

Semi-Annual Environmental Monitoring Report



2nd Semi-Annual Report
Reporting period: July - December
2023
Number of project: 53271
Data: January 2024



Republic of Uzbekistan: Railway Electrification Project (Bukhara-Urgench-Khiva), passing along the corridor within the framework of the 2nd Central Asian Regional Economic Cooperation

Loan №4170-UZB
(Financed by Asian Development Bank)

Prepared by: Consulting company “PE DB Engineering & Consulting GmbH” (hereinafter referred to as – PE DB E&C) and PIU-ET JSC « O‘zbekiston Temir Yo‘llari » (UTY) for JSC « O‘zbekiston Temir Yo‘llari » and Asian Development Bank

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CURRENCY EQUIVALENTS
(As of 31 December 2022 y.)¹

¹ Currency exchange of the Central Bank of Uzbekistan. <https://cbu.uz/uz/архив-курсов-валют>

Currency unit	–	Uzbekistan Sum (UZS)
UZS 1.00	"="	0,000092 US dollars
\$1.00	"="	UZS 11582.14

ABBREVIATIONS

ADB	-	Asian Development Bank
CAP	-	Corrective Action Plan
CM	-	Cabinet of Ministers
PMC		Project Management Consultant
EHS	-	Environmental, Health and Safety Guidelines
EMP	-	Environmental Management Plan
EMR	-	Environmental Monitoring Report
GRM	-	Grievance Redress Mechanism
HH	-	Household
PEA	-	Preliminary Environment Assessment
IEE	-	Initial Environmental Expertise
IFC	-	International Finance Corporation
PIU-ET		Project Implementation Unit for Electrification and Renewal of Rolling Stock
TS	-	Technical support
UTY	-	O'zbekiston Temir Yo'llari
Minecology	-	Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan
EIA	-	National abbreviation for Environmental Impact Assessment Process
ESI	-	National abbreviation for Environmental Impact Statement
GlavGosExpertisa	-	State department under the Ministry of Ecology, responsible for conducting state environmental impact assessments
TSS	-	Traction substations
SCADA	-	Supervisory Control and Data Acquisition System
MSW	-	Municipal solid waste
MPCs	-	Maximum permissible concentrations

NOTE

In this report, "\$" refers to U.S. dollars unless otherwise noted.

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1 INTRODUCTION

1.1 Preamble

1. This report is the 2nd Semi-Annual Environmental Monitoring Report (SEM) for L4170-UZB Central Asia Regional Economic Cooperation Corridor 2 - Railway Electrification Project (Bukhara-Urgench-Khiva) (CAREC Corridor 2). This report has been prepared and covers the period from July to January 2024.

1.2 General information

2. In accordance with ADB Safeguard Policy Statement (2009, SPS), the project belongs to category B, as a project with site-specific impacts, few of which are irreversible, and where in most cases mitigation measures can be designed.
3. In accordance with national environmental categorization requirements, the project is classified as a Category 2 – project with moderate impacts on the environment. The identification of the project category was based on the level of impacts from various activities planned under the project: electrification of the existing railway, construction of external power supplies, and construction of the TSSs. Of these project activities, which are the subject of the National Environmental Assessment, the highest impacts are anticipated from the construction of the high-voltage electric lines. Therefore, the category of the project was defined as Category 2.

For reference¹: National environmental impact assessment and state environmental expertise is carried out in accordance with Appendix No. 1 (List of activities for which state environmental expertise is carried out) to RCM No. 541 of the Republic of Uzbekistan dated September 7, 2020.

4. The National Design Institute "Boshtransloikha" conducted an environmental impact assessment (EIA) - a Draft Statement of Environmental Impact (ESI) was prepared for the facility: "Construction of external power supply facilities of the project" Electrification of the Bukhara-Urgench-Khiva railway line "VL 110 and 220 kV" and submitted for state environmental expertise to the State Committee for Ecology and Environmental Protection of Uzbekistan² in July 2021. Based on the results of consideration of the above Draft EIS, a positive conclusion of the State Ecological Expertise No. 04-01 / 10-08-1478 of 08.30.2021 was received. valid for 3 years with the possibility of extension for another two years if construction work has not started or has not been carried out in the planned volume.

For reference²: Since January 2023, the State Committee for Ecology and Environmental Protection of Uzbekistan has been transformed into the Ministry, currently its name is the Ministry of Ecology and Environmental Protection and Climate Change of the Republic of Uzbekistan.

5. According to the EIA materials and the conclusion of the state environmental expert review, the planned set of works for the construction of the power transmission line, which will be built in the project area, consists of several construction stages: preparatory work (layout of the centers of supports and the axis of the route of high-voltage lines (VL), reconstruction of engineering structures on the route of VL, delivery of building materials along the route);

construction work (pitting, excavation, foundation and grounding devices, assembly, installation, alignment and fixing of supports);
installation work (rolling out and connecting wires and cables, lifting them onto supports, stretching and fixing them on supports);
commissioning and putting into operation of the overhead line.

6. All construction materials for the construction of the contact network and the TSS will be delivered by the existing railway. For the modernization of the depot "Bukhara" - "Urgench", the railway and existing roads will be used as access roads, the construction of new roads is not required.
7. At the stage of preparation for construction, it is important to obtain the necessary permits and approvals from authorized government agencies. At the construction stage, the main impact is associated with the generation of construction and other waste, air pollution, increased noise levels, vibration, construction camp area, soil disturbance, health and safety of the population, etc. During the operation stage, noise levels generated by the railway and affecting buildings and premises. But all these impacts can be mitigated by fulfilling the requirements of the Environmental Management Plan (EMP).

2 DESCRIPTIONS OF THE PROJECT AND EXISTING SITUATION

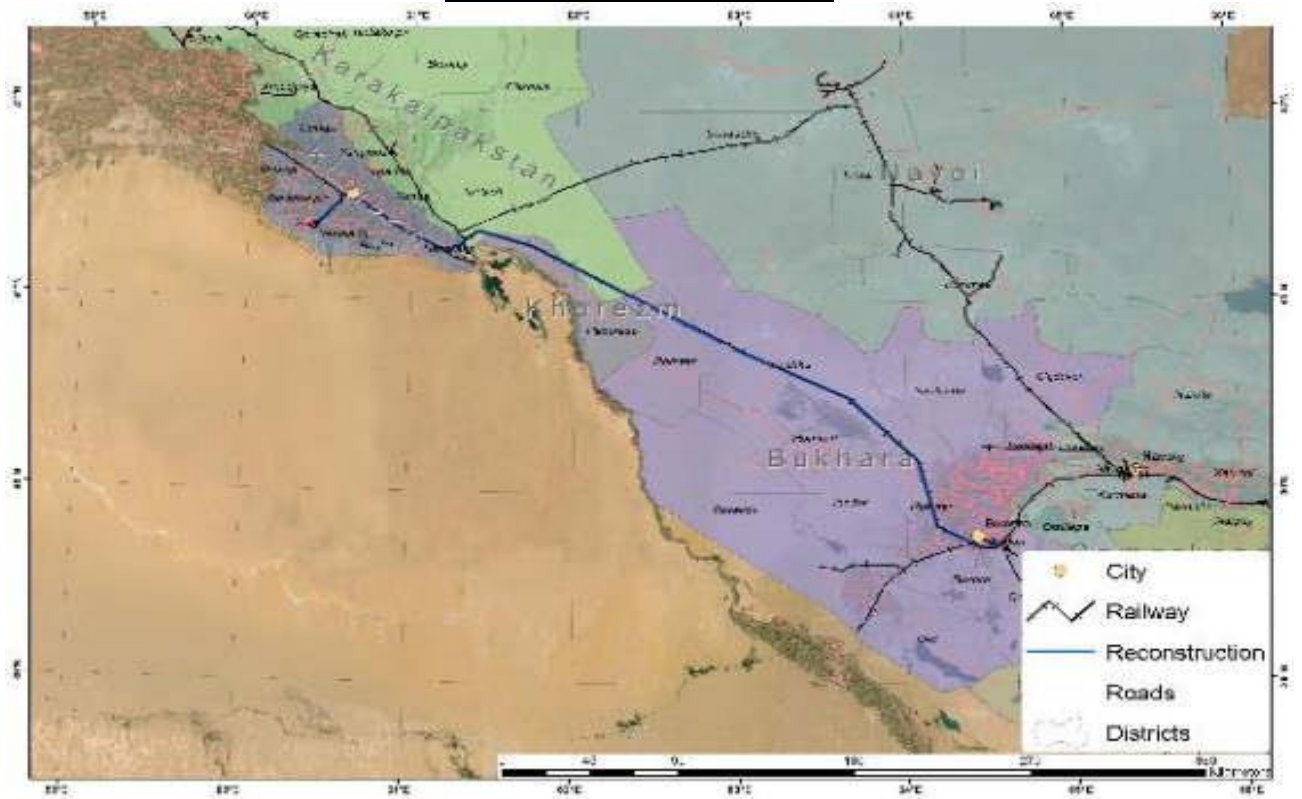
2.1 Description of project

The project will electrify and modernize the 465 km Bukhara-Urgench-Khiva railway line, which was put into operation in December 2017 and is currently used for low-speed diesel-powered trains (Picture 1). The main parameters of the railway line (Bukhara - Urgench - Khiva) are presented in Table 1.

7. The line has an estimated speed of 250 km/h and connects to the existing electrified high-speed railway line Tashkent-Samarkand-Bukhara. Basically, the route passes through the desert regions of Bukhara and Khorezm regions and the Republic of Karakalpakstan, and about 30% passes through agricultural land and settlements. Between the cities of Bukhara and Khiva there are ten railway stations, most of which have already been built or reconstructed. The route also has five junctions. Signalling, communications and SCADA systems will also be installed at all stations and junctions
8. The project will radically change the economic geography of the Khorezm region, reduce the time distance to other urbanized regions of Uzbekistan. High-speed trains will reduce the travel time between Bukhara and Khiva to 3.0 hours compared to the current 8.0 hours. The total travel time from Tashkent to Khiva will be approximately 7.0 hours. The annual passenger traffic on the Bukhara-Khiva line is expected to increase from the current 149,500 passengers per year in 2021 to 1,410,000 passengers in 2026.



Picture 1. Project location and route



Picture 2. Scheme of the Project railway section.

9. **Result 1:** modernization of the railway infrastructure along and adjacent to the Bukhara-Urgench-Khiva line. This includes (i) construction of 8 TSS, (ii)

construction of 8 sectioning posts, (iii) supply and installation of contact network systems, (iv) supply and installation of signaling, communication, and supervisory control and data acquisition (SCADA) systems, (v) construction of external power supply, (vi) purchase of equipment and machinery for maintenance, and (vii) purchase of specialized wires for contact network, (viii) 44 level crossings with road blocking devices (RBD) (Picture 2). In addition, minor upgrades will be made to the electrification infrastructure on the adjacent lines from Bukhara to Tashkent and from Samarkand to the border with Afghanistan. These upgrades, while minor in scope and cost, will allow UTY's electrified network to continue to operate reliably and prepare the network for the expected growth in traffic. The infrastructure incorporates the latest technological advances to ensure efficiency and reliability.

Result 2: Development of the tourist corridor Bukhara-Urgench-Khiva. The railway line will connect the main tourist destinations of Uzbekistan through the services of a high-speed train (up to 250 km / h), which will allow traveling between Bukhara and Khiva in 2-2.5 hours, compared to a car trip, which will take about 6 hours). The project will provide travelers with the opportunity to visit the main tourist attractions of Uzbekistan comfortably in a short time, avoiding the need to make short flights. Passenger traffic will open the country, expanding the corridor of economic development in western Uzbekistan. To support the development of such an economic corridor, the project provides support for the following activities:

- Railway marketing coupled with Uzbekistan's broader tourist attraction efforts.
- Support for municipalities along the railway corridor with the development of transit-oriented developments around stations.
- Support to municipalities along the railway corridor with a sustainable tourism development plan; special attention will be paid to promoting the sustainability of new tourist sites and ecotourism,
- Implementation of an (online) ticketing system to make it easier for tourists and internal passengers to book tickets. A unified "Uzbekistan Rail Pass" could be introduced that would allow visitors to take advantage of unlimited train travel for a fixed fee to visit Tashkent, Samarkand, Bukhara and Khiva.
- Support for increased participation of women in new tourism-related economic activities.

10. TSS will be connected to existing electrical substations (SS) through newly constructed high voltage lines (VL) 110 and 220 kV. The total length of the overhead line under construction is about 482.9 km, which will be confirmed at the detailed design stage.

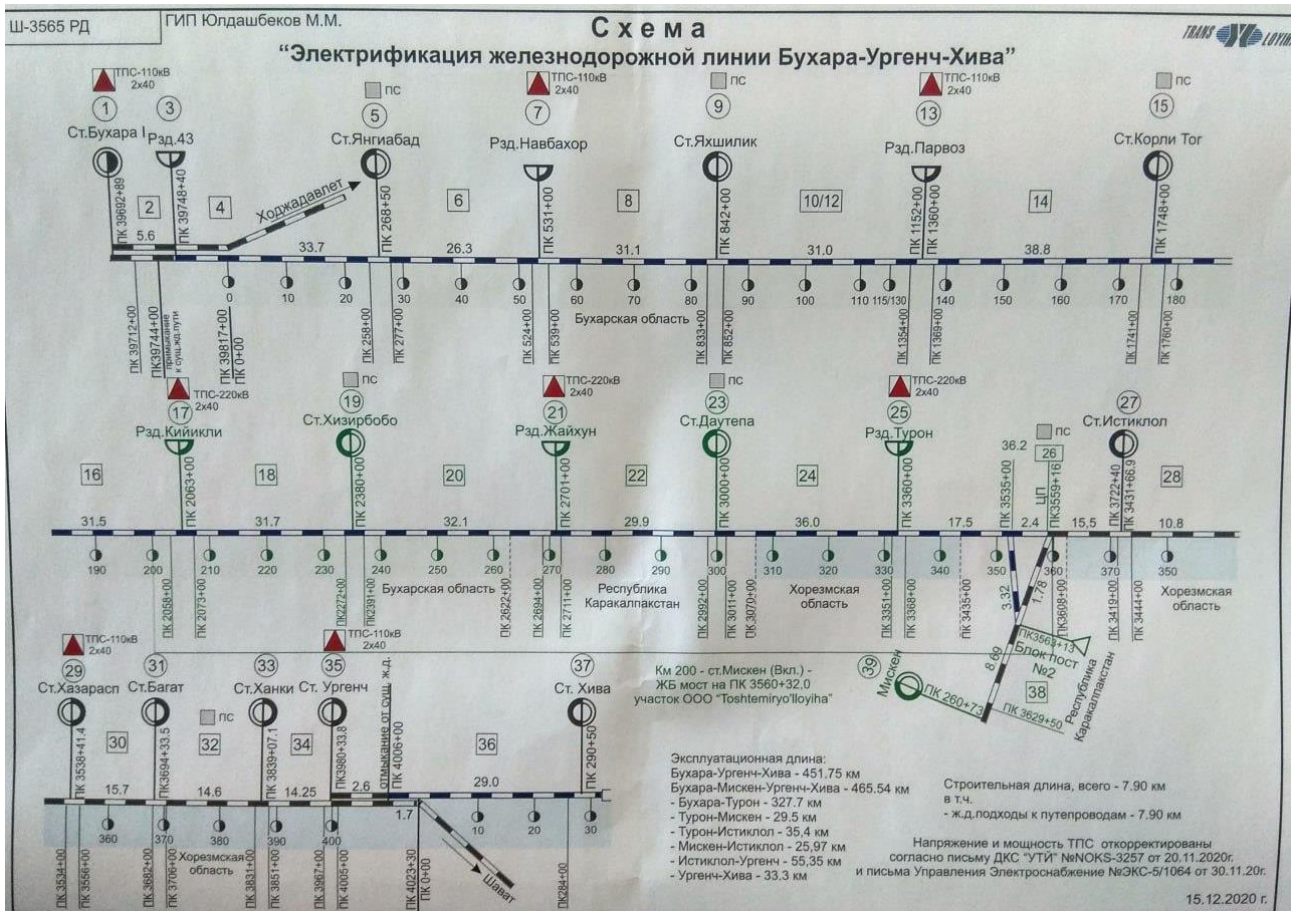
11. Planned to build the following TSS:

1. TSS 110 / 27,5 / 10kV at st. Bukhara. Coordinates - 39 ° 42.385'NC 64 °31.528'EB

2. TSS 110 / 27,5 / kV at the Navbakhor (Mashak) Junction Coordinates - 40 ° 5.148'NC 64 ° 5.719'EB.
3. TSS 110 / 27,5 / 10kV at the Parvoz Junction Coordinates - 40 ° 30.447'NC 63 ° 37.906'EB
4. TSS 110 / 27,5 / 10kV at Kiyikli Junction (Alabuga) Coordinates - 40 ° 47.748'NC 62 ° 53.260'EB
5. TSS 220 / 27,5 / 10kV at the Dzhaihun Junction (Dzhaksay) Coordinates - 41 ° 4.631'NC 62 ° 13.940'EB
6. TSS 220 / 27,5 / 10kV at the Turon (Akchuka) Junction Coordinates - 41 ° 20.317'NC 61 ° 31.756'EB
7. TSS 110 / 27,5 / 10kV at the Khazarasp station Coordinates - N41 ° 33035267 ° E61.03372867 (the coordinates have been changed due to the fact that the design solutions have changed, see Chapter 2.4 “Description of any changes in the project design”)
8. TSS 110 / 27,5 / 10kV at st. Urgench Coordinates - 41 ° 31.268'NC 60 ° 40.376'EB

Name of indicator	Unit	Section Bukhara-Urgench-Miskin-Khiva				Total
		Station Bukhara-km 355+916	km355+916- km372+240/km341+167 (station Istiklol)	Station Istiklol-station Urgench	Station Urgench-station Khiva	
Operational length	km	347.60	15.50	55.35	33.3	451.75
Construction length	km	11,41			1,6	13,01
Total length	km					465
Type of traction power		Electric locomotives				
Width of subgrade (earth embankment) at the open line sections	m	7.6	7.6	7.6	7.6	
Railroad intersection with local roads						
- guarded level crossings with the crossing obstruction devices (COD) existing)	unit	14	2	1	11	41
- reconstruction of non-guarded level crossings into the guarded level crossings with installation of COD	unit	-	3	10	-	13

Table 1. Railway line parameters



Picture 3. Layout of the main facilities (8 TSS) project of electrification of the railway line Bukhara-Urgench-Khiva

12. Improving the connections between these main tourist destinations (the cities of Bukhara, Urgench, Khiva) will greatly enhance the attractiveness of Uzbekistan as a unique tourist destination. The project will stimulate the growth of this important economic corridor by supporting sustainable tourism and transit-oriented development, thereby supporting the recovery of the tourism industry from the effects of the coronavirus (COVID-19) pandemic and increasing women's opportunities to actively participate in rail transport and tourism. Thus, the project supports both the overall strategy of the government to diversify the economy and the development of the tourism sector in Khorezm (Figures 4 and 5), and also strategy of achieving gender equality in the Republic of Uzbekistan until 2030 (Pic. 4 и 5).



