waste manifest (or Chain of Custody Form) will be used which details the type/ amount of waste that is generated by EPC Contractor, transferred by the licensed waste collector from the site and disposed 	EPC Contractor	Construction phase	Site inspection records Construction reports

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
groundwater, land and workers.		at final location. <ul style="list-style-type: none"> - Define and demarcate dedicated temporary waste collection site at each work front (or OHTL section), and for substation and access roads. - Remove all waste at work front on a daily basis to the centralised waste handling areas (construction camp). - Avoid, minimise the generation of hazardous and non-hazardous waste materials as far as is practicable. - Apply GIP for the handling, segregation, transportation and disposal of waste of offsite disposal. - Explore options for recycling based on the availability of handling facilities in the region. - Train workers on their rights regarding working with hazardous wastes (e.g., PPE) and the correct way to handle and dispose of waste. 			
Biodiversity	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Implement sensitive (PBF) plant rescue/relocation, using metal detector to find the locations of any sensitive geophytes (including all plant species listed at left except for <i>Malus sierversii</i>) discovered and marked with metal nails during the pre-construction surveys, and then 	EPC Contractor	Construction phase	Project design Pre-construction checks

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<p>follow botanical good practice for transplanting such individuals to nearby, areas, potentially including temporary disturbance areas to be rehabilitated post-construction. Mark the locations of relocated plants with metal nails to allow for subsequent survivorship/rescue success monitoring (refer to BMP).</p> <ul style="list-style-type: none"> - Avoid siting generators or other noisy equipment within 500m of PBF raptor or vulture nests active during the 2026 season. - Micro-siting of pylons and access roads to avoid any areas within 500 m of an active nest of a PBF bird species, if possible. If it is not possible, then avoid below ground work and tower erection at towers located within 500m of such nests between March and May. - All equipment that potentially can generate pollution (generators, hazardous material storage, heavy machinery) to be parked/stored/sited more than 50m from riverbanks - Identification training for workers to identify the Asian Frog for avoidance. 			

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<ul style="list-style-type: none"> - Minimize soil/vegetation disturbance during construction and, where required, use sustainable soil/vegetation techniques. - Use only the demarcated area for laydown and access (construction and operation). - Avoid any deposition of sediment or pollutants into the rivers - Minimise use of trenches or other steep-walled excavations. - Backfill open excavations as soon as possible after construction activity. - Rehabilitate temporarily disturbed areas as soon as possible after construction activity is finished to minimise the risk of soil erosion - Worker/contractor training/awareness, supervision regarding impacts to animals, and protection of species. - Prohibit poaching and interactions with fauna and flora in the worker code of conduct. - Establishment, posting, and enforcement of vehicular speed limits and other traffic management measures. - Implement good housekeeping 			

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		measures for materials handling and waste management			
Protection of known CH	All works	<ul style="list-style-type: none"> - Implement requirements of the PZP and Salvage Plan as appropriate - Include training on chance finds procedure in the Site Induction (induction and TBT) - Undertake training on chance finds (CFs) - Undertake awareness raising activities, including presentation of maps during the onboarding of all subcontractors, to identify areas of known cultural heritage sites, and procedures in place to protect the sites. - Provide training (during induction and regular refresher training) to all workers on the locations of known cultural heritage sites, and no-go areas. - Ongoing discussion with local community members if they have any areas of cultural significance within the proposed Project site and avoid any areas that are identified. 	EPC Contractor	Construction phase	Site map (showing cultural mitigations) Training Log Training materials SE Log
Manage potential unexpected discovery	OHTL foundations and work	<ul style="list-style-type: none"> - Should items of cultural heritage be identified they should be managed in line with the chance find procedure. 	EPC Contractor	Construction phase	Chance finds procedure Training Log