Picture 4. Improving tourism potential of Khorezm



Picture 5. Role of women in railway transport

13. The project is being implemented on the basis of the following resolutions:

- Decree of the President of the Republic of Uzbekistan dated March 6, 2015 No. PP-2313 "On the Program for the Development and Modernization of Engineering, Communications and Road Transport Infrastructure for 2015-2019";
- Decree of the President of the Republic of Uzbekistan No. PP-72 of December 30, 2021. "On approval of the Investment Program of the Republic of Uzbekistan for 2022-

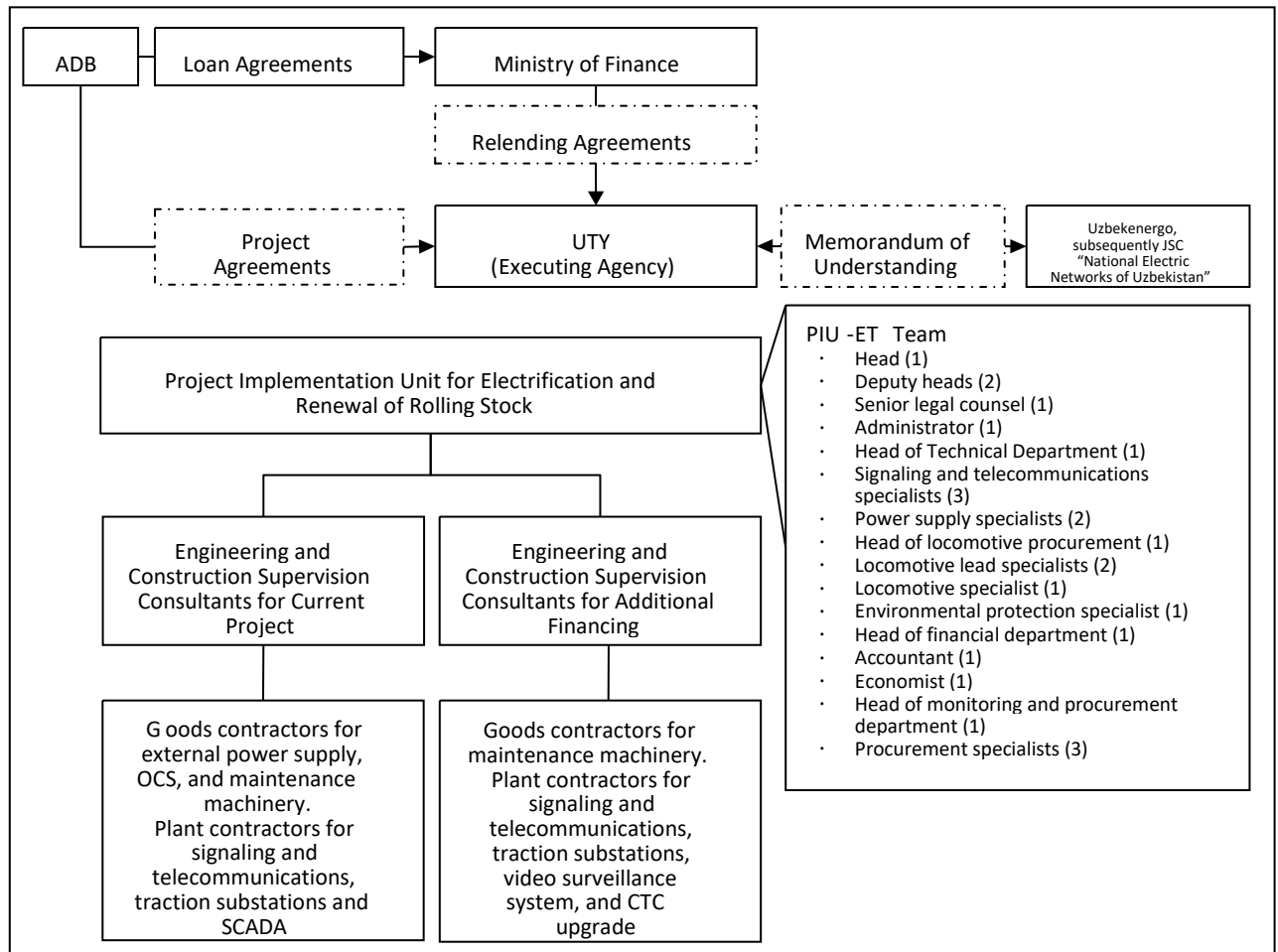
2026 and the introduction of new approaches and mechanisms for managing investment projects";

- Decree of the President of the Republic of Uzbekistan No. PP-2827 dated March 13, 2017 "On measures for the construction of the Bukhara-Miskin railway line";
- Decree of the President of the Republic of Uzbekistan No. 5 dated 16.01.2023. "On measures to implement the Bukhara-Urgench-Khiva and Miskin-Nukus Railway Electrification Project together with ADB and AIIB banks."

14. Institutional scheme. UTY, the executing agency (EA), has adequate staff, a track record of successful implementation of similar projects, and operation and maintenance of both electrified and non-electrified lines. The implementation mechanisms are based on the successful experience of implementing ADB railway projects in the country. On May 1, 2011, the Department for the Implementation of Electrification Projects (PIU-E) was established at UTY, which began to function in full in accordance with UTY's internal order No. 163 dated March 16, 2012. On December 6, 2018, based on the order of the First Deputy Chairman of the Board of UTY No. 2188-N, PIU-E merged with another PIU that had previously implemented projects for the purchase of rolling stock. PIU-E was renamed into Project Implementation Unit for Electrification and Renewal of Rolling Stock (PIU-ET).
15. Project Implementation Unit for Electrification and Renewal of Rolling Stock (ERP-ET), established by UTY, has experience with ADB procedures and policies and will be responsible for project implementation. UTY's technical departments will also assist the PIU during project implementation. UTY will work in collaboration with National Electric Networks of Uzbekistan JSC (NENUz) and Regional Electric Networks (REN), which are energy companies responsible for supplying electricity from generating sources to consumers.
16. Generating sources to consumers. The PIU-ET consists of 22 employees, including the head, two deputy heads, senior legal adviser, administrator, head of the technical department, three signalling and telecommunications specialists, three electrical supply specialists, one locomotive specialist, one environmental protection specialist, head of the finance department, one accountant, one economist, one head of the monitoring and procurement department and two procurement specialists. PIU-ET employees have experience in implementing projects financed by international financial institutions, including those financed by ADB. International and national experts are involved as consultants on engineering and construction supervision. The terms of the contract include design and construction work, so the role of engineering and construction supervision consultants is to manage contracts with PIU-ET and provide hands-on training in procurement, project management and supervision, operation and maintenance, and reporting.

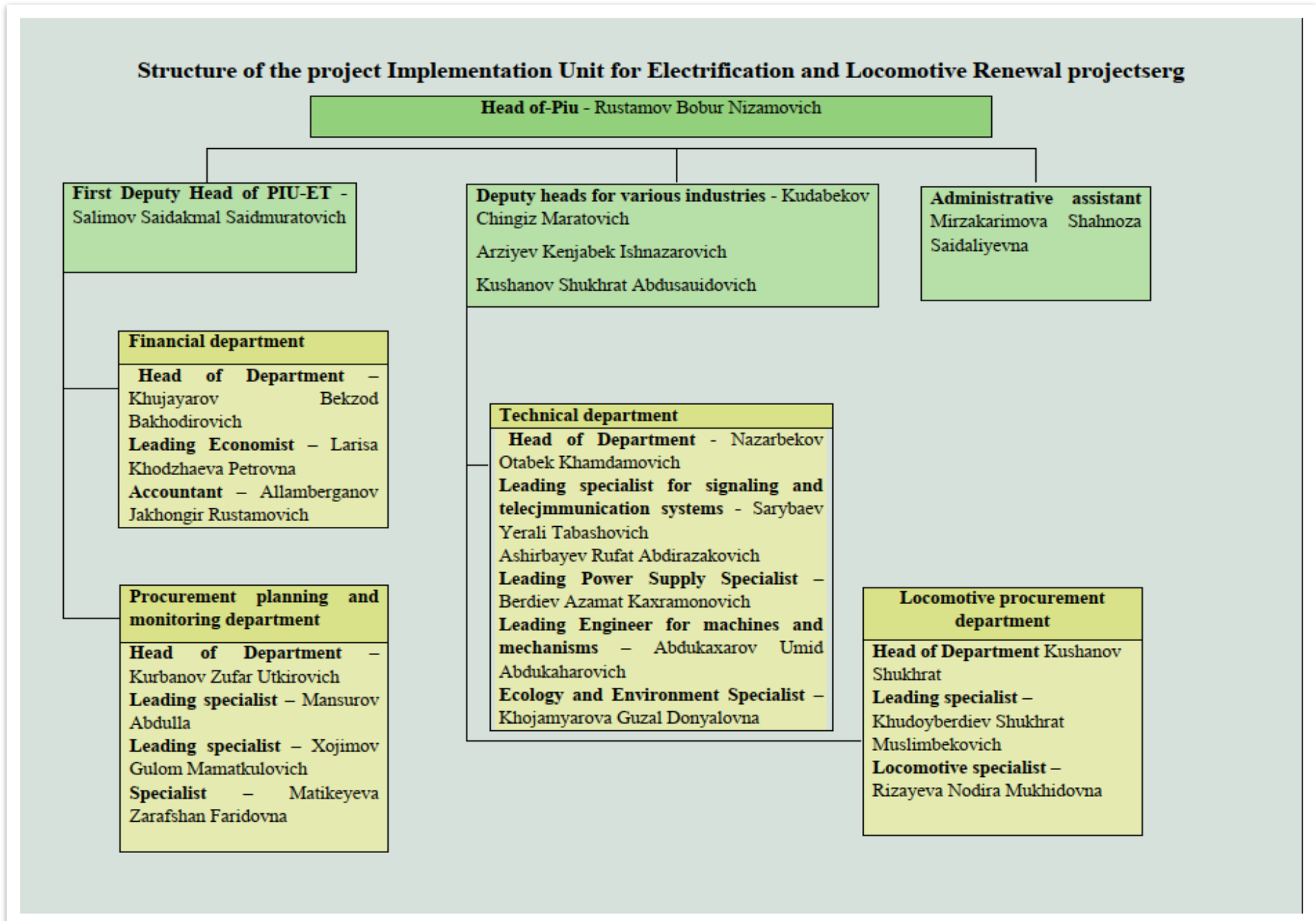
17. International and national experts are involved as consultants on engineering and construction supervision. The terms of the contract include design and construction work; therefore, the role of engineering and construction supervision consultants is to manage contracts with PIU-ET and provide hands-on training in procurement, project management and supervision, operation and maintenance, and reporting.

18. The institutional schedule of the PIU-ET and IA is shown in Pictures 6 and 7 below:



Picture 6. Institutional scheme

Picture 7: Organizational structure of PIU-ET



2.2 Project contracts and management

19. The consulting company DB Engineering & Consulting GmbH (hereinafter referred to as PE DB E&C) has been hired to provide project supervision consulting (PSC).
20. The task of the services is to provide support to UTY at several stages of project implementation: development of tender documentation; support during the bidding process; viewing drawings developed by UTY and/or contractors; supervision and control of construction works, technical, commercial, and timely implementation of projects; interface management; supervision of construction; claims management.
21. In addition, the Consulting Company conducts training for UTY personnel after the implementation of the upgraded train control and management system.
22. During the procurement stage, the Consulting Company will support the preparation of technical specifications and bidding documents in accordance with the Open Competitive Bidding (OCB) procedures, in accordance with the ADB Procurement Policy and Procurement Standards and taking into account the package of contracts based on the Procurement Plan approved by ADB. In the course of this task, the Consulting Company provides continuous assistance to the PIU in the overall procurement process by attending all meetings with contractors and contract negotiations.
23. During construction supervision, the Consulting Company will supervise the execution of works by checking the work of the Contractors to ensure compliance with the project schedule, budget, quality and safety requirements, including environmental requirements.
24. The National Environmental Expert will carry out the tasks assigned by the Team Leader and assist the PIU, especially its Environmental Specialist. The Environmental Specialist shall (i) monitor Contractors' compliance with the mitigation measures in accordance with the EMP for Contractors for both ADB and UTY financed activities throughout the activity and report the results to the consultant team leader, PIU-ET, staff and to ADB in writing; (ii) advise and approve Contractors Site-Specific EMPs prior to submission to the PIU for approval prior to commencement of physical works; (iii) prepare an Environment, Health and Safety (EHS) section in the monthly and quarterly project progress reports; (iv) assist PIU-ET in updating the IEE/EMP as needed; (v) assist PIU-ET in the preparation of semi-annual environmental monitoring reports in accordance with ADB requirements; and (vi) conduct a brief training program on environmental protection for the PIU's labor protection staff and contractors' environmental specialists.
25. Based on the results of the bid, an agreement was concluded with the Contractor: JSC "Uzelektroapparat-Elektroshield" (Uzbekistan) contract BX-01-1 - Installation (design, supply, installation) for infrastructure related to power supply: new traction substations and sectioning posts. During the reporting period, construction and installation work was not started by the Contractor. In this organization, the first managers or authorized specialists are responsible for the timely completion of the project.

26. The main organizations involved in the project and the key specialists in these organizations who are responsible for monitoring the implementation of environmental protection measures are presented in Table 2 below.

27. A summary of civil works contracts and progress is presented in Table 3. The contract awarded included EMPs approved by ADB and any conditions of the applicable national EIA/IEE approval.

Table 2. Personnel associated with the implementation of environmental protection measures

Type of project participant	Agency/company name	Position	Name	Email
Executive agency	JSC «UTY»	Manager	Rustamov Bobur Nizamovich	utypiu@gmail.com
		Environment Specialist	Xodjamyarova Guzal	+998 99 877 22 10 guzal7123@gmail.com
Консультант по надзору за проектом	PE DB E&C	International environmental specialist	Said Muhammad Latif	-
		National Environmental Consultant	Bekmirzaeva Karina	+998 90 1689997 bekmirzaeva_k@mail.ru
Contractor	JSC "Uzelektroapparat-Elektroshield"	Deputy General Director	Shukurov Sherzod Bakhodirovich	-

Table 3. Summary of upcoming civil works contracts and progress

Package	Scope	Contractor	Contract signing planned	Date of approval			Name of personnel		Construction works			Progress as of (%)	
				SSEMP	HSMP	ERP	Environmental Officer	Health and Safety Officer	Start	End	DLP	31 January 2023 y.	31 December 2023 y.
BX-01-1	JSC "Uzelektroapparat-Elektroshield"	Design, supply, installation and commissioning of TSS and PS	07.11 2023	At the design stage	At the design stage	At the design stage	-	-	-	-	-	0	-
-	Contractor not selected	It is planned to design, supply, install: alarm systems, communications and installation of SCADA systems	-	-	-	-	-	-	-	-	-	0	-

Note:

SSEMP = site-specific environmental management plan,
 HSMP = health and safety management plan,
 ERP = emergency response plan,
 DLP = defect liability period.

2.3 Project activities for the current reporting period

28. Since no construction work was carried out during the reporting period, environmental monitoring of construction performance was not carried out.

2.4 Description of any changes in the design of the project

29. According to the Boshtransloyiha Act No. 93 dated January 11, 2024 (Appendix 2), it was established that the selected site for the construction of a traction substation in the area between the Khazorasp-Bagat stations in the Khazorasp district is located on the territory of about 30 household plots intended for agriculture. At the same time, taking into account that when these household plots are returned to the district reserve, problematic issues may arise related to the owners of these plots, and also taking into account that 1.04 hectares of irrigated land will be cut off from their intended use and will be limited passage of agricultural machinery for carrying out agrotechnical activities, the commission members decided to select a plot of land in contour 606 of the Duslik array on the section 356 km + 850 m between the Khazorasp-Bagat stations of the Khazorasp district for the construction of the duty part of the contact networks (DPCN) and the traction substation (TSS) (Google map attached). The dimensions of the control part of the contact networks (DPCN) are 102 by 65 meters, the dimensions of the traction substation (TSS) are 127 by 86 meters.

2.5 Description of any changes to agreed construction practices

30. Based on the act of Boshtransloyiha dated January 11, 2024, No. 93, the members of the commission decided to select a plot of land in contour 606 of the Duslik array on the section 356 km + 850 m between the Khazorasp stations for the construction of the duty part of the contact networks (DPCN) and the traction substation (TSS). - Bagat of Khazarasp district (Google map is attached). Based on the results of the decisions made, changes are being made to the approved methods for the construction of railway line electrification facilities.
31. Since construction work has not yet begun, changes are made to the agreed construction method.



Google map. A plot of land in contour 606 of the Duslik array on a section of 356 km + 850 m between the Khazarasp-Bagat stations of the Khazarasp district

3. ENVIRONMENTAL MEASURES

3.1 General description of environmental protection measures

32. CAREC Corridor 2 is at the contracting stage.
33. **рамках** Under this project, one national environmental specialist for the PIU and one international environmental specialist was selected. The activities carried out by the national environmental consultant during the monitoring period are presented in Table 4.

**Table 4. Environmental protection measures taken during the reporting period
(July - December 2023)**

Environmental protection measures
July - December 2023. A general environmental audit of the state of the project area was carried out by visiting and visual inspection (audit) of the sites Bukhara - Urgench - Khiva.

3.2 Audit of objects

34. Since no planning and construction work was carried out within the framework of this project during the reporting period, a general audit (inspection) of the environmental monitoring facilities of Tables 4 and 5 was carried out during the reporting period.

Table 5. Object audit

Date of visit	Auditor	Purpose of the audit	Summary of any significant findings	Letters issued after the audit
18.07.2023 - 21.07.2023	K. Bekmirzaeva, national consultant for environmental protection PE DB E&C	Inspection of objects, collection of photographic materials	Landscaping of adjacent territories was revealed at two stations	Not needed at this stage

35. Information on the conclusions based on the results of the on-site environmental audit at the work sites includes data on any identified circumstances. Below is information about the results.
36. During the environmental audit, it was found that the existing single-track railway line Bukhara-Urgench-Khiva was put into operation in 2017 within the framework of the project "Construction of the Urgench-Khiva Railway Line" according to the parameters of category I of environmental impact according to national legislation. The subgrade is mainly composed of sandy clays and loess-like loams.
37. Between the cities of Bukhara and Khiva there are ten railway stations: Bukhara, Yangiabad, Yakhshilik, Korlitog, Khizirbobo, Istiklol, Khazarasp, Dautepa, Bagat, Khanka, Urgench and Khiva. Most of the stations had already been built or rehabilitated before the start of the Project. There are also five junctions on the highway: Navbakhor, Parvoz, Kiyikli, Jayhun and Turon. As part of the Project,

signaling, communication and SCADA systems will be installed at all stations and crossings.

38. 27. More than two thirds of the alignment passes through desert and moderately populated areas. Although the railway line does not pass through any designated protected areas or buffer zones, about two-thirds of the line nevertheless passes through the Kyzylkum desert. The route also passes through settlements near Bukhara, the cities of Urgench and Khiva in the Khorezm region.
39. Previously, the IEE has undertaken a Biodiversity Assessment (BA) and a Critical Habitat Assessment (CHA). According to the IEE, there are 6 key biodiversity areas and 3 protected areas within 10 km of the project site. One of the protected areas is the natural monument of Vardantsi (IUCN category III - natural monument or feature). It is located 2 km from the project site and no impact is expected. The assessment results also indicated the presence of several Important Bird Areas (IBAs) in the wider vicinity of the Bukhara-Miskin railway section. They are: (i) Khorezm fishery and adjacent lakes, located about 2.5 km west of the railway line, (ii) Karakyr lakes, located about 3 km to the south, (iii) Ayakagytma lake, located about 50 km to the southeast and the surrounding desert, and (iv) the Tudakul and Kuyumazar reservoirs, located about 21 km to the southeast. These wetlands are elements of the international IBA network, key habitats for many rare and common bird species. Accordingly, they have a significant impact on the species composition of the desert avifauna of the project area, supplementing it with wetland species. Since 2007, on the territory of more than 400 hectares, south of Lake Karakyr, there has been a breeding center for the beauty bustard "Emirati Breeding Center birds." The Center regularly releases bred birds into the wild. Since 2012, more than 10,000 Gubars have been released into the gypsum desert in the vast areas of the center, including 2382 birds in March 2019. Some of them are registered as nesting in the project area. Segments of the Kuldzhuktau lowland are located 7 km northeast of the Yakhshilik and Kiyikli railway stations. This is a nesting site for large birds of prey, which can be observed in the project area in search of food, as well as during migrations and movements. As noted in the IEE, the concentration of the bustard in the project area is mainly due to the existence of an artificial breeding center (Emirati Conservation Bird Centre), which will not be adversely affected by the project after mitigation measures are taken.
40. Five of the eight TSSs will be in desert and semi-desert areas: Turon, Djakasai, Kiyikli, Parvoz and Navbakhor. Two TSSs will be in the settlements: Khazarasp and Urgench. The Bukhara TSS will be located on agricultural land.
41. As part of the audit, it was found that in 2022-2023, work was carried out to improve the adjacent territories of existing stations to protect the atmospheric air. Examples are shown in **Picture 8**.
42. Each station is provided with containers for collecting municipal solid waste (MSW) and, when filled, are transported to an authorized solid waste landfill.



Picture 8. Examples of improvement of the adjacent territory of existing stations.

3.3 Tracking issues (based on notifications of non-compliance)

43. During the reporting period, planning and construction work was not carried out; therefore, no significant problems in the field of ecology and environmental protection were identified in the project areas.

Table 6. Summary of issue tracking activities for the current period

Table of results	Qty
The total number of questions on the project	0
Number of open questions	0
Number of closed questions	0
Close percentage	0%
Questions opened in this Reporting Period	0
Questions closed in this reporting period	0

3.4 Trends

44. This is the second SAEMR and environmental trends have not previously been systematically monitored for this project as no construction or installation work took place during the reporting period.

3.5 Unintended environmental impacts or risks

45. Unforeseen environmental impacts are not currently identified. Environmental measures are planned according to the EMP.

4 COMPLIANCE STATUS

46. The status of compliance with environmental conditions in the Project Loan Agreement signed between the Republic of Uzbekistan and ADB on 6 August 2021 is summarized in Table 7.

Table 7. Compliance status of the loan agreement

Schedule	Paragraph	Requirements	Compliance Status
4	3	<p><u>Terms of the contract</u> The Borrower shall ensure or instruct UTY to ensure that no contracts for performance of works involving environmental impacts are entered into until: (a) the relevant environmental authority of the Borrower has given final approval to the IEE; And (b) UTY has included relevant provisions of the EMP in the work contract.</p>	<u>Completed.</u>
4	4	<p><u>Environment</u> The Borrower shall ensure or instruct UTY to ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable environmental, health and safety laws and regulations of the Borrower; (b) environmental safeguards – implementation of the EMP; and (c) all measures and requirements set out in the IEE (including, but not limited to, corrective action plans for Associated Facilities and Existing Facilities) and the EMP, as well as any corrective or preventive actions set out in the Safeguards Monitoring Report.</p>	<u>Complied.</u> In accordance with national legislation, the project cannot be launched unless the feasibility study is approved by all government agencies associated with the project, including the Ministry of Justice, the Ministry of Construction, the Ministry of Health, the Ministry of Employment and Labor Relations, and the Ministry of Ecology, etc. All these bodies check the compliance of the project with all relevant regulatory documents and approve the feasibility study or issue their comments / observations before issuing a Presidential Decree on the implementation of the project. All measures and requirements set out in the IEE and EMP, as well as all corrective or preventive actions.

4	8	<p><u>Human and financial resources to meet safeguards requirements.</u> The Borrower shall provide or cause UTY to provide the necessary financial and human resources for the full implementation of the EMP; Social due diligence report, including the corrective actions set out in such report.</p>	<p><u>Complied.</u> The PIU hired one environmental and social specialist from UTY. The Environmental Specialist is responsible for the EMP portion of all UTY projects implementing ADB-financed projects. The supervisory consultant hired by the PIU includes national and international environmental consultants responsible for compliance with environmental, health and safety requirements.</p>
4	9	<p><u>Guarantees - relevant provisions in contracts for bidding. Documents and contracts for the performance of work.</u> The Borrower shall ensure or instruct UTY to ensure that all bidding documents and works contracts contain provisions requiring contractors to: (a) comply with the contractor related measures set out in the IEE, EMP and Social Due Diligence Report (to the extent they relate to the impact on the population affected during construction) and any corrective or preventive actions set out in assessment Monitoring Report; (b) provide a budget for all such environmental and social measures; (c) provide the Borrower with written notice of any unanticipated environmental, resettlement, or Indigenous people-related risks or impacts that arise during the construction, implementation, or operation of the Project or Associated Facilities or Existing Facilities that have not been accounted for in the IEE, EMP, and Social Security Report. complex check; (a) properly record the condition of roads, agricultural land and other infrastructure prior to the commencement of material transportation and construction; And (b) upon completion of construction, put the paths and other local infrastructure in order at least to the pre-design condition, and carry out</p>	<p><u>Complied.</u> (a) The IEE and EMP are an integral part of all tender documents and work contracts and are included as appendices to contracts. Accordingly, contractors must unconditionally comply with the requirements of the IEE and EMP. All corrective or preventive actions are presented in the semi-annual environmental monitoring reports. (b) Contractors' budgets partially include the required IEE and preventive measures. Despite this, contractors must comply with the requirements in accordance with national legislation. (c) The Borrower will be informed of any unforeseen impacts. Since the continuation of the project is impossible without the decision of the Borrower (d) Prior to commencement of work, the Contractor shall obtain permits from the State Railways under the Ministry of Transport with a preliminary selection of road inspectors. With regard to agricultural land and other infrastructure, governor of districts / cities make decisions with the permission of land users or land owners. (e) All permits are issued only subject to restoration upon completion of work.</p>

		the reclamation of agricultural land.	
4	10	<p><u>Safeguard monitoring and reporting.</u></p> <p>The Borrower shall do the following or instruct UTY to do the following:</p> <p>(a) submit semi-annual safeguard monitoring reports to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p> <p>(b) if any unforeseen environmental and/or social risks and impacts arise during the construction, implementation or operation of the Project, Associated Facilities or Existing Facilities that have not been considered in the IEE, EMP and Social Comprehensive Report, immediately inform ADB of the occurrence such risks or impacts, with a detailed description of the event and a proposed corrective action plan; And</p> <p>(c) report any actual or potential violation of compliance with the measures and requirements set out in the IEE; EMP; Social due diligence report, including the corrective actions set out in such report, promptly after becoming aware of the violation.</p>	<p><u>In progress.</u></p> <p>The Loan Agreement requires the submission of Safeguard Monitoring Reports in accordance with the IEE. The PIU submits semi-annual reports, as also agreed during the ADB safeguard missions.</p> <p>a) After the publication of the EMR on the ADB website, the reports are translated into Russian and then published on the website of the Executing Agency. The annual report for 2022 has been submitted.</p> <p><u>Complied.</u></p> <p>b) Between January and June 2023, there were no environmental risks and impacts due to the lack of construction activities.</p> <p>c) <u>In progress</u> - about all actual or potential violations of compliance with the measures and requirements set out in the IEE; EMP will be reported immediately; Social due diligence report, including the corrective actions set out in such report, promptly after becoming aware of the violation.</p>
4	11	<p><u>Forbidden list of investments.</u></p> <p>The Borrower shall ensure and oblige UTY to ensure that no proceeds from the Loan are used to finance any activity included in the list of prohibited investment activities set out in Appendix 5 of the SPS.</p>	<p><u>Completed.</u></p> <p>The proceeds of the loan are not used to finance any activity included in the list of prohibited investment activities in accordance with Appendix 5, SPS.</p>
4	12	<p><u>Labor standards, labor protection and safety.</u></p> <p>The Borrower shall ensure and oblige UTY to ensure that basic labor standards and applicable laws and regulations of the Borrower are observed during the implementation of the Project. The Borrower shall ensure that UTY's bidding documents and contracts financed by ADB under the Project include specific provisions requiring contractors to, among other things:</p> <p>(a) comply with applicable labor</p>	<p><u>Complied.</u></p> <p>The project is implemented in accordance with basic labor standards and applicable laws and regulations. Relevant provisions are included in the tender documentation and contracts for the performance of work with contractors.</p>

		laws and the Borrower's regulations and include applicable workplace health and safety regulations; b) not use child labor; (c) not discriminate against workers in respect of employment and occupation; (d) not use forced labor; (e) allow freedom of association and effectively recognize the right to collective bargaining; and (f) disseminate or engage appropriate service providers to disseminate information about the risks of sexually transmitted diseases, including HIV/AIDS, to contractors employed by the Project and to members of local communities surrounding the Project area, in particular women.	
4	13	The Borrower shall strictly enforce the requirements set out in paragraph 12 above and provide regular reports to ADB.	<u>Complied.</u>

5 ENVIRONMENTAL MONITORING RESULTS

5.1 Overview of monitoring carried out during the current period

47. Currently, the project activities are at the stage of concluding contracts for the provision of services. Thus, monitoring of environmental indicators has not yet been carried out. At the same time, a general audit of the project area was carried out.

5.2 Air quality monitoring

48. N/D

5.3 Noise

49. N/D

5.4 Vibration

50. N/D

5.5 Water quality monitoring

51. N/D

5.6 Topsoil management and soil pollution

52. N/D

5.7 Waste generation

53. N/D

5.7.1 Non-hazardous waste

54. N/D

5.7.2 Hazardous waste

55. N/D

5.8 The conditions of the construction camp for workers

56. N/D

5.8.1 Storage of construction materials on the site

57. N/D

5.8.2 Refuelling station N/A

58. N/D

5.9 Health and safety

59. N/D

5.9.1 Health and safety of population

60. N/D

5.10 Use of material resources

61. N/D

5.11 Covid-19 activities

62. N/D

5.12 Grievance Redress Mechanism

63. In accordance with ADB's Safeguard Policy Statement (2009), a Grievance Redress Mechanism (GRM) will be established upon project entry into force. The main objectives of the GRM are to ensure free filing and timely consideration of grievances and observations made by project aggrieved persons, as well as to resolve grievances at the project level and prevent their referral to national courts or the ADB Accountability Mechanism. Along with ADB requirements for the development and approval of 215 a mechanism for redressing complaints when implementing investment projects, the procedure for resolving complaints in Uzbekistan is also regulated by the national legislation of the Republic of Uzbekistan, in particular, the law "On Citizens' Appeals" and the Law "On the Procedure for Filing Appeals from Individuals and Legal Entities" (2014). The procedure for filing complaints and appeals from citizens was discussed during public consultations in the project areas.
64. The PIU-ET will be responsible for serving as the secretary of the GRM to ensure that the GRM operates to effectively address the environmental and social concerns of project-affected persons.
65. Each contractor will also establish a mechanism to receive, register and document complaints at construction sites. Both types of complaints from workers and surrounding communities in any form (anonymous or signed) will be considered. The Contractor will be required to report complaints received and actions taken to address them to the PIU-ET.