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
of archaeological remains/ artefacts.	establishing access roads	<ul style="list-style-type: none"> - Undertake awareness raising activities, including presentation of maps during the onboarding of all subcontractors, to identify areas of cultural heritage sites, and procedures in place to protect the sites. - Provide training (during induction and regular refresher training) to all workers on the locations of known cultural heritage sites, and no-go areas. 			<p>Toolbox talk logs</p> <p>Chance finds register (if necessary)</p>
Safeguard the wellbeing and improve the living standards of those whose livelihoods are involuntarily displaced.	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Implement livelihood restoration requirements of the LARF/LRP 	EPC Contractor	Construction phase	Close out report
Protect worker health and safety.	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Ensure workers training includes EMF safety program. - Workers to receive correct personal protective equipment (PPE). - Provide worker welfare and shelter provisions at each work front. - Workers must receive appropriate training, prior to commencement of work (site induction) - Workers must receive ongoing 	EPC Contractor	Construction phase	<p>Occupational Health and Safety Plan</p> <p>Risk assessment</p> <p>Worker Code of Conduct</p> <p>Worker Induction Program</p>

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		training through toolbox talks, oriented by training plans. Including safe driver training. - Hold monthly mock emergency drills (based on scenarios in the ERPP). - Ensure first aid equipment at all work fronts. - Establish an accident and incident reporting procedure.			Training logs/ attendance sheets Audit reports Incident reports
Protect community health and safety	OHTL, S/S and access road construction.	- The Project must follow relevant national legislation recommendations. - Provide defensive driver training, or safe driver training for workers, including what to do in the case of a traffic accident. Employ local security guards where possible. - Undertake a comprehensive stakeholder engagement campaign to inform community members of the possible risks and impacts of the construction of the Project (refer to SEP). - Require all workers to sign a “code of conduct – workers”. - Require all security personnel to sign a “code of conduct – security personnel”.	EPC Contractor (overseen by NEGK Contractor)	Construction phase	Worker Code of Conduct Vetting of security guards Training logs/ attendance sheets Signs in place Meeting minutes/ attendance sheets Number of grievances received

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<ul style="list-style-type: none"> - Provide training to workers and community members (as relevant), on communicable diseases and the risks related to at-risk behaviours. - Implement and disclose details of a community grievance mechanism, which should include GBV requirements. <p>Nominate CLO for operations phase and implement operations SEP.</p>			
GBVH	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Establish GBVh GR Committee (may be third party) - Provide training to workers and community members (as relevant), on communicable diseases and the risks related to at-risk behaviours. - Implement and disclose details of a community grievance mechanism, which should include GBV requirements. 	EPC Contractor (overseen by NEGK Contractor)	Construction phase	<p>Training logs/ attendance sheets</p> <p>Number of GBV grievance received</p>
Labour wellbeing	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - All contractors and their subcontractors to adhere to a “labour management plan” which sets out requirements for contractors, including disciplinary actions. - Require all workers to sign a “code of conduct – workers”. 	EPC Contractor	Construction phase	<p>Worker contracts</p> <p>Training logs/ attendance sheets</p> <p>Grievance mechanism</p>

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<ul style="list-style-type: none"> - Refrain from hiring day labourers. - Disseminate and train workers in the worker grievance mechanism. - Train Project management and workers in GBV, what it is, how to identify it, preventative measures, and how to report cases. 			Number of grievances received Labour statistics
Worker accommodation	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Implement Worker Accommodation Plan - Ensure worker accommodation is as per approved housing (aligned with IFC/EBRD Accommodation guidance" 	EPC Contractor	Construction phase	Accommodation Inspections
Emergency preparedness – general	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Implement EPRP - Inspect EPR equipment - Conduct EPR drills 	EPC Contractor	Construction phase	EPRP Site medical services in place Drill reports EPR equipment register
Emergency preparedness – climate risks/natural hazards	OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Prohibit lifting or elevated work in wind conditions more than 10 km/hr. - Ensure sufficient supply of potable water at the work fronts. - Ensure sufficient shelter/shade during summer months. - Provide extra rest periods for workers when temperatures exceed 	EPC Contractor	Construction phase	Worker emergency shelters