5.13 Trainings

66. N/D

5.14 Implementation of the environmental management plan

67. For this report, two Environmental Management Plans (EMPs) have been developed in accordance with the IEE, as two different construction work packages will be used for this project:
- (i) for railway electrification and construction of traction substations, and (ii) for construction of external power supply lines. Thus, two different EMPs will be included in the tender documents for contractors.
68. The status of compliance with the environmental management plan (EMP) approved under the project IEE for June 2023 is presented in **Table 8** below.

1. EMP for railway electrification and construction of traction substations

Table 8: Environmental management plan for contact network, traction substations, signaling, communication and SCADA systems

№	Impact	Mitigation measure	Responsibility	Cost
Pre-construction stage				
1	Collection of various potential environmental impacts as a result of changes in project documentation, schematic plans.	1. Update or Prepare new IEE document, which shall be completely comply with the Statement ADB on Safeguard Policy measures (2009).	Specialist ecologist PIU-ET with the assistance of the Consultant PE DB E&C	Included in the budget of the Consultant PE DB E&C and PIU-ET
2	Lack of relevant environmental requirements	2. Ensure that environmental measures along with the EMP are included in bidding documents and contracts for contractors; 3. When evaluating proposals, consideration shall be given to: the ability of bidders to comply with the EMP requirements, to propose adequate budgets for the effective implementation of the EMP, and the existence of best practices in environmental performance with other similar projects; 4. Within 30 days of contract award and prior to commencement of any physical work, Contractors will develop Site Specific Environmental Management Plans (SSEMPs) under the guidance of the Consultant, and once approved by the Consultant, submitted to PIU-ET;	Specialist ecologist PIU-ET with the assistance of the Consultant PE DB E&C	Included in the budget of the Consultant PE DB E&C and PIU-ET

3	Use of unauthorized quarries	5. Selected contractors need to locate the nearest licensed pits and enter into agreements for the supply of inert materials in the prescribed manner (Ministry of Mining and Geology, Ministry of Natural Resources);	Contractors provide documents to the Consultant of the PE DB E&C, the Consultant checks for permits	Included in contractor's budget
4	Non-compliance of purchased machines with national regulations for equipment and machines	<ul style="list-style-type: none"> • Ensure purchased vehicles and fuels comply with the Euro 4 emission standard; 	Consultant PE DB E&C, PIU-ET	Included in contractor's budget
5	Non-compliance of Goods Procurement Procedures with ADB Safeguard Policy Statement (2009)	<ul style="list-style-type: none"> • Ensure that the procurement of goods under the project shall be carried out in accordance with the Prohibited List investment activities of ADB set out in Appendix 5 of the Security Policy Statement (2009). 	Consultant PE DB E&C, PIU-ET	Included in the PE DB E&C Consultant budget and in the PIU-ET budget
6	Improper development of the EMP and EMP for a specific work site	<ul style="list-style-type: none"> • The final design decisions for the Khazarasp TSS shall be agreed with the Khazarasp District Water Resources Management to avoid negative impacts on surrounding buildings and crops; 	Contractors prepare documentation, PE DB E&C consultant checks, PIU-ET approves	Included in the Contractor's budget
7	Improper preparation of the Environmental Management Plan for the construction site by the contractor	Development of specific guidelines for implementation as part of the SSEMPs such as; (i) spill response plan; (ii) dust management and control plan; (iii) noise management plan; (iv) Waste and Spoil Management Plan including Hazardous Waste/Materials	Consultant PE DB E&C	Included in the PE DB E&C Consultant budget and in the PIU-ET budget

		Management Plan; (v) worker's camp site management plan; (vi) traffic management plan; (vii) prevention and control measures for biodiversity management, (viii) safety management during stringing; (ix) chance find procedure, (v) COVID-19 health and safety management plan and emergency response plan; etc. depending on the scopes and anticipated impacts.		
Construction stage				
1	Impact on air quality	<ul style="list-style-type: none"> - Apply watering of TSSs' construction sites and other construction sites located close to settlements during windy weather and in the dry season; - During building/facility renovations and signaling and telecom system installations, apply watering to construction sites during windy weather and in the dry season; - Ensure that all vehicles and equipment comply with national standards on gas emissions ("O'z DSt 1057:2004 Vehicles. Safety requirements for technical conditions" and "O'z DSt 1058:2004 Vehicles. Technical inspection. Method 	Realized by contractors. PIU-ET and Consultant PE DB E&C monitor the implementation	Included in the Contractors budget

		<p>of control”);</p> <ul style="list-style-type: none"> - Cover all piles of soil, sand and gravel that will not be used within the next 24 hours to prevent dust generation; - Cover transported bulk materials; - In case of the need to demolish the roof during the installation of signaling and telecom systems at the Hazarasp station, conduct works in accordance with an AMMP; - Vehicle speeds will be restricted on construction sites and access roads; - All construction machinery and equipment will be maintained in good working order and not left running when not in use; - A Project OHS Management Plan will be implemented to ensure that project workers are protected from dust and emission impacts, for example by wearing dust masks when working in or near dust generating activities; <p>No burning of any material anywhere on or near construction sites</p>		
2	Noise and vibration	<ul style="list-style-type: none"> - Inform populations of settlements close to construction sites in advance about 	Realized by contractors. PIU-ET and	Included in the Contractors budget

		<p>construction works;</p> <ul style="list-style-type: none"> - The operation of heavy equipment will be conducted between 7 am and 7 pm only and be undertaken intermittently not continuously; - In case of receiving any complaints from population, additional noise measurements will be conducted, and in case of exceeding established standards², additional mitigation actions for decreasing noise levels need to be undertaken (such as establishing temporary sound absorbing barriers, installing special equipment on noisy machinery and others); - Schedule construction so as to minimize the simultaneous use of the noisier equipment near sensitive receivers; - Considering fact that TSS detail final design will be ready later and actual work area of techniques generating noise exceeding standards may change, and as consequences noise level may decrease, it is 	<p>Consultant PE DB E&C monitor the implementation</p>	
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² Admissible noise level into the living area, both inside and outside the buildings (SanR&N No.0267-09)

		<p>proposed to conduct baseline noise measurements before construction and in the beginning construction in front of living houses. In case of exceeding norms for daytime (55 dB), establishment of additional acoustic barrier will be required (with height of 4 meters). It is anticipated that installation of acoustic barrier will be needed only in Hazarasp TSS;</p> <ul style="list-style-type: none"> - Conduct noise measurements in front of residential houses in Urgench depots before and during construction. In case of exceeding standards, it will be necessary to install acoustic barrier. <p>Use of Personal Protective Equipment (PPE) by workers involved in construction works in conditions of increased acceptable noise level (for situation when equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110dB(A), workers should use hearing protection equipment.</p>		
3	Pollution of surface and ground water	<ul style="list-style-type: none"> - Ensure that location of Hazarasp TSS will not impact on 	Realized by contractors.	Included in the Contractors budget

		<p>the local drainage system. It will be achieved through correction of location TSS or re-allocation of existing drainage canal (on 30-50 meters);</p> <ul style="list-style-type: none"> - Construction and labor camps, including the storage places for lubricants, fuel and other oils will be located 100 m away from water bodies; - If the washing of vehicles and equipment is planned at the labor/construction camp sites, appropriate wastewater treatment facilities will be organized on the camp and in specially designated areas. The maintenance area should be provided with oil and grease traps to prevent oil from being washed into offsite drainage canals. - Activities relating to refueling, oil replacement or repair works will be prohibited within 100 m of surface water courses; - Sanitary water and solid waste will not be released directly into surface water streams or other water resources. Adequate on-site sanitation facilities 	<p>PIU-ET and Consultant PE DB E&C monitor the implementation</p>	
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		<p>with septic tanks should be provided in order to prevent untreated sewage from being channeled into the drainage canals, irrigation canals, and rivers and other water resources.</p> <ul style="list-style-type: none"> - Topsoil stripped material will not be stored within 100m of water bodies or in areas where natural drainage will be disrupted; - In case the drilling of wells is necessary for technical or drinking purpose use, relevant drilling and water use permissions will be received from relevant authorities <ul style="list-style-type: none"> - State Committee on Geology and Mineral Resources and State Committee on Ecology and Environment Protection. - Management and storage of fuel, waste oil, hazardous waste will be planned in accordance with the IFC EHS General Guidelines on Hazardous Materials Management. This includes the use of appropriate secondary containment structures capable of containing the larger of 110 		
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		<p>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.</p> <ul style="list-style-type: none"> - Remove topsoil (about 30 cm depth) and store separately during the excavation works, and afterwards, use soil for filling trenches and foundations excavations; - Use surplus soil generated during the construction of TSSs at the same substations for the creation earth bed for equipment or landscaping adjusted areas; - - Use only authorized carriers with getting all necessary permissions from respective national agencies (SCEEP, khokimiyats); - In case of necessity to open new carrier for construction materials, obtain all necessary permissions and certificates. Ensure their proper restoration after completion project works; - Storage and handling of hazardous materials, chemicals, fuels 		
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		<p>and oils in specially equipped places;</p> <ul style="list-style-type: none"> - Provide spill prevention and control kits on each construction site; <p>Ensure regular maintenance of vehicles and machinery.</p>		
4	Impact on biological resources	<p>Impact on flora</p> <ul style="list-style-type: none"> - In case of construction works during spring time, examine project area on presence of the plants included into the Red Book, reallocate or pay compensation in accordance with Resolution # 299 of the Cabinet of Ministers of the Republic of Uzbekistan dated 27 October, 2014 "On regulating biological resources use and realization of licenses procedures for use of flora and fauna sites"; - Landscaping and revegetation of territories of the traction substations will be implemented in fully compliance with project technical specifications; - Do not apply chemicals for removing vegetation from the sites; - Ensure that all construction works will be implemented within the territory 	<p>Realized by contractors.</p> <p>PIU-ET and Consultant PE DB E&C monitor the implementation</p>	Included in the Contractors budget

		<p>of stations and allocated traction substations.</p> <ul style="list-style-type: none"> - Worker awareness and training sessions in relation to the protection of local flora - Conduct land leveling of areas where soil was extracted for construction purposes in order to avoid attracting migrating birds and other rare species of animals and cause their death at railway facilities; - Install markers on catenary system's wires if required (based on findings of baseline monitoring of birds); - Conduct regular trainings for construction workers and maintenance personnel of the railway line: - On the protection of the Central Asian tortoise, grey monitor lizard, boa constrictors, houbara bustard and long-tailed hedgehog; - on danger of desert rodents - On the benefits of snakes and rules of behavior when encountering them. - Complete all construction outside the breeding bird season (April-June) and/or complete a nesting bird check 		
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		<p>(including ground nesting birds) prior to any ground disturbance. This measure is mostly related to the construction of Yoshlik and Parvoz TSSs;</p> <ul style="list-style-type: none"> - The construction of the temporary access roads and the distribution lines close to the breeding center should be completed outside the nesting period. <p>Implement Good International Industry Practice (GIIP) during construction, including a ban on hunting and live capture by construction workers and awareness training.</p>		
5	Impact on land use	<ul style="list-style-type: none"> - All construction works will be implemented within allocated lands; <p>Prohibit the use of unauthorized carriers for construction materials.</p>	<p>Realized by contractors.</p> <p>PIU-ET and Consultant PE DB E&C monitor the implementation</p>	No expenses
6	Waste generation	<p>Non-hazardous wastes</p> <ol style="list-style-type: none"> 1. Segregate wastes into recyclable and non-recyclable wastes; 2. Conclude agreements with relevant agencies (Hokimiyat, Vodokanal and etc.) on solid and liquid wastes disposal; 	<p>Realized by contractors.</p> <p>PIU-ET and Consultant PE DB E&C monitor the implementation</p>	Included in the Contractors budget

		<p>3. Provide hydro-isolated septic tanks for the collection of wastewater at the camp sites, and bio-toilets for workers at construction sites, and ensure the timely disposal of wastewater into local wastewater municipal systems.</p> <p>4. Sell or donate recyclable wastes to relevant organizations and ensure timely disposal (each 3 days) of non-recyclable wastes;</p> <p>5. Prohibit the burning of waste on any construction site.</p> <p>Hazardous wastes</p> <p>6. Prior to the commencement of rehabilitation works on demolishing existing buildings, PIU-ET EPS with the contractor's manager, EMO and HSO will conduct observations of old buildings and facilities regarding the presence of asbestos materials;</p>		
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		<p>7. In case of the presence such materials, Ошибка! Источник ссылок не найден. will be implemented by the respective contractor;</p> <p>Conduct vehicle refueling, oil replacement and other similar activities in specially designated and properly equipped places. Emergency facilities and procedures will be in place for the reduction of accidents and oil spills.</p>		
7	Impact on Socio-economic resources	<p>Increase public awareness among the population on the project area through communication and informing the public in advance about project works;</p> <p>Involve local workers in the project works where specific qualifications are not required.</p>	<p>Realized by contractors</p> <p>PIU-ET and Consultants (Social and Safety Specialist) PE DB E&C monitor implementation</p>	Included in the Contractors budget
8	Health and safety risks	<p><i>Community Health and Safety</i></p> <ul style="list-style-type: none"> - Contractor and PE DB E&C Consultant will inform the population about anticipated works in each settlement in advance; - Contractors will be required to develop traffic management plans, with clear indications of routes for vehicle movements, the placement of 	<p>Realized by contractors</p> <p>PIU-ET and Consultants (Social and Safety Specialist) PE DB E&C monitor implementation</p>	Included in the Contractors budget

		<p>special signs, speeding restrictions inside of the settlements (30 km/h), and a schedule of transportation activities to assist to mitigate peak traffic periods;</p> <ul style="list-style-type: none"> - Clear signs will be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, excavations etc. and raising awareness on safety issues. - All construction sites, trenches and ditches will be properly lightened and fenced; - Site Specific Plans for campsites will be developed by Contractors; - Carry out regular awareness campaigns among work staff, including specific hazards associated with the spread of HIV/AIDS. <p>To avoid cases of gender-based violence and sexual exploitation and abuse, each Contractor will have to develop and implement a Code of Conducts</p>		
9		<p><i>Occupational Health and Safety</i></p> <p>General Contractors will develop an</p>	<p>Realized by contractors</p> <p>PIU-ET and Consultants (Social Safety and</p>	<p>Included in the Contractors budget</p>

		<p>Occupational Safety and Health Plan (OSHP) based on EHS General Guidelines (footnote Ошибка! Закладка не определена.);</p> <p>Contractors will conduct training for workers on EHS and SSEMP implementation;</p> <p>Contractors will ensure proper implementation of OSHP and SSEMP by all workers.</p> <p><i>Fiber cable laying works</i></p> <p>All employees performing any splicing or termination activities should always wear safety glasses with side shields. Any other employees or site managers entering the work area will wear safety glasses with side shields also;</p> <p>Unless an employee is absolutely sure there is not a light source at the other end, they should never look directly into the end of the cable. A power meter will be used to make certain the fiber is dark;</p> <p>While working with fiber optics, the worker needs a well-ventilated and well-lit work area;</p> <p>All food and beverages will be kept out of the work area. Workers can wear disposable aprons to keep fiber particles off their clothing. Before leaving the work area, an employee will</p>	<p>Specialist) PE DB E&C monitor implementation</p>	
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		<p>always check their clothing for pieces of stray fiber, and if any are found, they can remove it with double-sided tape;</p> <p>A worker will wash their hands thoroughly before touching their eyes, and contact lens wearers should wash their hands before touching their lenses. Workers should also read all instructional material before handling chemicals;</p> <p>A disposable container that will be tightly closed must be used for fiber scraps. When finished with a fiber optic job, all cut fiber pieces will be disposed of properly along with any used chemicals and containers. The work area will be thoroughly cleaned when job is completed.</p>		
10		<p>COVID-19 risks</p> <p>Appropriate sanitary precautions will be taken if cases are identified, such as masks, additional ventilation, social distancing.</p>	Realized contractors (if necessary)	by Included in the Contractors budget
11	Establishment and operation of Construction camps.	<p>Develop worker's camp site management plan in reference to World Bank Group's Workers' Accommodation:</p> <p>Processes and Standards, as part of the SSEMP, and implement;</p> <p>select location of the camp sites to ensure least possible conflict with local population - e.g., at a distance from</p>	Realized contractors	by

		<p>where population density is high;</p> <p>ensure that construction camps are located 50 m away from irrigation canals;</p> <p>Inform the closest local community (if any) in advance about planning activities.</p>		
12	Impact on Physical Cultural Resources	<p>Excavation and other works will be suspended immediately;</p> <p>Area with possible heritage will be fenced with fencing tape;</p> <p>A designated focal point from a local administration (khokimiyat) will to be informed and invited to assess potential heritage and undertaken necessary actions;</p> <p>Civil works at the finding place will be recommenced after obtaining permission from the focal point (deputy governor of relevant district).</p>	<p>Realized by contractors</p> <p>PIU-ET and Consultant PE DB E&C monitor the implementation</p> <p>The representative of the khokimiyat assists in the assessment and takes the necessary actions</p>	Included in the Contractors budget
13	Construction sites and areas used for construction camps without proper cleaning and reinstatement works	<p>After completion of the main construction, the Contractor will provide full reinstatement of the construction and camp sites by bringing them to their primary condition;</p> <p>All rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required will be removed;</p> <p>All hardened surfaces within the construction camp areas will be ripped, all imported</p>	<p>Realized by contractors</p>	Included in the Contractors budget

		<p>materials removed; PE DB E&C Consultant will conduct a post-construction audit during defect liability periods to ensure that construction sites and camps are properly cleaned and restored to pre-project conditions before the acceptance of works and hand-over to the Kokand Regional Departments of UTY, which will be responsible for the operation and maintenance of the electrified railway. After completion of works, all roads will be rehabilitated at least up to condition of pre-construction stage.</p>		
Operation phase				
1	Noise and vibration	<p>Conduct noise modeling if daily frequency of trains exceed the number used in the model for this IEE (30 trains per day).</p> <p>In case of a significant increase of the number of trains in the project zone, additional instrumental measurements near sensitive receptors will be necessary, and if the noise levels exceed the current level by 3 dB or more, additional mitigation measures must be developed and implemented as recommended in Chapter Ошибка! Источник ссылки не найден.: (i) use special</p>	<p>NOKS³ with assistance of the National Design Institute “Boshtransloyiha” who developed national Feasibility Study In case of exceeding of noise level, NOKS will undertake additional measures</p>	<p>Included in BRD/KRD budget</p>

³ NOKS – department under UTY which will be responsible for maintenance of railway during operation phase

		<p>seals for rails, (ii) improvement of embankment through using coarse fraction of crushed stone, (iii) rails and wheel turning will be implemented</p> <p>5.3.4.1.</p> <p>If the number of trains traveling across the project zone increases, the train traffic schedule is desirable to develop in the way as to limit their traffic across the project zone to day time hours.</p>		
2	Impact on water resources	<p>Conclude agreements with local Suvoqova regarding the disposal of domestic wastewater from stations and TSSs;</p> <p>Verify that UTY, as the maintenance company ensures that wastewater is not discharged into water bodies without treatment;</p> <p>Washing equipment will be prohibited on the territory of the traction substations;</p> <p>Rail car maintenance will be allowed only in specially equipped depots (Bukhara and Khiva).</p>	BRD and KRD	Included in BRD/KRD budget
3	Soil pollution	<p>Ensure that only authorized carriers are used in the supply of construction materials from borrow pits;</p> <p>All types of wastes from TSSs will be disposed of in a timely manner in accordance with</p>	BRD and KRD	Included in BRD/KRD budget

		<p>procedures approved by national agencies.⁴ No wastes will be buried;</p> <p>Ensure that the maintenance of vehicles and machinery, the use, storage and handling of chemicals, and the management of wastes, are implemented only in designated and specially equipped areas.</p>		
4	Impact on Biological resources	<p>Impact on flora</p> <p>Implement integrated vegetation management (IVM). From the edge of the track area to the boundary of the right-of-way, vegetation will be structured with smaller plants near the line and larger trees further away from the line, to provide habitats for a wide variety of plants and animals;</p> <p>Native species will be planted, and invasive plant species removed;</p> <p>Maintenance clearing in riparian areas will be avoided or minimized.</p> <p>Impact on fauna</p> <p>Suspension insulators of power supply of the electric train throughout the whole length and horizontal structures on traction substations must be equipped with bird protection devices</p>	BRD and KRD	Included in BRD/KRD budget

⁴ Including the State Committee on Ecology and Environmental Protection, local municipalities, and the Sanitarian Epidemiological Station.

		<p>(BPD).</p> <p>If for railway maintenance opening of new borrow pits for extraction of soil will be required, all opened borrow pits have to properly cultivated in order to prevent the formation of permanent or seasonal reservoirs, which will attract migrating birds and other rare species of animals and cause their death at railway facilities;</p> <p>It is recommended to install CCTVs to monitor the movement and safety of wild animals at crossings under the railway line;</p> <p>It is recommended to conduct regular extermination of rodents in the vicinity of the Bukhara-Misken railway. The measures to reduce the number of rodents is effectively carried out by the road anti-plague station (RAPS), which is part of the medical service of UTY. These measures will contribute to the epidemiological safety of the population and significantly reduce the risk of bio-injuries. The absence or low number of rodents along the railway line will also significantly reduce the risk of death of predatory birds on power lines.</p> <p>It is necessary to conduct regular</p>		
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		<p>trainings for construction workers and maintenance personnel of the railway line:</p> <p>On the protection of the Central Asian tortoise, grey monitor lizard, boa constrictors, houbara bustard and long-tailed hedgehog;</p> <p>On the benefits of snakes and rules of behavior when encountering them;</p> <p>In order to perform the abovementioned actions efficiently, a qualified EWS-NBS who will conduct monitoring of birds' migration and will work with PIU-ET will be hired;</p>		
5		<p>Involve the road anti-plague station (RAPS), which is part of the medical service of UTY to implement measures to reduce the number of rodents.</p>	BRD and KRD and media agencies	Included in BRD/KRD budget
6	Waste generation	<p><i>Non-hazardous</i></p> <p>It recommended to introduce a waste recycling program, including the placement of waste-labeled containers in each station and each train for improved segregation and further disposal;</p> <p>The UTY will ensure that waste collection and its disposal from passenger trains is being implemented properly, and that liquid wastes are not discharged during train</p>	BRD and KRD	Included in BRD/KRD budget

		stops; Agreements on waste collection and disposal will be concluded between local khokimiyats, waste management entities and railway stations and track substations;		
7		<i>Hazardous</i> To avoid soil pollution, all oil replacement works will be conducted in compliance with the JSC 'Uzbekenergo' instruction "RH 34-301-941: 2007 Individual consumption rates of transformer oil for the repair and maintenance needs for equipment of power facilities"; Spare oil has to be storage in properly organized places with concrete floors and covers; Oil used in transformers will be free from oil.	BRD and KRD	Included in BRD/KRD budget
8	Health and safety risks	<i>Occupational Health and Safety</i> UTY will ensure compliance with all safety requirements indicated in all relevant documents indicated in previous paragraphs; Mitigation measures relating to the repair or replacement of fiber cable are indicated in this table. All measures related with COVID-19 has to applied in accordance with relevant national regulations. <i>General rail operation safety</i>	UTY, BRD, KRD and media agencies	Partly included in PE DB E&C Consultant contract

		<p>Conduct awareness program on a regular base, which will include among others such topics as: impact of electromagnetic fields, electrocution, and risks related to fast moving trains;</p> <p>Prepare spill prevention and control, and emergency preparedness and response plans, based on an analysis of hazards, including the nature, consequence, and probability of accidents;</p> <p>Install automatic gates at all level crossings, and regular inspection/maintenance to ensure proper operation;</p> <p>Fulfill occupational and community health and safety requirements as indicated in national and international standards documents;</p> <p>It is recommended to consider the density of population in the project area during safety assessments and the necessity of additional passages.</p>		
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2. EMP for external energy supply

Table 9: ENVIRONMENTAL MANAGEMENT PLAN FOR CONSTRUCTION EXTERNAL POWER SUPPLY

№	Impact	Mitigation measure	Responsibility	Cost
Pre-construction stage				
1	Impact on biological resources	1. Carry out pre-construction monitoring during the migration season (late April, May and September-October) to identify additional sites for marker installation.	EWS-NBS	Included in Contractor budget
2		1. Move the alignment of the external power supply line away from the Asian Houbara breeding center westward, to ensure a 4km distance between them. [Note: this action was agreed in consultation with the Asian Houbara breeding center staff, who confirmed that this will minimize possibility of released birds from hitting the line] 2. Move the alignment of the external power supply lines so that they are sufficiently outside of IBAs 3. Bundle the new external power supply lines with existing ones to make both easier to see from birds. 4. Design in bird protection markers on external power supply line at key locations (i.e. near IBA) 5. Design in anti-electrocution insulators on catenary system at key locations (i.e. near IBA)	UTY, PIU-ET and Contractors	Included in Contractor budget
3	Generation of unanticipated environmental impacts	6. Ensure that environmental provisions along with EMP are included in the bidding documents and contracts for	PIU-ET EPS assisted by EWS Consultant	Included in EWS Consultant and PIU-ET budgets

	due to changes in design, layout	Contractors 7. Update IEE to be prepared with full compliance of ADB SPS; 8. Update LARP for 110kV and 220 kV as per detail design. All activities related to land acquisition and compensation payment will be completed prior commencement of construction works.		
4	Cutting down trees without permission	9. Upon completion of Project Detail conduct survey of route of construction of 110 kV and 220 kV HV lines for identification type and number of trees for cutting; 10. Obtain official permission for cutting trees from the SCEEP and conduct payment of defined compensation	Contractor together with representatives of SCEEP	Survey expenses are included in PIU-ET and Contractor budgets
5	Use of illegal quarries	11. Determine the location of the nearest licensed quarries and conclude contracts for the supply of inert materials in the prescribed manner.	Contractors	Included in contractor's budget
6	Non-compliance of goods procurement procedure with ADB SPS	12. Ensure that goods procured for project implementation will be done in compliance with ADB Prohibited Investment Activities List set forth at Appendix 5 of ADB SPS.	EWS Consultant, PIU-ET	Included in EWS Consultant and PIU-ET budgets
7	Contractor's inadequate preparation for construction works. Absence of Topic Specific EMPs	13. Development of specific guidelines for implementation as part of the SSEMPs such as; (i) spill response plan; (ii) dust management and control plan; (iii) noise management plan; (iv) Waste and Spoil Management Plan including Hazardous Waste/Materials Management Plan; (v) worker's camp site management plan; (vi) traffic management plan; (vii) prevention and control measures for biodiversity management, (viii) safety management	EWS Consultants	Included in EWS Consultant and PIU-ET budgets

		during stringing; (ix) chance find procedure, ⁵ (v) COVID-19 health and safety management plan and emergency response plan; etc. depending on the scopes and anticipated impacts.		
Construction stage				
1	Impact on air quality	<p>14. Stockpiling of soil and earthen material will be minimized by proper coordination of earthworks and excavation activities (excavation, grading, compacting, etc.);</p> <p>15. When there is visible dust being generated by vehicles and other activities, apply water sprinkling measures to reduce dust;</p> <p>16. Reduce speeds on unpaved roads and take other measures as needed to reduce emissions if intensive fugitive dust emission occurs, until water sprinkling or other mitigation measures are put in place;</p> <p>17. Vehicle speeds will be restricted on construction sites and access roads, especially inside or close to settlements;</p> <ul style="list-style-type: none"> • All construction machinery and equipment will be maintained in good working order and not left running when not in use; • No burning of any material anywhere on or near to construction sites; • Vehicles carrying aggregate material and workings will be sheeted at all times; • Observe dust levels and amount of dust settling on properties near (200 m) 	Contractors implement PIU-ET and EWS Consultant monitor implementation	Included in the Contractors budget

⁵ Ошибка! Источник ссылки не найден.

		<p>construction sites and take action to reduce dust generation if there is excessive dust on surfaces.</p> <p>A Project OHS Management Plan will ensure that Project workers are protected from dust and emission impacts, for example through requirements for the provision of dust masks when working near dust generating activities.</p>		
2	Noise and vibration	<p>18. Inform the populations of settlements located close to construction site in advance about the planned works.</p> <p>19. In the areas where construction works will be conducted close to settlements, the operation of heavy equipment shall be conducted between 7 am and 7 pm only, and be undertaken intermittently and not continuously;</p> <p>20. In case of complaints from the population, additional noise measurements will be conducted and where they exceed established standard⁶, additional mitigation actions for decreasing noise levels need to be undertaken (establishing temporary sound absorbing barriers and others);</p> <p>21. Use of Personal Protective Equipment (PPE) by workers involving in construction works in conditions of increased acceptable noise level (for situation when equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110dB(A), workers should use hearing protection equipment) is mandatory</p>	<p>Contractors implement</p> <p>PIU-ET and EWS Consultant monitor implementation</p>	<p>Included in the Contractors budget</p>

⁶ Admissible noise level into the living area, both inside and outside the buildings (SanR&N No.0267-09).

	Pollution of surface and ground water	<p>22. Construction and labor camps, including storage places for lubricant, fuel and other oils will be located 100 m away from water bodies;</p> <p>23. If the washing of equipment and vehicles is planned for the labor/construction camp sites, appropriate wastewater treatment facilities will be organized on the camp in specially designated areas. The maintenance area should be provided with oil and grease traps to prevent oil from being washed into the offsite drainage canals;</p> <p>24. Refueling, oil replacement and other repair works will be prohibited within 100 m from water streams;</p> <p>25. Removal of vegetation will be performed strictly within the acquired land plots.</p>	<p>Contractors implement</p> <p>PIU-ET and EWS Consultant monitor implementation</p>	<p>Included in the Contractors budget</p>
		<p><i>Losses of topsoil and soil contamination</i></p> <p>26. In case of necessity to open new carrier for construction materials, obtain all necessary permissions. After completion of works properly and obtain certificates on closing borrow pits;</p> <p>27. The top layer of fertile soil will be removed during construction works and stored;</p> <p>28. Land re-cultivation and restoration will be carried out after works implementation;</p>	<p>Contractors implement</p> <p>PIU-ET and EWS Consultant monitor implementation</p>	<p>Included in the Contractors budget</p>

		<p>29. After completion of construction, all temporary roads and embankments will be reinstated;</p> <p>30. To avoid soil contamination, contractors will implement good working practices in relation to the maintenance of vehicles and machinery, use, storage and handling of chemicals and management of wastes, provision of spill prevention, and control of personnel on each construction site.</p>		
	Impact on biological resources	<p><u>Impact on flora</u></p> <p>31. Ensure implementation of appropriate measures for the management of site clearance and excavation activities, and soil and waste management both along the OHL, as well as for associated infrastructure, such as worker camps, access roads etc.;</p> <p>32. Worker awareness and training sessions in relation to the protection of local flora.</p>	<p>Contractors implement</p> <p>PIU-ET and EWS Consultant monitor implementation</p>	Included in the Contractors budget
		<p><u>Impact on fauna</u></p> <p>33. The section of HL 110/35 kV Gazli-Parvoz from the geographical point N 40.213553° E 63.719490° to the point No. 007 (Ошибка! Источник ссылки не найден.), is subjected to be marked or equipped with bird tubing devices.</p> <p>34. Mark the most dangerous areas of the projected HL 110/35 kV Sarymay-Turon) on the recommended section and based</p>		

		<p>on results of baseline monitoring.</p> <p>35. Avoid rolling and connection of wires and cables in “virgin” areas with shrubs, to avoid disturbing nests of ground-nesting birds, including the Asian Houbara and White-bellied Grouse. These types of works will therefore have to be conducted in areas without bushes.</p> <p>36. Conduct all major construction works outside of the breeding season (April-June) and/or complete a nesting bird check (including ground nesting birds) prior to any ground disturbance.</p> <p>37. The construction of the temporary access roads and the distribution lines close to the breeding center should be completed outside the nesting period.</p> <p>38. Implement Good International Industry Practice (GIIP) during construction, including a ban on hunting and live capture by construction workers and awareness training</p> <p>39. To avoid killing animals unwittingly, it is necessary to conduct regular trainings for construction workers and maintenance personnel of the railway line:</p> <p>40. On the protection of the Central Asian tortoise, grey monitor lizard, boa constrictors, houbara bustard and long-tailed hedgehog;</p> <p>41. On the benefits of snakes and rules of behavior when encountering them;</p> <p>42. Hire a national biodiversity specialist as part of EWS Consultancy</p> <p>43. implement Good International Industry Practice (GIIP) during construction,</p>		
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		including a ban on hunting or live capture by construction workers and awareness training		
	Impact on land use	<p>44. All construction works will be implemented within for temporary and permanent acquired lands.</p> <p>45. Prior construction works, all compensations will paid in accordance with the LARP;</p> <p>46. Consultation with project affected people (PAPs) to ensure informed participation for all compensations and the Grievance Redress Mechanism (GRM);</p> <p>47. Establish a GRM to receive and address in a timely fashion specific concerns about compensation.</p>	Contractors implement PIU-ET and EWS Consultant monitor implementation	No cost
	Waste generation	<p>48. Responsible storage and disposal of liquid effluents, such as sewage, from temporary accommodation;</p> <p>49. Segregation, reuse and, where feasible, recycling of wastes by local recycling agencies;</p> <p>50. Collection of solid wastes from the workforce in specially designated areas, and their timely disposal;</p> <p>51. Covering solid waste containers to prevent windblown litter across and outside site;</p> <p>52. Composting of organic wastes.</p> <p>53. Hazardous wastes</p> <p>54. Avoidance of refueling on site to prevent oil spills. If this is not possible, procedures will be developed to avoid accidental spillage, such as the provision of drip trays and bunding for stores of</p>	Contractors implement PIU-ET and EWS Consultant monitor implementation	Included in the Contractors budget