Objective	Project Activity	Action	Responsibility	Timescale	Monitoring / KPI
		<p>35oC.</p> <ul style="list-style-type: none"> - Ensure workers are not penalised for taking extra rest breaks during periods of extreme heat. - Consider risk of landslides during task risk assessments to account for localised risks. - Consider risk of heatwave, landslides and flash flooding (from extreme rain events) in all setting to work risk assessments. - Explain climate risk mitigation in worker induction (e.g. access to shade, water, emergency response) - Include protocol for dealing with climate risks (extreme heat, flooding and landslides) in emergency preparedness and response plan (EPRP). 			
Security	Along OHTL route and at work fronts, Substation and accommodation facility	<ul style="list-style-type: none"> - Implement Security Management Plan. - Conduct Security refresher training on GBVH and use of force at least bi-annually. - Ensure all security personnel sign security code of conduct. 	EPC Contractor/ Security contractor	Construction phase	<p>Security risk assessment</p> <p>Security management plan</p> <p>Security Code of Conduct</p> <p>Training logs/ attendance sheets</p>

5.5 Mitigation and Management Requirements – Operation phase

Table 19: Mitigation and management requirements – operation phase

Objective	Activity	Action	Responsibility	Timescales	Evidence
Implement ESMS in line with GIP.	O&M works – waste	<ul style="list-style-type: none"> - Ensure ESMS includes relevant requirements for E&S and H&S related training, communication, monitoring, reporting, accident incident reporting, auditing, management review, continuous improvement. 	NEGK	Annually	Annual ESMS audit
Operational management planning.	O&M works - OHTL, S/S and access road construction.	<ul style="list-style-type: none"> - Develop Project O-ESMP. - Ensure corporate grievance mechanism is disclosed in project areas. - All maintenance work to have a specific risk assessment addressing waste, climate risks H&S, hazardous material management, emergency preparedness and response, traffic risks). - Implement waste management practices in line with O-ESMP and NEGK ESMS. - Ensure correct PPE at all times. 	NEGK	Annually	Annual reporting Grievance Log Asset Risk assessment (OHTL and substation) Waste logs PPE inspections PPE issue Log
Minimize climate risk to workers performing O&M works.	O&M works	<ul style="list-style-type: none"> - Ensure climate monitoring before any works - Ensure correct PPE for the season 	NEGK	Operations phase – ongoing	Monthly O&M reporting PPE issue Log Climate monitoring report

Objective	Activity	Action	Responsibility	Timescales	Evidence
Ensure rehabilitation of disturbed areas is successful.	O&M works	<ul style="list-style-type: none"> - Conduct annual monitoring as per BMP - Verify success of any sensitive plant rescue relocation conducted during construction, and implement additional sensitive plant restoration, as needed to achieve NNL, if rescue/relocations unsuccessful (refer to BMP). 	NEGK	Operations phase – 5 years or when necessary	Monthly O&M reporting
Biodiversity	O&M works	<ul style="list-style-type: none"> - Perform monthly bird fatality monitoring underneath entire OHTL for a minimum of one year, starting within one month of electrification of OHTL, aligned with GIIP⁸, and following the protocol in the BMP. - Check periodically (at minimum once every 5 years) to ensure BFD still intact and properly positioned on overhead wires, replace any lost or damaged BFD. - Off-site vegetation restoration/rehabilitation to compensate for all permanent habitat loss generated by the Project, noting that some species defined as PBF and therefore subject to the “no net loss” mitigation standard per EBRD PR6 occur throughout the entire 	NEGK	Operations phase – 5 years or when necessary	Monthly O&M reporting

⁸ International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD) and KfW Group (KfW), 2023. Post-construction bird and bat fatality monitoring for onshore wind energy facilities in emerging market countries: Good practice handbook and decision support tool. IFC (Washington DC), EBRD (London) and KfW (Frankfurt).

Objective	Activity	Action	Responsibility	Timescales	Evidence
		Project area (to be defined in the BMP). - Monitoring effectiveness of off-site vegetation restoration/rehabilitation to compensate for permanent habitat loss against NNL criteria.			
Ensure livelihoods are not adversely impacted in the long-term.	O&M works	- Livelihood monitoring as per requirements of the LARF/LRP.	NEGK	Operations phase	Monthly O&M reporting
Water use / wastewater management	O&M works	- General operational management requirements concerning good housekeeping during maintenance works and waste management and spill management provisions must be implemented via ESMS. - All chemicals, fuels, and oils permanently stored at substation site must be in a designated areas in a secure and bunded facility that is capable of capturing 110 percent of the largest tank or 25% percent of the combined tank volumes in areas with above-ground tanks with a total storage volume equal or greater than 1,000 liters and will be made of impervious, chemically resistant material.	NEGK	Operations phase	HSE inspections Annual ESMS audits Incident Log
Soils	O&M works	- Ensure GIIP measures for handling hazardous materials are included in the operational ESMS. - Address spills from hazardous material use in	NEGK	Operations phase	HSE inspections Annual ESMS audits