		<p>fuel and waste chemicals;</p> <p>55. Appropriate handling and storage of hazardous waste for licensed collection for responsible disposal by a registered operator;</p> <p>56. Any waste fuels, oils or chemicals that may will be temporarily stored on site will be contained within solid impermeable bunding with 110% capacity of storage containers, to avoid contamination of soils and groundwater in the event of spillage / leakage.</p>		
	Impact on Socio-economic resources	<p>57. Increase public awareness among the population on the project area through communication and informing the public in advance about project works;</p> <p>58. Involve local workers in the project works where specific qualifications are not required</p>	Contractors implement PIU-ET and EWS Consultant monitor implementation	Included in the Contractors budget
	Establishment and operation of Construction camps	<p>59. Develop construction camp management plan as part of SSEMP in reference to World Bank Group's Workers' Accommodation: Processes and Standards⁷ (or part of general SSEMP) with description of waste collection and disposal procedure, set up of camp facilities (such as a storage place for construction materials and techniques if any, laundry and toilets, access roads).</p> <p>60. If washing equipment and vehicle is planning to be conducted at the labor/construction camp's site, appropriate wastewater treatment</p>	Contractors implement PIU-ET and EWS Consultant monitor implementation	Included in the Contractors budget

⁷ A guidance note by IFC and the EBRD [Workers' Accommodation: Processes and Standards \(ifc.org\)](http://www.ifc.org) (August 2009)

		<p>facilities will be organized on the camp and respective permissions on water intake and wastewater disposal need to be received by Contractor from SCEEP</p> <p>61. Provide safe and adequate living conditions for workers, such as dining rooms, toilets, shower rooms etc.</p>		
	Impact on Physical Cultural Resources	<p>62. Excavation and other works will be suspended immediately;</p> <p>63. Area with possible heritage will be fenced with fencing tape;</p> <p>64. A designated focal point from a local administration (khokimiyat) needs to be informed and invited for assessment of potential heritage and undertaken necessary actions;</p> <p>65. Civil works at the finding place will be recommenced after obtaining permission from the focal point.</p>	<p>Contractors implement PIU-ET and EWS Consultant monitor implementation</p> <p>Representative from Khokimiyat assist in assessment and undertake necessary actions</p>	Included in the Contractors budget
	Construction sites and areas used for construction camps without proper cleaning and reinstatement works	<p>66. Provide full reinstatement of the construction and camp sites by bringing them to its primary condition after completion of the main construction;</p> <p>67. Remove all rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and</p> <p>68. Restore all disrupted utilities, rehabilitate/compensate all affected structures;</p> <p>69. Check the area that previously housed the construction camp for spills of substances such as oil, paint, etc. and</p>	<p>Contractors implement PIU-ET and EWS Consultant monitor implementation</p> <p>EWS Consultant will conduct post-construction audit</p> <p>State Nature Committee accept works</p>	Included in the Contractors budget

		cleaned up as requested; 70. Conduct post-construction audit during defect liability period to make sure that construction sites and camps are properly cleaned and restored to pre-project conditions before acceptance of works before hand-over to Kokand Railway Department		
Operation phase				
	Soil pollution	Ensure that the maintenance of vehicles and machinery, the use, storage and handling of chemicals, and the management of wastes, are implemented only in designated and specially equipped areas.	National Electric Network of Uzbekistan (NENU)	Included in NENU performance
	Impact on biological resources	72. Implement integrated vegetation management (IVM). From the edge of the track area to the boundary of the right-of-way, vegetation should be structured with smaller plants near the line and larger trees further away from the line, to provide habitats for a wide variety of plants and animals; 73. Native species should be planted and invasive plant species removed; 74. Maintenance clearing in riparian areas should be avoided or minimized. 75. Conduct ongoing monitoring of the Asian Houbara population, in consultation with the breeding center. 76. Conduct ongoing monitoring of bird mortality and adjust the location of bird protection markers and anti-electrocution insulators as necessary.	UTY	Included in UTY budget
	Waste generation	77. Establish waste management system, considering possibilities for re-use of obsolete conductors and insulators or	National Electric Network of Uzbekistan	Included in NENU performance

		<p>incorporation into recyclable waste streams of authorized waste contractors.</p> <p>78. Ensure appropriate storage and disposal of surplus paints.</p>	(NENU)	
	Health and Safety Risks	<p><u>Occupation Health and Safety</u></p> <p>79. Identification of potential exposure levels in the work area, including surveys of exposure levels and establishment of safety zones;</p> <p>80. Limit access to only appropriately trained workers equipped with suitable PPE when entering safety zones;</p> <p>81. Utilization of personal monitors during work activities in high EMF zones; and</p> <p>82. Posting of safety signals and warning signs.</p> <p><u>Community Health and Safety</u></p> <p>83. Prohibit any construction within the established RoW – 20 meters for 110 kV and 25 meters for 220 kV;</p> <p>84. For farm workers who will be working the land under the OHL, information on EMF should be provided along with recommendations to reduce potential exposure, as well as on safe working practices</p>	National Electric Network of Uzbekistan (NENU)	Included in NENU performance

Table 10. EMP implementation status

<i>Item</i>	<i>EMP requirements</i>	<i>Compliance achieved (yes/no)</i>	<i>Commentary on the reasons for partial or total non-compliance</i>	<i>Necessary actions and timelines to achieve compliance</i>
		JSC «Uzelectroapparat-Electroshield»		
Stage before construction				
Generation of various potential environmental impacts due to changes in design, layout	<ul style="list-style-type: none"> An update or new IEE must be prepared in full compliance with ADB's SPS (2009). 	Yes	The design is under development, there is no difference between design and IEE yet. Thus, an update or a new IEE is not required at this time.	
Lack of proper environmental requirements	<ul style="list-style-type: none"> Ensure that environmental provisions are included along with the EMP in tender documents and contracts with contractors; Evaluation of proposals should take into account: the ability of bidders to comply with the requirements of the EMP, the proposal of an adequate budget that is effective for the implementation of the EMP, the availability of best practices in the field of environmental performance in other similar projects; After the contract award and prior to commencement of any physical works, the Contractor, under the guidance of the PIU, will develop Site Specific Environmental Management Plans (SSEMP), which will be approved by the PIU before being submitted for approval to the PIU-ET. 	Yes	Complied	<p>Environmental provisions included in the Contractor's contract:</p> <ul style="list-style-type: none"> - the Contractor must maintain an environmental protection specialist on staff, whose tasks will include the implementation and constant updating of EMPs for specific sites, as well as the preparation (monthly and quarterly) of reports on the implementation of mitigation measures throughout the contract implementation period; - after the award of the contract and before the start of any physical work, the Contractor is obliged to develop an Environmental Management Plan (hereinafter referred to as the EMP) for specific project areas and agree with the management of the PIU-ET of Uzbekistan Temir Yollari JSC; - the Contractor must conduct instrumental environmental monitoring during the contract implementation period
Use of illegal quarries	<ul style="list-style-type: none"> The selected contractor needs to determine the location of the 	Yes	In progress	In progress

<i>Item</i>	<i>EMP requirements</i>	<i>Compliance achieved (yes/no)</i>	<i>Commentary on the reasons for partial or total non-compliance</i>	<i>Necessary actions and timelines to achieve compliance</i>
		<i>JSC «Uzelectroapparat-Electroshield»</i>		
	nearest permitted (licensed) quarries and conclude contracts for the supply of inert building materials with the relevant authorities (subject to permits/licenses from the Regional Department of the Land Cadastre, the State Committee for Geology, the Ministry of Natural Resources, the Sanitary and Epidemiological Supervision Authority of the Ministry of Health).			
Illegal drilling of wells for groundwater	<ul style="list-style-type: none"> The selected contractor must have a Groundwater Well Drilling Permit for use in traction substations (Goskomgeologiya) 	Yes		
Use of illegal water	<ul style="list-style-type: none"> The selected contractor must have permission from the relevant government agency (regional department of the Ministry of Natural Resources and Ecology) before using the wells 	Yes		
Non-compliance of the purchased equipment with national requirements for equipment and machinery	<ul style="list-style-type: none"> Make sure that the purchased special equipment complies with Euro-3 standards for emissions from special equipment (certificates) 	Yes	-	
Inconsistency in Procurement Procedure for Goods ADB's SPS (2009)	<ul style="list-style-type: none"> Ensure that project goods are procured in accordance with ADB's Investment Prohibited List set out in Appendix 5 of the Safeguard Policy Statement (2009). 	Yes	-	
Wrong design of SEMP and SSEMP	<ul style="list-style-type: none"> Following the award of the contract and before commencing 	In progress	In progress	In progress

<i>Item</i>	<i>EMP requirements</i>	<i>Compliance achieved (yes/no)</i>	<i>Commentary on the reasons for partial or total non-compliance</i>	<i>Necessary actions and timelines to achieve compliance</i>
		JSC «Uzelectroapparat-Electroshield»		
	<p>any physical work, Special Environmental Management Plans (SEMPs) will be developed by the Contractors under the guidance of the PMC, which will be approved by the PMC before being sent to the PMC for approval; In addition to the SEMP, Contractors are required to prepare thematic EMPs, which must be approved by the PMC and approved by the PCU for the following activities:</p> <ul style="list-style-type: none"> • Traffic management plan for construction of distribution network within populated areas. • Waste management plan for sites where demolition of buildings and structures is planned. • Hazardous waste management plans are described in the following subsections: Construction Campus Management Plan and Occupational Health and Safety Plan (OSH Plan); 			
Inspection control	Site Survey Questionnaire for Environmental and Social Risks	Yes	Completed	A site inspection format has been developed for Contractors to optimization of the environmental control process, see Appendix 3
Construction period				
Implementation is at the design stage.				

6 FUNCTIONING OF SSEMP

6.1 SSEMP review

69. At the design stage

7 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

7.1 Good practice

70. At the design stage.

7.2 Opportunity for improvement

71. At this stage, the project does not need to be finalized.

8 SUMMARY AND RECOMMENDATIONS

8.1 Summary

72. At the design stage.
73. Prior to the start of planning and construction works, environmental control is not required. At the same time, the national environmental consultant monitors changes in the applicable legislation of the Republic of Uzbekistan in the field of environmental protection, protected natural areas, protection of soils, atmospheric air, water resources, waste management, wastewater and regulation of greenhouse gas emissions. To optimize the environmental control process, a site inspection format has been developed for Contractors (**Appendix No. 3**).
74. During the improvement of the territories adjacent to the stations, plan water-saving irrigation of green spaces in order to save water resources.

8.2 Recommendations

75. At the design stage.
76. It is recommended to monitor compliance with the environmental protection requirements of ADB and the legislation of the Republic of Uzbekistan in accordance with the Laws "On Nature Protection", "On Environmental Control" and other applicable legislation of the Republic of Uzbekistan in the field of environment and environmental monitoring during the further implementation of the project.
77. It is important that the project meets the requirements of international lending institutions. The following international standards, considered during the EIA process, apply to the project:
 - ADB Safeguard Policy Statement (June 2009);
 - ADB Operational Guidelines for the ADB Safeguard Policy Statement (March 2010);
 - GPN ADB (comment 12);
 - Guidelines for Estimating Greenhouse Gas Emissions from Asian Development Projects (Supplementary Guidelines for a Transport Project) (2016);
 - Transport Emission Estimation Model for Projects developed by Clean Air Asia in collaboration with ITDP, ADB, Cambridge Systematics and UNEP-GEF.
78. Contractors will be responsible for implementing mitigation measures. Within 30 days of contract award and prior to commencement of physical works, the contractors, under the guidance of the PMC, will develop site-specific environmental impact management action plans, and these plans will be approved by the PAC prior to submission to the PIU for approval. A site-specific EMP is a document to be prepared by contractors that describes how they plan to implement the EMP at a site and in particular how the mitigation work provided for in the EMP will be organized, the site-specific EMP is required in with respect to serious environmental issues and critical sites where sensitive receptors are located. **During the construction period, contractors are required to maintain an environmental specialist** who will be

tasked with implementing and continually updating site-specific EMPs and reporting on the implementation of mitigation measures throughout the contract period.

79. The EMP is part of the tender documentation, to ensure that mitigation actions are carried out in accordance with the requirements of the EMP, monitoring should be carried out as follows:
- Instrumental monitoring of environmental quality such as air, noise, vibration - it must be performed monthly by a certified and accredited laboratory of the Sanitary and Epidemiological Station, which is a subsidiary of UTY. Schedules, parameters, locations are specified in the Project EMP and must be approved by the Supervision Consultant.
80. Separate monitoring of migratory birds will be carried out by the national biodiversity expert. The national expert will be hired by PIU-ET on a contractual basis. The purpose of monitoring is to clarify the location of sites where bird protection devices should be installed for external power supply. The first round of monitoring will be carried out during the upcoming migration season at three locations indicated in the biodiversity assessment report. Monitoring will also be carried out during the construction phase - twice a year during the migration period. The monitoring results will be included in the semi-annual environmental monitoring report.
81. The Environmental Monitoring Plan developed under the current IEE contains detailed information on required measurements, location of measurement points, frequency and responsibilities associated with each monitoring task (**Table 11**).
82. In addition to the instrumental environmental monitoring indicated in **Table 12**, the implementation of the EMP will be monitored. For the effective implementation of these activities, it is proposed to carry out several levels of oversight activities: (i) daily inspection by the Contractor's environmental specialist, (ii) monthly inspection by the National Environmental Specialist from the Supervision Consultant's staff, and (iii) periodic inspection (quarterly) by the PIU-ET.
83. The results of contractors environmental activities, including monitoring activities, should be properly documented and reported to the PIU and the DB E&C Consultant. As stated in the EMP, the original records of the results of the required instrumental monitoring of the environment (air and water quality), as well as environmental training, should be kept in a separate file for record keeping. Also, each Contractor shall keep a log with information about the conducted occupational safety and health training for workers and another log for recording accidents during construction work.
84. It is recommended that the DB E&C Surveillance Consultant develop a site inspection format for Contractors prior to commencement of construction work to optimize the environmental control process. The format could be in the form of a checklist with a list of mitigation measures to be implemented at construction sites, their performance status and some explanation as needed. (**An environmental control inspection form has been developed, Appendix No. 3**)

Table 11: INSTRUMENTAL ENVIRONMENTAL MONITORING PLAN FOR CONTACT NETWORK AND SUBSTATIONS

Parameter to be monitored	Location	Frequency	Responsibility	Standards	Cost
Pre-construction Stage					
Dust level (PM10) NO2, SO2, CO	Residential buildings located near the construction sites of the Khazarasp and Urgench TSS	Basic monitoring immediately before construction work.	Contractor monitors. External certified laboratory performs sampling and analysis	Hygiene standards. List of maximum permissible concentrations (MPC) of pollutants in the atmospheric air of settlements of the Republic of Uzbekistan, including Appendix 1. SanPiN R.Uz. No. 0293-11	Included in the Contractor's budget
NO2, SO2, CO	Same as A: Dust level (PM10) higher	Basic monitoring immediately before construction work.	Contractor monitors. External certified laboratory performs sampling and analysis	Hygiene standards. List of maximum permissible concentrations (MPC) of pollutants in the atmospheric air of populated areas of the Republic of Uzbekistan, including SanPiN No. 0293-11 "Hygienic standards for maximum permissible concentrations (MPC) of pollutants in the atmospheric air of populated areas on the territory of Uzbekistan"	Included in the Contractor's budget
Noise level	Same as A: Dust level (PM10) higher	Basic monitoring immediately before construction work. Weekly and supplement on complaints received from the public during construction work	Contractor monitors and PE DB E&C consultant supervises the work performed	1. "Sanitary norms for the permissible noise level at construction sites" SanPiN No. 0120-012. SanPiN No. 026709 Sanitary rules and norms for ensuring the permissible noise level in a residential building, public building and on the territory of	Included in the Contractor's budget

				residential premises.	
Water quality (Suspended solids, oil residues, salinity, nitrates and nitrites)	Canals near Khazarasp (4 points) and Urgench (1 point)	Basic monitoring immediately before construction work.	External certified laboratory performs sampling and analysis	1. SanPin № 0172-04	Included in the Contractor's budget
Construction stage					
Dust level (PM10)	Same as A: Dust level (PM10) higher	Weekly and supplement on complaints received from the public during construction work	Same as A: Dust level (PM10) higher	Same as A: Dust level (PM10) higher	Included in the Contractor's budget
NO2, SO2, CO	Same as B: NO2, SO2, CO higher	Quarterly - In addition, according to complaints received from the public during construction work	Same as B: NO2, SO2, CO higher	Same as B: NO2, SO2, CO higher	Included in the Contractor's budget
Noise level	Same as C: Noise level higher	Weekly - In addition, according to complaints received from the public during construction work	Same as C: Noise level higher	Same as C: Noise level higher	Included in the Contractor's budget
Water quality (Suspended solids, oil residues, salinity, nitrates and nitrites)	Same as D higher	Monthly - In addition, according to complaints received from the public during construction work	Same as D higher	Same as D higher	Included in the Contractor's budget
Operational stage					
Noise level	Population of settlements located near the railway	First measurement after the launch of the electrified line biennially Additional measurements will be taken	Regional railway junctions	SanPiN No. 0267-09 Sanitary rules and norms for ensuring the permissible noise level in a residential building, public building and on the territory of	Expenses will be included in the budget of regional railway junctions

		based on complaints received from people about noise exposure due to the movement of electrified trains.		residential premises. With the current setting, the noise level Lmax should not exceed 3 dB of the values given in the table. 2	
Building integrity	Buildings located at a distance of 50 m from the railway	- Initial conditions - before the commissioning of the electrified railway. - annually - during the operation of the project - upon the complaint of the population	Regional railway junctions	During the first basic monitoring - document the state of integrity of the houses. Without compromising the integrity of the home	Expenses will be included in the budget of regional railway junctions
Vibration	Buildings located at a distance of 50 m from the railway	- Initial conditions - before the commissioning of the electrified railway. - quarterly - during the operation of the project - upon the complaint of the population	Regional railway junctions	SanPiN No. 0267-09 Sanitary rules and norms for ensuring the permissible level of vibration in a residential building, public building and residential premises.	The cost will be included in the BRD and URD budget. Regional junctions will attract a subsidiary laboratory of UTY.
Number of rodents along the railroad	along the railroad	Twice a year	UTY, BRD, KRD with support of RAPS, which is part of the medical service of UTY	According to internal instructions	Expenses will be included in the budget of regional railway junctions

Table 12: INSTRUMENTAL MONITORING PLAN FOR EXTERNAL POWER SUPPLY

Parameter to monitor	Location	Periodicity	Responsibility	Standarts	Expenses
Stage before construction					
Area of concentration of birds during the migration season	Power line as indicated in the biodiversity report (Parvoz, Kiyikli, Turon stations)	Once per migration period (March or September)	PIU-ET will hire a national biodiversity expert to conduct	Not applicable. The biodiversity expert will identify areas of intensive bird migration for the	Included in the Contractor's budget

			monitoring	installation of markers.	
Dust level (PM10), NO2, SO2, CO	Residential buildings located next to construction sites (5 points)	Once before construction	Contractor	Hygiene standards. List of maximum allowable concentrations (MAC) of pollutants in the atmospheric air of settlements of the Republic of Uzbekistan, including Appendix 1. SanPin R.Uz. №0179-04 (standarts - 0,5 mg / m3)	Included in the Contractor's budget
Noise level	Residential buildings located next to construction sites	Once before construction	Contractor	1. "Sanitary Norms for Permissible Noise Level at Construction Sites" SanPiN No. 0120-01 2. SanPiN No. 026709 Sanitary rules and norms for ensuring the permissible noise level in a residential building, public building and on the territory of residential premises.	Included in the Contractor's budget
Construction stage					
Dust level (PM10) NO2, SO2, CO	Residential buildings located next to construction sites	Weekly and additionally based on complaints from the population during construction work	Contractor monitors	Hygiene standards. List of maximum permissible concentrations (MPC) of pollutants in the atmospheric air of settlements of the Republic of Uzbekistan, including Appendix 1. SanPiN R.Uz. No. 0179-04 (norms - 0.5 mg / m3)	Included in the Contractor's budget

Noise level	Residential buildings located next to construction sites	Weekly and surcharge for complaints from the population during construction work	Contractor monitors	1. "Sanitary standards for the permissible noise level at construction sites" SanPiN No. 0120-01 2. SanPiN No. 026709 Sanitary rules and norms for ensuring the permissible noise level in a residential building, public building and on the territory of residential premises.	Included in the Contractor's budget
Number of accidents during construction work	All construction sites	Weekly	Contractor, PIU-ET	The target is zero. In the event of an accident, review contractors' plans for labor protection.	Included in the budgets of PIU-ET and Contractors
The area of concentration of birds during the migration period	Power line as indicated in the biodiversity report (Parvoz, Kiyikli, Jakasai, Turon stations)	In each migratory season (spring/autumn for 3 years)	Consultant will hire an EWS NBE specialist to monitor	Not applicable. The NBE EWS Specialist will identify high bird migration areas for marker placement.	Included in the Contractor's budget
Operational stage					
Records of accidents involving the death of birds and mammals	Along the power line in the areas specified in the report on biodiversity assessment	Every May and September	National electric networks of Uzbekistan	Target is zero	Will be included in the NENU budget



**O'ZBEKISTON RESPUBLIKASI EKOLOGIYA VA ATROF-MUHITNI
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ЗАКЛЮЧЕНИЕ

Государственной экологической экспертизы

По объекту: Оценка воздействия на окружающую среду строительства объектов внешнего электроснабжения проекта "Электрификация железнодорожной линии Бухара-Ургенч-Хива» ВЛ 110 и 220 кВ (Проект ЗВОС).

Заказчик: КАПИТАЛ QURILISH DIREKSIYASI AJ «УТЙ»

ИНН: 202342708

Категория: I (п. 1). ПКМ РУз №541 от 07.09.2020 г.

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копия: Комитету по экологии
и охране окружающей среды Республики
Каракалпакстан.
Управлениям по экологии
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Бухарской, Хорезмской области.

На государственную экологическую экспертизу представлены материалы первого этапа оценки воздействия на окружающую среду строительства объектов внешнего электроснабжения проекта "Электрификация железнодорожной линии Бухара-Ургенч-Хива» ВЛ 110 и 220 кВ на территории Бухарской, Хорезмской областей Республики Узбекистан и на территории Республики Каракалпакстан.

Строительство воздушных линий электропередач напряжением 110 и 220 кВ от существующих подстанций к тяговым подстанциям по внешнему электроснабжению проекта "Электрификация железнодорожной линии Бухара-Ургенч-Хива" реализуется на основании Постановления Президента Республики Узбекистан №

ПП-4563 от 09.01.2020 г. "О мерах по реализации Инвестиционной программы Республики Узбекистан на 2020-2022 годы".

Согласно принятым техническим решениям, в рамках проекта предполагается строительство следующих ВЛ:

одной двухцепной ВЛ 110 кV между существующей ПС "Караул-Базар" и проектной ТПС "Бухара". Общая протяженность трассы составляет 28,0 км. Проектируемая трасса будет проходить по Караулбазарскому, Бухарскому и Каганскому районам Бухарской области, общий отвод земель для строительства проектируемой ВЛ 110 кV составляет 33,6 га, из них в постоянное пользование – 0,14 га. 40 % трассы проходит по равнинной пустынной местности, не используемой в сельском хозяйстве;

одной одноцепной ВЛ 110 кV (Л-1) между существующей ПС "Ромитан" и проектной ТПС "Навбахор" общей протяженностью 35,0 км, из них: 2,0 км - КЛ (выход с ПС "Ромитан"), остальные 33,0 км – ВЛ и одной одноцепной ВЛ 110 кV (Л-2) между существующей ПС "Шафиркан" и ТПС "Навбахор" протяженностью 43,0 км. Проектируемые трассы будут проходить по Ромитанскому, Пешкунскому и Шафирканскому районам Бухарской области, общий отвод земель для строительства проектируемой ВЛ 110 кV составит 93,57 га, из них в постоянное пользование – 0,17 га. 90 % трассы проходит по сельскохозяйственным угодьям;

одной двухцепной ВЛ 110 кV между существующей ПС "Хамза-3" и проектной ТПС "Парвоз". Общая протяженность трассы составляет 140,0 км. Проектируемая трасса будет проходить по Алатскому, Жандарскому, Пешкунскому районам Бухарской области, общий отвод земель для строительства проектируемой ВЛ 110 кV составит 168,0 га, из них в постоянное пользование – 0,36 га. Трасса проходит по равнинной местности, 10-15 % по землям, используемым в сельском хозяйстве, остальные 85-90 % – по пустынной местности (барханы высотой около 4-8 м, закрепленные пустынными растениями и кустарниками);

одной двухцепной ВЛ 220 кV между существующей ПП "Сарымай" и проектной ТПС "Кийикли". Общая протяженность трассы составляет 87,0 км. Проектируемая трасса будет проходить по Пешкунскому, Ромитанскому районам Бухарской области, по Турткульскому району Республики Каракалпакстан и по Тупроккалинскому району Хорезмской области, общий отвод земель для строительства проектируемой ВЛ 220 кV составит 102,0 га, из них: в постоянное пользование – 0,239 га. Трасса проходит по землям, не используемым в сельском хозяйстве, в основном по пустынной местности;

двухцепной ВЛ 220 кV между существующей ПП "Сарымай" и проектной ТПС "Джакасай". Общая протяженность трассы составляет 23,0 км. Проектируемая трасса будет проходить по Турткульскому району Республики Каракалпакстан и по Тупроккалинскому району Хорезмской области, общий отвод земель для строительства проектируемой ВЛ 220 кV составляет 27,6 га, из них в постоянное пользование – 0,077 га. Трасса проходит по землям, не используемым в сельском хозяйстве, в основном по пустынной местности;

двухцепной ВЛ 110 кV между существующей ПП "Сарымай" и проектной ТПС "Турон". Общая протяженность трассы составляет 50,0 км. Проектируемая трасса будет проходить по Тупроккалинскому району Хорезмской области, общий отвод земель для строительства проектируемой ВЛ 220 кV составляет 60,0 га, из них в постоянное пользование – 0,13 га. Трасса проходит по землям, не используемым в сельском хозяйстве, в основном по пустынной местности;

двух одноцепных ВЛ 110 кV (Л-1) между существующей ПС "Хорезм" и проектной ТПС "Хазарасп" и (Л-2) между существующей ПС "Хазарасп" и проектной ТПС "Хазарасп". Общая протяженность трассы составляет 45,0 км, из них: протяженность трассы "Л-1" 43,5 км и "Л-2" около 1,5 км. Проектируемая трасса будет проходить по Ургенчскому, Ханкинскому, Багатскому, Хазараспскому районам Хорезмской области, общий отвод земель для строительства проектируемой ВЛ 110 кV составляет 83,00 га, из них в постоянное пользование – 0,18 га. Трасса проходит по землям, используемым в сельском хозяйстве.

двухцепной ВЛ 110 кV между существующей ПС "Хорезм" и проектной ТПС "Ургенч". Общая протяженность трассы составляет 1,5 км. Проектируемая трасса будет проходить по Ургенчскому району Хорезмской области, общий отвод земель для строительства проектируемой ВЛ 110 кV составит 1,8 га, из них в постоянное пользование – 0,019 га.

Отчуждение земель для проектируемой трассы ВЛ 110 и 220 кV выполнено в соответствии с КМК 2.10.08- 97 "Нормы отвода земель для электрических сетей напряжением 0,4-750 кВ".

При сооружении ВЛ предусмотрена охранный зона в виде полосы шириной 20 м в каждую сторону от крайнего провода, в пределах которой запрещается проведение любых видов строительных работ, допускаются древесно-кустарниковые посадки высотой 3-5 м при ширине эксплуатационного коридора под ВЛ в 2,5 м.

Проектом определены площади земель, отводимые в постоянное пользование под опоры ВЛ и земельные участки, предоставляемые во временное пользование на период строительства, которые определены как сумма площадей площадок для монтажа опор и полосы по трассе ВЛ. Общий отвод земель для строительства проектируемой ВЛ 110 и 220 кВ составляет 535,97 га, из них в постоянное пользование – 16,187 га (3,02 % общей площади отводимых для строительства ВЛ 110 и 220 кВ земель).

Земельные участки, предоставляемые во временное краткосрочное пользование на период строительства, по истечению срока подлежат возврату прежнему землевладельцу или землепользователю после проведения необходимых работ по рекультивации нарушенных земель. Выполнение всего комплекса работ по рекультивации, включая снятие плодородного слоя почвы и его возвращение, выполняется генеральной подрядной организацией в соответствии с проектом организации строительства и проектом производства работ. Строительные организации должны предельно сокращать время использования земель, занятых во временное пользование, строго соблюдать нормы продолжительности проведения рекультивации земель. Сроки проведения рекультивации принимаются в соответствии с графиком строительства трубопроводов и проектом организации строительства.

Проектируемая трасса ВЛ 110 и 220 кВ Бухара-Ургенч-Хива пересекает множество каналов, коллекторов, сухих саев. Ширина пересекаемых водотоков, в среднем, составляет от 10 до 50 м. Характеристики пересекаемых водотоков позволяют осуществить переход одним пролетом и исключают установку промежуточных опор в их пойменно-русловые части. Отсутствие проведения работ в пойменно-русловой части водотоков исключит воздействие на морфологию русла, грунтовые и поверхностные воды, а также на пойменные биоценозы и ихтиофауну.

Основные типы земель, по которым проходит трасса - необрабатываемые земли (степь, пустыня, богара и т.д.), в меньшей степени сельскохозяйственные угодья, занятые огородными культурами. Анализ угодий, пересекаемых проектируемой трассой, показывает, что часть пересекаемых угодий составляют обрабатываемые земли (6,59 % от общей протяженности трассы, в том числе садов - 0,6 %), на долю необрабатываемых земель (степь, богара и др.) попадает 92,81 %.

Ущерб для древесной растительности при строительстве проектируемых ВЛ 110 и 220 кВ не ожидается, вырубка деревьев по всей трассе не предусматривается. Сады и декоративные деревья в придорожных посадках, пересекаемые трассой, сохраняются.

Для исключения гибели и заболевания птиц, использующих опоры ВЛ для отдыха и сооружения гнезд, на опорах предусмотрена установка специальных отпугивающих птиц устройств в виде ершей, колючих трехстержневых трезубцев, пружинных конструкций, создающих временные вибрирующие эффекты.

Проект предусматривает строительство новых линий электропередач ВЛ 110 и 220 кВ, которые проходят по территориям (пустыня Кызылкум) Бухарской, Хорезмской областей и Республике Каракалпакстан. Намечаемые воздушные линии электропередач состоят из опорных конструкций (опор и оснований), траверс (или кронштейнов), проводов, изоляторов и сцепной арматуры. Кроме того, в состав ВЛ входят устройства, необходимые для обеспечения бесперебойной электроснабжения и нормальной работы линии: грозозащитные тросы, разрядники, заземление, а также вспомогательное оборудование.

Проектирование линий электропередач производится согласно "Правила устройства электроустановок" (ПУЭ) Республики Узбекистан. Размещение трассы на местности, пересечения с инженерными сооружениями выполнены в соответствии с действующими нормативами и согласованы с заинтересованными организациями. В качестве основного материала опор в проекте приняты сборный железобетон и металл. Промежуточные опоры приняты металлические и железобетонные. Анкерно-угловые опоры приняты металлические.

Железобетонные опоры и фундаменты под металлические опоры устанавливаются в копаные котлованы. Рытье котлованов осуществляется экскаватором с перемещением грунта бульдозером. Уплотняется грунт при обратной засыпке пневмотрамбовками вручную. Выкладка и сборка опор производится краном. Железобетонные опоры устанавливаются при помощи трактора и падающей стрелы. Раскатка проводов производится трактором из раскаточных тележек.

Для защиты птиц от поражения электрическим током, предотвращения загрязнения и перекрытия изоляции на торцах траверс промежуточных опор, а также на траверсах анкерно-угловых опор, где предусмотрена обводка шлейфа с помощью подвесной гирлянды, над каждой поддерживающей гирляндой устанавливается противоптичий заградитель.

Согласно требованиям КМК 2.01.11-96 "Защита строительных конструкций от коррозии", фундаменты опор защищаются битумной гидроизоляцией в 2 слоя по грунтовке. Для защиты от коррозии металлоконструкции опор окрашиваются краской БТ-177 по ОСТ 6-10-426-79 в два слоя по грунтовке. Гидроизоляция подземной части железобетонных стоек (на высоте до 3,5 м от кофля), фундаментов, плит и ригелей осуществляется двухслойным армированием тканью суровой АРТ-4744 на нефтябитуме по типу П. В качестве растворителя принят нефрас "С4-130/210".