Objective	Activity	Action	Responsibility	Timescales	Evidence
		the operational EPRP. - Secondary containment for fuel and oil storage at all times during maintenance works - Spill kits, refuelling and oil refilling drip tray in key areas around site where oils/chemicals/fuels is stored or used. - All firewater to be routed to a collection pit for offsite treatment and disposal. - Spills to soils during abnormal operating procedure are addressed in the ESMP			Incident Log Bund inspections
EMF	O&M works	- Ensure workers training includes EMF safety program as part of the NEGK operational ESMS. - Conduct awareness-raising activities with local farmers, herders and community members to reduce exposure when grazing livestock in the RoW.	NEGK	O&M works	HSE training Annual ESMS audits
Transportation	O&M works	- Apply GIP as per construction GIP above to all O&M activity implemented through the NEGK ESMS. - No project traffic through Kok-Moynok 2 community. Use alternative access route. - No project traffic to go through Kok Moynok 2 community "DEU-10" USE ALTERNATIVE ACCESS ROUTE FROM EM11 (main junction). - Enforce speed limits and reduce vehicle movements (maximum of 15 km/h) for project vehicles on unsurfaced roads. - Comply with weight limit restrictions on all	NEGK	O&M works	Annual ESMS audits Grievance Log

Objective	Activity	Action	Responsibility	Timescales	Evidence
		roads. <ul style="list-style-type: none"> - Following the SEP, inform nearby dwellings and road users on the timing and duration of works along the OHTL route. - Ensure escorts, flag persons and other safety measures are employed where necessary (in particular on single track roads). - Coordinate with all necessary authorities (especially if there are any abnormal loads). - Include measures to respond to traffic incidents in the EPRP. - Evidence that all drivers can demonstrate required competencies for the vehicle they are driving and have signed a driver's code of conduct. 			
Labour	O&M works	<ul style="list-style-type: none"> - Demonstrate functioning HR policy aligned with ILO core conventions as well as Kyrgyz law in contractor contracts. - Implement Worker grievance mechanism 	NEGK	O&M works	Corporate HR policy aligned with EBRD PR2
Health and Safety	O&M works	<ul style="list-style-type: none"> - Establish a comprehensive operational HSMS and OHS Plan (OHTL) 	NEGK	O&M work	HSMS Annual HSMS Audit
Community welfare	O&M works	<ul style="list-style-type: none"> - Nominate CLO for operations phase and implement operations SEP. - Conduct Stakeholder Engagement as per requirements of the SEP - Maintain community (PAPs) grievance mechanism 	NEGK	O&M work	CLO SE Log Community Grievance Log

6 Monitoring and Reporting

6.1 Meetings

The Project will undertake the following meetings to be attended by representative of the Project Company and the EPC Contactor as defined in the EPC ESMS :

- Mobilisation E&S meetings
- Weekly E&S meetings (on site)
- Monthly E&S meetings

During operation, EHSS matters will be covered in the schedule operational monthly meetings and in any special meetings in advance and during maintenance periods. This will be defined in the operational ESMS.

6.2 Inspections and audits

The EPC Contractor must, as part of the EPC ESMS, develop an Environmental Compliance Program including a schedule for E&S inspection and monitoring to ensure compliance with national and international best practice requirements as set out in the E&S plans as appropriate. The approach to be applied to the monitoring of the Project performance, is as follows:

- Daily site walkover – EPC Contactor
- Spot checks and walkovers – PIU
- Weekly site inspections – EPC Contractor
- Quarterly E&S audit – PIU (audit of one of the ESMS plans/ procedures to ensure all plans are audited once every two months.
- Weekly EPC audits of subcontractor – EPC Contractor
- Subcontractor E&S Completion Audit – EPC Contractor
- Construction Labour audit (EPC and Owner separately)
- Accommodation audits (every three months as determined by risk assessment)

6.3 Reporting

The following reporting activities will be performed:

- Daily reporting (incidents, non-compliances) - EPC Contractor
- E&S monthly reports - EPC contractor
- E&S completion report (at end of the construction phase) – EPC Contactor
- Bi-annual E&S Monitoring report (ESMR) (submitted to lenders) – Project Company (construction)
- E&S monthly report - Project Company (construction)

- Annual ESMR – Project Company (operation)
- E&S incident and deviation management report

The EPC Contractor and Project Company will establish and keep records of the activities and related documentation in order to prove its conformity to the E&S requirements of the plans. The Company will centralize the documentation of those plans that implementation is led by the Company.

6.4 Monitoring

The following monitoring is proposed for the Project. A key aspect of monitoring is defining relevant indicators. These are quantitative or qualitative measures of progress against set goals in the EPC ESMS and are summarised in Table 20 and Table 21.

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Table 20: Monitoring and reporting obligations - construction

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
OHS, environmental and social statistics	<ul style="list-style-type: none"> Numbers of fatalities, accidents and injuries. Incident reporting and follow up actions. Number of inspections and audits Environment: waste generation, water use, fuel use, hazardous materials on site (see also below). Training (induction, TBTs) Inspections and Audits Number of emergency drills 	Monthly	Documentation and visual observations at site H&S audits and inspection records Environmental audits and inspection records Drill reports	Site	Monthly progress report including monthly EHS statistics	EPC Contractor
Climate	<ul style="list-style-type: none"> Extreme Temperature Extreme rainfall Extreme dust events 	Continuously	Establish an early warning system for wind and extreme heat events through continuous weather monitoring	Site	Monthly progress report	EPC Contractor

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
Dust emission (site and public roads)	<ul style="list-style-type: none"> Dust episodes, soiling of vegetation, dust resuspension on roads or surfaces, dust clouds at NSR (F6, F15, S3, C9, C10), NABU Centre, fishpond, nests 01,02,05,06) 	Daily visual monitoring (dust)	Visual inspections No. of community grievances Record incidents that cause dust, either on- or off-site, and the action taken to resolve the situation.	Active work areas	Grievances reported in monthly progress report Daily inspection report.	EPC Contractor
Noise	<ul style="list-style-type: none"> Noise level measurements 	Only if a grievance arises.	Spot check monitoring performed during construction at NABU Centre/F6, S3, F15, nests 01,02, 05, 06) during active work periods within 200m (by accredited and competent firms). <ul style="list-style-type: none"> Monitor community grievance 	Active work areas	Grievances reported in monthly progress report 6 monthly noise report	EPC Contractor

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
			log for noise related complaints. Conduct noise monitoring in the event of a noise complaint or evidence of exceedance of community noise guidelines values			
Water use	<ul style="list-style-type: none"> Potable, construction water 	Continuously	Water volumes / number of tankers to site / potable water	Site and all work areas	Monthly progress report	EPC Contractor
Waste water	<ul style="list-style-type: none"> Run-off from construction areas 	Daily during rainy season	Visual observations at site	All ephemeral streams	Monthly progress report (incidences only)	EPC Contractor
Waste	<ul style="list-style-type: none"> General construction waste, hazardous waste, excavation/inert waste/medical wastes/oils/electronic waste 	Continuously	Documentation and visual observations at site	Project working areas during construction work	Monthly & Quarterly Monitoring Reports	EPC Contractor

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
Hazardous materials (liquids/chemicals)	<ul style="list-style-type: none"> General hazardous material use 	Continuously	<p>Number of reported spills (zero or downward trend to be maintained)</p> <p>Number of reported incidents of concrete washout in undesignated area</p> <p>No unauthorised release of contaminated or potentially contaminated water to ephemeral channels or ground</p>	Project working areas during construction work	Monthly & Quarterly Monitoring Reports	EPC Contractor
Storage and transportation of fuel, oil and hazardous materials	<ul style="list-style-type: none"> Visual observations at all hazardous storage areas 	Weekly Traffic	Documentation and visual observations at site	Project working areas during construction work	Monthly progress report (number of inspections performed)	EPC Contractor
Traffic emissions	<ul style="list-style-type: none"> Vehicle inspections to ensure maintained and in good condition. 	As deployed to site	Documentation and inspection check sheets	Project working areas during construction work	Monthly progress report (number of inspections performed)	EPC Contractor

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
Traffic safety	<ul style="list-style-type: none"> Number of complaints about traffic problems, number of traffic training provided to worker Number of traffic campaigns undertaken Number of traffic incidents in accordance with the incident procedure. 	Project working areas during construction work / EM11	Incident Log / Grievance log / Training Log	EM11 and Site	Monthly progress report (incidences only) – traffic incidents and stakeholder grievances	EPC Contractor
Rehabilitation of temporary used area	<ul style="list-style-type: none"> Hectares of habitat lost, and extent and quality gained through passive ecological restoration on site 	Annually for first five years	Visual observations - Five-year aftercare and monitoring program to ensure soil and associated vegetation cover is returned to its original state.	Site	Annual operations monitoring report	Project Company
Labour and worker grievance statistics	<ul style="list-style-type: none"> Number of workers, gender of workers and if they are local or not and subcontractor statistics. 	Monthly	Documentation and visual observations at site	Site	Monthly progress report	EPC Contractor

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
	<ul style="list-style-type: none"> Perform labour auditing during construction (monthly) and operations (annually) to identify any gaps in payment, provision of personal protective equipment and/or any other concerns regarding human resources. Include a focus on vulnerable employees 					
Labour accommodation	<ul style="list-style-type: none"> Compliance of accommodation against the labour accommodation plan 	Monthly	Documentation and visual observations at accommodation locations	Labour accommodation	Monthly progress report or accommodation audit report	EPC Contractor
GBVH	<ul style="list-style-type: none"> Project GBVH incidents recorded in Grievance log. 	Monthly	Incident Record Random interviews	Site and accommodation	Monthly construction monitoring report or labour audit report	EPC Contractor
Recruitment private agencies)	<ul style="list-style-type: none"> Number of private employment agencies (if used) for recruitment 	Monthly	Documentation and random worker interviews at site	Site	Monthly construction monitoring report	EPC Contractor

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
	<ul style="list-style-type: none"> Grievance related to worker fees 		Training records		or labour audit report	
Labour and working conditions	<ul style="list-style-type: none"> Review of working conditions, paysheets and payslips, leave allocation, and interview with workers to verify findings 	Monthly	Documentation and random worker interviews at site Training records	Site	Monthly construction monitoring report or labour audit report	EPC Contractor
Security incidents	<ul style="list-style-type: none"> Security incidence. Incident reporting and follow up actions. 	Monthly	Documentation and random security guard interviews at site	Site	Monthly construction monitoring report and quarterly report to Lenders	EPC Contractor
Stakeholder engagement	<ul style="list-style-type: none"> Stakeholder engagement completed (stakeholder log) Number of community grievances received. Close out within required timeframe 	Monthly	Stakeholder Engagement Log Grievance Log Close out reports	Site/local communities	Monthly construction monitoring report	Project Company
Grievances	Number of community grievances received (grievance log). Number of GBVH related	Monthly	Grievance log	Site/local communities	Monthly construction monitoring report	Project Company

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
	grievances. Responses and follow up actions.					
Chance finds	Number of chance finds, responses and follow up actions. (Should items of cultural heritage be found on or near the Project site, these should be regularly monitored to ensure they are properly signposted, their buffer zones are maintained and that no harm has come to the items)	Monthly	Chance finds reports	Site	Monthly construction monitoring report	EPC Contractor
Land acquisition and livelihood restoration	As per LARF	As per LRP	As per LRP	As per LRP	As per LRP	Owner

Table 21: Monitoring and reporting obligations - operation

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
OHS	Numbers of fatalities, accidents and injuries. Incident reporting and follow up actions.	Annually	Documentation and visual observations at site H&S audits	OHTL and substation	Annual operations monitoring report	Project Company

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
Climate	Extreme Temperature Extreme rainfall	Continuously	Continuous weather monitoring system	OHTL and substation	Annual operations monitoring report	Project Company
Water use	Potable, O&M water (cleaning panels)	Annually	Water volumes / number of tankers to site & potable water (bottles)	OHTL and substation	Annual operations monitoring report	Project Company
Labour statistics	Number of workers, gender of workers and if they are local or not.	Annually	Labor statistics	OHTL and substation	Annual operations monitoring report	Project Company
Labour and working conditions	Review of working conditions, paysheets and payslips, leave allocation, and interview with workers to verify findings.	Annually	Audit reports	OHTL and substation	Annual operations monitoring report	Project Company
Security incidents	Security incidents	Annually	Security logs	OHTL and substation	Annual operations monitoring report	Project Company
Stakeholder engagement	Stakeholder engagement completed	Annually	Stakeholder engagement logs	Site/local communities	Annual operations monitoring report	Project Company

Monitoring	Parameters	Frequency & Duration	Method	Location	Reporting obligations	Responsibility
Grievances	Number of worker/community grievances received.	Annually	Grievance log	Site/local communities	Annual operations monitoring report	Project Company
Livelihood restoration	Livelihood restoration for impacted households	As per LARF /LRP	Interviews with PAPs	Project Affected Communities.	Annual operations monitoring report	Project Company

6.5 Non-conformity and Corrective actions

A non-conformance is when an action by the EPC Contractor doesn't meet the requirements of the Project as set out in this ESMP and the supporting plans.

Non-compliance is when an action by the EPC Contractor also represents a breach of legal requirements under national law.

During construction, non-conformance observations that can be closed immediately or within 24 hours will be tracked for closure in an observation tracker.

Any non-conformance that requires more substantive inputs to correct or is a legal noncompliance will be followed up in a "non-compliance report" issued to the EPC Contractor for rectification. The non-compliance report will include an outline of the non-compliance issue (or issues), action (s) for rectification, timelines for implementation and responsibility for implementation.

Non-compliances will be tracked in a project Corrective Action Tracker and reviewed weekly between the PIU and the EPC Contractor (and subcontractor) to ensure timely closure.

The EPC contractor must provide evidence for closure of the action and retain this evidence for future auditing purposes

7 Document Control

A complete and up-to-date file of all relevant sources of information will be maintained by the designated E&S manager for all phases of the project and by the Project Company and EPC Contractor.

This file will be readily accessible and include, as a minimum, copies of the following documents:

- Current environmental permits and consents.
- All relevant national and international regulations, international guidelines and codes of practice.
- Current calibration certificates for all the equipment that requires calibration by an external organization.
- The latest version of the CESMP and OESMP and supporting Management Plans.
- Records for environmental monitoring (inspection forms) and audits.
- Record of the construction programme.
- Manufacturers' operating manuals for all the environmental monitoring equipment.
- Equipment maintenance and repair records.
- Correspondences concerning environmental matters/permits including internal and external.
- Minutes of relevant meetings.
- Training records (e.g., attendance records for inductions and environmental awareness training).
- Current workforce statistics (including gender and local/nonlocal) and emergency contact

details for workers.

8 Stakeholder Engagement

All communication, as well as the stakeholders identified, is documented in the NEGK Project Stakeholder Engagement Plan (SEP) and is subject to public disclosure. The Project is required to:

- Inform and consult with local communities and other relevant stakeholders before the development of the facility on potential impacts, management measures and potential opportunities.
- Publicize the Project grievance mechanism with local communities.
- Maintain meaningful dialogue through consultations and information disclosure with local communities and other relevant stakeholders.
- Develop a communication records procedure that will log key information from and to stakeholders.

The SEP has been prepared during the ESIA phase (Volume V) to address these requirements and presents a detailed plan for stakeholder engagement obligation for the pre-construction, construction, operation and decommissioning phases. The SEP is a live document and will be periodically updated at key milestones in the Project development by NEGK.

During construction responsibility for implementation of the requirements of the SEP will be NEGK supported by the EPC Contractor (as set out in their Communication procedure).

NEGK and the EPC Contractor will appoint a dedicated Community Liaison Officer to manage the stakeholder relations as defined in the Project SEP and any new obligations as identified following finalization of the ESIA.

Internal communication between the Project Company, EPC Contractor and workers must be defined in a Project Internal Communication Plan part of the EPC ESMS (as described above).

9 Grievance Mechanism

A community grievance mechanism (GM) has been defined and is described in the SEP (Volume V). A summary of the GM is provided below. NEGK supported by PIU and EPC will manage the grievance mechanism.

Any concerns, issues, or questions ("grievances") stakeholders may have can be raised to the Project via the GM. The GM sets out the project commitments to acknowledge, investigate and respond to all concerns. Contact details for each method are included in the introduction and the Table 23 at the end of this section.

Grievances can be raised through the following methods:

- Directly to Project staff and security guards during meetings or Project site visits.
- Via telephone calls.

- In written form (text messages, via e-mail, mobile applications, letters, written requests).
- In boxes located at the community offices and at the Project gate (once construction starts).
- Via NEGK website.

The GM keeps strict data confidentiality, including all applicants' personal information. All grievances can be submitted anonymously. In cases where the complainant is unsatisfied with the proposed solution/response to the grievance, they have the right to take other legal action to resolve the grievance.

Step 1: Upon receiving a grievance by any means of communication, the Grievance Manager/CLO will enter the grievance into the grievance log to ensure that all raised concerns/inquiries are investigated and addressed.

Step 2: After receipt and registration of a grievance, a complainant will receive written notification that includes a proposed timeline for investigation depending on the request and the preliminary time of receipt of a response. A grievance form and log will keep a tracked record of each grievance received.

Step 3: Allocated members of the ESIA consultant team will be responsible for receiving and monitoring grievances during the ESIA phase of the Project (this responsibility will be transitioned to NEGK CLO or EPC CLO following the ESIA phase). The grievance form is prepared based on the identified stakeholders' location, language preferences, and communication opportunities. Responses will be provided in a language suitable for the complainant, i.e., Kyrgyz.

Step 4: The resolution of grievances will be formally communicated to the complainant in written form. If a complainant cannot receive a written response, the complainant will be contacted via phone and informed of the results of their grievance. Table 22 below provides the timeframes for response to grievances. An appeal may be submitted if the complainant is unhappy with the response. Furthermore, submitting a grievance through the GM will not preclude a complainant from also seeking recourse through the national legal system, and the complainant can take this course of action should they not be satisfied with the response they receive to their grievance if they wish. The approaches taken to resolve grievances will depend on the nature, frequency of occurrence and the number of grievances.

Table 22: Grievance processing timeline

Stage	Timeline
Receipt and registration of grievance	Day 0
Providing acknowledgement of grievance receipt to the complainant	Maximum three working days after submission of grievance.
Assessment/investigation of the received grievance	Maximum two weeks after provision of acknowledgement of the grievance.
Providing the complainant with a response	Maximum three working days after assessment has been completed.
Reassessment of grievance in case the complainant is not satisfied with the previously provided response	Maximum two weeks after notification of dissatisfaction by the complainant.

Where complex grievances or other factors are extending the investigation time, the complainant will be informed of this delay, advised of an updated expected timeline for a response, and provided regular updates. If the grievance cannot be resolved at the Project level, it might be referred to the Grievance Committee⁹.

⁹ The Grievance Committee will be convened by the NEGK CLO r a will contain persons relevant to the topic of the grievance, likely to include the Project Site Manager, the local leaders, male and female representatives from the local community and local authorities (relevant to the grievance raised).

Table 23: Contact details for raising a grievance

Company	Contact Details
Juru	Email: d.avdulov@juru.org Phone: +998 (90) 015-71-92 Email: g.nematullaeva@juru.org Phone: +998 (97) 445-95-04
Juru (Presented by Evidence CA)	Email: Bermet.alieva@gmail.com Phone: +996 551 99 99 84
NEGK PIU	Email: 1piunegk@gmail.com Phone: +996 312 67 03 19

10 Management Review

This ESMP (and supporting plans) will be reviewed on at least an annual basis by the Project Company or when there is a significant change in the scope of works. The outcome of this management review will be documented and shared with the EPC Contractor.