Строительство будет осуществляться силами организации, выигравшей тендерные торги и имеющей опыт строительства высоковольтных линий электропередач и подстанций. Все материалы для линии электропередачи (фундаменты, плиты, ригели, металлоконструкции, провода, трос и сцепная арматура и т.д.) будут доставляться с заводов-изготовителей, фирмами-поставщиками, определенными тендером на строительство и поставку.

Все грузы везутся на трассу ВЛ и подстанции автотранспортом на приобъектные склады.

Комплекс работ по сооружению линии электропередачи состоит из этапов, выполняемых последовательно: подготовительные работы (разбивка центров опор и оси трассы ВЛ, переустройство инженерных сооружений на трассе ВЛ, развозка материалов по трассе); строительные работы (разбивка котлованов, земляные работы, устройство фундаментов и заземляющих устройств, устройство, сборка, установка, выверка и закрепление опор); монтажные работы (раскатка и соединение проводов и тросов, подъем их на опоры, натягивание и закрепление на опорах); пусконаладочные работы и сдача ВЛ в эксплуатацию.

Привнос в окружающую среду загрязняющих веществ будет происходить только в период строительства рассматриваемых объектов. Промышленные выбросы загрязняющих веществ в атмосферу при эксплуатации проектируемых систем внешнего электроснабжения, проходящих по территории Бухарской, Хорезмской областей и Республики Каракалпакстан возникать не будут.

Влияние на окружающую среду при проведении строительных работ определяется загрязнением атмосферного воздуха отработанными газами автотранспорта и строительной техники, используемых при доставке оборудования и строительных материалов и при проведении строительно-монтажных работ по сооружению опор; загрязнением атмосферного воздуха неорганической пылью при проведении земляных работ; загрязнением атмосферного воздуха сварочным аэрозолем при проведении сварочных работ; парами органических растворителей, аэрозолями красок и лаков при проведении окрасочных работ.

Всего в процессе проведения строительства ВЛ 110 и 220 кВ ожидается выброс в атмосферу 120,3541 т/год загрязняющих веществ 13 наименований.

Наибольший вклад в загрязнение атмосферного воздуха в процессе проведения строительных работ будут вносить: нефрас (91,1924 т/год, 71,61 % от общей массы выбросов), ксилол (16,4885 т/год, 12,95 % от общей массы выбросов), уайт-спирит (12,2371 т/год, 9,61 % от общей массы выбросов), оксид углерода (3,0240 т/год, 2,37 % от общей массы выбросов). Привнос остальных девяти ингредиентов составляет суммарно 3,46 % от общей массы выбросов.

Следует отметить, что выбросы пыли носят периодический характер, моделируются как неорганизованные площадные источники. Данный тип источников характеризуется незначительным периметром воздействия, так как большая часть выделяющейся пыли составлена частицами относительно крупных фракций, оседающих в непосредственной близости от источника выделения, кроме того, предполагается применение увлажнения для связывания аэрозольных пылевых частиц.

Ориентировочный расчет максимальных концентраций загрязняющих веществ в атмосферном воздухе, показал, что превышений установленных норм, за

пределами района проведения работ не будет наблюдаться ни по одному из выбрасываемых в атмосферный воздух загрязняющему веществу.

В процессе проведения работ водоснабжение будет направлено на обеспечение хозяйственно-питьевых нужд, работающих на объекте и для обеспечения технологического водопотребления – гидроразлива.

Хозяйственно-питьевые нужды будут обеспечиваться за счет привозной воды питьевого качества, технологические нужды за счет технической привозной воды.

Ориентировочное водопотребление на хозяйственно-бытовые нужды в процессе проведения работ составит 7,5 м³/сут или 2,25 тыс. м³/за период проведения работ.

Хозяйственно-бытовые стоки планируется собирать в септики, по мере накопления вывозить на ближайшие очистные сооружения.

Технологическое водопотребление ориентировочно составит 2,27 м³/сут или 0,023 тыс. м³/за период проведения работ. Стоков в результате технологического водопотребления не образуется.

До начала проведения строительства необходимо подтвердить возможность вывоза хозяйственно-бытовых сточных вод, образующихся в процессе проведения реконструкции на ближайшие очистные сооружения договором на вывоз и прием стоков.

При ведении строительных работ предполагается образование следующих видов отходов: огарки сварочных электродов 0,33 тонны (V класс); бетон 0,41 тонны (V класс); железобетон 0,54 тонны (V класс); черный металлолом 1,7 тонн (V класс); пластиковая тара из-под ЛКМ 0,09 тонн (IV класс); полимеризованные отходы краски 0,06 тонн (III класс); обтирочная ветошь с содержанием масла < 15% 1,1 тонны (IV класс); ТБО 19,54 т/год (IV класс).

Отходы от эксплуатации спецтехники и автотранспорта непосредственно на площадке не образуются. Техническое обслуживание и ремонт спецтехники, используемой при строительстве, осуществляется на базе подрядной организации.

Строительная организация-генподрядчик осуществляет сбор и временное складирование ТБО и производственных отходов, образовавшихся при проведении строительных работ, в специально обустроенных местах с последующим вывозом на утилизацию специализированным организациям, согласно договору на выполнение строительно-монтажных работ. Организация – генподрядчик несет полную ответственность за санитарно-эпидемиологическую и экологическую обстановку перед заказчиком и инспектирующими органами.

Для объектов электроснабжения характерны специфические формы воздействия на окружающую среду. К числу таких особых видов воздействия на биосферу относится воздействие электромагнитных полей и излучений. Законом Республики Узбекистан "Об охране природы" предусмотрены меры по предупреждению и устранению вредных физических воздействий, включая электромагнитные поля.

Ожидаемый уровень максимальной напряженности магнитного поля составит 7,76 А/м, что значительно ниже допустимых норм. В соответствии с гигиеническими требованиями допускается восьмичасовое пребывание персонала в магнитном поле напряженностью до 80 А/м при общем воздействии (на все тело) и до 800 А/м при локальном воздействии (на конечности). Воздействие ВЛ на окружающую среду по уровню напряженности магнитного поля в пределах нормы, мер защиты персонала и населения от магнитного поля, создаваемого проводами ВЛ, не требуется.

Согласно Санитарным нормам и правилам (СанПиН 2971-84) защита населения от воздействия электрического поля, создаваемого линиями электропередач, минимальная; граница санитарно-защитной зоны для ВЛ 110 и 220 кВ определяется в 20-25 м от крайнего провода, без средств снижения напряженности электрического поля по обе стороны от нее. В качестве предельно допустимых уровней напряженности электрического поля принимается величина 15 кВ/м (СанПиН, п. 3.1).

Аварийные риски при эксплуатации строящихся ВЛ 110 и 220 кВ связаны в основном с падением опор и обрывом проводов. Негативные воздействия на окружающую среду, в случае развития подобных аварий, многократно усилятся (при падении опоры на пересекаемые автодороги может произойти повреждение бензобака проезжающего автомобиля, которое вызовет возгорание и последующий взрыв). При этом в атмосферу поступят оксиды азота, серы, углерода. Их концентрация в радиусе до 0.1 км превысит разрешенную в несколько раз. Для предотвращения возникновения подобного рода аварийных ситуаций предусматривается защита опор ВЛ: на обочинах автомобильных дорог парапетом от наезда автотранспорта, приварка гаек к стержням болтов в узлах опоры на высоту 10 м против актов вандализма.

Для соблюдения требуемых ПУЭ габаритов на ВЛ, пересекаемых естественными и инженерными сооружениями, при необходимости предполагается использование повышения опоры. Кроме этого, для снижения аварийных рисков, учитывая специфику работы ВЛ, в соответствии с действующими Правилами устройства электроустановок, предусматривается аппаратура высокочастотной защиты и противоаварийной автоматики. Таким образом, негативные экологические последствия для окружающей среды при аварийных ситуациях на ВЛ 110 и 220 кВ устраняются применением мероприятий по усилению опор, соблюдением необходимых разрывов между ВЛ и жилой застройкой, инженерными коммуникациями, применением аппаратуры высокочастотной защиты и противоаварийной автоматики.

Экологическая экспертиза представленных материалов показала соответствие требованиям природоохранного законодательства к первому этапу оценки воздействия на окружающую среду о допустимости реализации проекта.

Государственный комитет Республики Узбекистан по экологии и охране окружающей среды **согласовывает** проект Заявления о воздействии на окружающую среду строительства объектов внешнего электроснабжения проекта "Электрификация железнодорожной линии Бухара-Ургенч-Хива» ВЛ 110 и 220 кВ.

На основании требований Приложения №2 ПКМ РУз. №541 от 11.909.2020г (Глава 3 п.23) до введения в эксплуатацию проектируемого объекта требуется направить на Государственную экологическую экспертизу ЗЭП, разработанный в соответствии с требованиями ПКМ РУз. №541 и данного заключения.

В ЗЭП необходимо представить:

- программу технической и биологической рекультивации нарушенных земель;
- договора на вывоз и прием хозяйственно-бытовых сточных вод и на вывоз и прием образующихся в процессе строительства отходов;
- акт обследования трассы ВЛ на предмет выполнения работ по рекультивации нарушенных земельных угодий, с указанием объемов произведенных работ;

выполнения подрядной организацией обязательств по вывозу и утилизации образованных в процессе строительства отходов и стоков, утвержденный Управлениями по экологии и охраны окружающей среды Бухарской и Хорезмской областей и Комитетом по экологии и охраны окружающей среды Республики Каракалпакстан.

Управлениям по экологии и охране окружающей среды Бухарской и Хорезмской областей и Комитету по экологии и охране окружающей среды Республики Каракалпакстан необходимо взять под контроль:


- осуществление технической и биологической рекультивации нарушенных земель по завершению работ;
- договора на вывоз и прием хозяйственно-бытовых сточных вод и на вывоз и прием образующихся в процессе строительства отходов;
- выполнение мероприятий по устранению возможного загрязнения почвы, грунтов и грунтовых вод при возникновении аварийной ситуации для исключения попадания нефтепродуктов в почвы и грунтовые воды.

На стадии разработки ЗЭП требуется провести обследование трассы ВЛ и прилегающих территорий на предмет реализации проектных решений и заложенных в Проекте ЗВОС природоохранных мероприятий, результаты обследования представить в форме Акта заверенного представителем управления и руководителем предприятия.

Заместитель председателя



И.Бокизов.

Ист. Жданов А.В. 
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"O'ZBEKISTON TEMIR YO'LLARI"

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"Боштранслойиха" АЖ
техник директори
Х.М. Маликовга

"Бухоро-Ургенч-Хива ва Мискен-Нукус" темир йўл линиясини электрлаштириш лойиҳаси доирасида торитиш нимастанцияси ва контакт тарمولари навбтчилик қисми бино иншоотлари қурилиши учун Хазорасп тумани Хазорасп-Боғот бекатлари оралиғи ПК356+850 Дўстлик массивининг 606-контурдаги ер майдони танланган тўғрисидаги далолатномаси маълумот ва ишда фойдаланиш учун юборилмоқда.

Илова: Далолатном – 2 варак.

Бош муҳандис

С.Р. Исаев

Ижр: Акмалхонов А.А
Тел: 4-13-62

ДАЛОЛАТНОМА

21.12.2023й

Хазорасп ет.

Бизлар ким ушбу далолатнома тузиб, имзо чекувчилар Капитал курилиш дирекцияси бошлиғи ўринбосари И.И. Мухитдинов, “Кўнгирот МТУ” УК бош муҳандиси Алламбергенов Т, Ташишларни ташкил этиш бошқармаси бош муҳандиси Мухамедов Р.М, Сигналлаштириш ва алоқа бошқармаси бош муҳандиси Раимов Ф.Ф, “Электр таъминоти бошқармаси муҳандиси” Х.Х. Умролхонов, Темир йўл участкаларини электрлаштириш лойиҳаларини амалга ошириш гуруҳи бошлиғи ўринбосари Кудабеков Ч.М, Капитал курилиш дирекцияси муҳандиси Акмалхонов А.А, Капитал курилиш дирекцияси муҳандис технологи Эгамбердиев О, Йўл хўжалиги бошқармаси бош муҳандиси О.Ж, Маматкулов, ЭЧ-9 Бош муҳандиси Жумаев М.А, ПЧ-18 бошлиғи Рахимов И, Давлат кадастрлар палатаси Хазорасп туман филиали бошлиғи Садуллаев Х, Хазорасп туман курилиш ва уй-жой коммунал хўжалиги бўлими бошлиғи Собиров Ф, Хазорасп туман кишлок хўжалиги бўлими бошлиғи Курбонов К, “Боштранслейиха” АЖ контакт тармоқларини лойиҳалаш гуруҳ бошлиғи Б.А. Мустафаев, “Боштранслейиха” АЖ контакт тармоқларини лойиҳалаш I-тоифа муҳандиси Озеров В.В, “O’ZENEROINLINERING” АЖ мутахассиси И.Р. Нурматовлар туздик, ушбу далолатнома шу ҳақдаким “Бухоро-Урганч-Хива” ва “Мискин-Нукус” темир йўл линияларини электрлаштириш” лойиҳаси доирасида Хазорасп-Боғот бекатлари оралиғида тортиш нимстанцияларининг (Тяговая подстанция) ва Контакт тармоқлари навбатчилик қисми (ДПКС) бинолари курилиши, учун ер майдонини ажратиш бўйича 2017 йил 5 октябр санасида рамиёлаштирилган далолатномага ўзгартириш киритиш юзасидан:

Хазорасп туманидаги Хазорасп-Боғот бекатлари оралиғида тортиш нимстанцияси (Тяговая подстанция) ва Контакт тармоқлари навбатчилик қисми (ДПКС) бино-иншоотларини курилиши учун танланган ер майдонлари, кишлок хўжалигига мўлжалланган 30 тага яқин дала томорқа ер участкаларида жойлашганлиги, дала томорқа ер эгалари томонидан ўзларига тегишли бўлган ер участкаларини туман захирасига қайтаришда муаммоли вазиятлар юзага келиши, суғориладиган 1,04 га ер майдонларидан мақсадли фойдаланиш яни суғориш тизимидан узилиб қолаётганлиги ва ер майдонларига агротехник тадбирларни ўтказиш учун кишлок хўжалиги техникаларини кириб чиқиши имконияти чекланиб қолишини инobatга олиб (*Гугл харита шлова қилинади*), Контакт тармоқлари навбатчилик қисми (ДПКС) ва Тортиш нимстанцияси (ТПС) бинолари курилиши учун комиссия азолари томонидан Хазорасп тумани Хазорасп-Боғот бекатлари оралиғи км356+850м Дўслик массивининг 606-контуридаги ер майдони танланди (*Гугл харита шлова қилинади*). Контакт тармоқлари навбатчилик қисми (ДПКС) ўлчамлари 102x65м, Тортиш нимстанцияси (ТПС) ўлчамлари 127x86м.

Капитал қурилиш дирекцияси бошлиғи
ўрибосари

Мухитдинов И.И.

“Қўнғирот МТУ” УК бош муҳандис

Алламбергенов Т.

Ташишларни ташкил этиш бошқармаси
бош муҳандиси

Мухамедов Р.М.

Сигналлаштириш ва алоқа бошқармаси
бош муҳандиси

Раимов Ф.Ф.

Электр таъминоти бошқармаси
муҳандиси

Умролхонов Х.Х.

Темир йўл участкаларини
электрлаштириш лойиҳаларини амалга
ошириш гуруҳи бошлиғи ўрибосари

Кудабеков Ч.М.

Капитал қурилиш дирекцияси
муҳандиси

Акмалхонов А.А.

Капитал қурилиш дирекцияси муҳандис
технологи

Эгамбердиев О

Йўл хўжалиғи бошқармаси бош
муҳандиси

Маматкулов О.Ж.

ПЧ-18 бошлиғи

Рахимов И

ЭЧ-9 Бош муҳандиси

Жумаев. М.А.

Давлат кадастрлар палатаси
Хазорасп туман филиали бошлиғи

Садуллаев Х.

Хазорасп туман қурилиш ва уй-жой
коммунал хўжалиғи бўлими бошлиғи

Собиров Ф.

Хазорасп туман қишлоқ хўжалиғи
бўлими бошлиғи

Курбонов Қ

“Боштранслейиха” АЖ контакт
тармоқларини лойиҳалаш гуруҳ
бошлиғи

Мустафаев Б.А.

“Боштранслейиха” АЖ контакт
тармоқларини лойиҳалаш I-тонфа
муҳандис

Озеров В.В.

“O'ZENEROINJINERING” АЖ
мутахассиси

Нурматов И.Р.

QUESTIONNAIRE

for site survey to identify
environmental and social risks

№	Aspects to Consider	Issues identified	Comments
1. Preparation for site survey			
1	Download and explore recent and historical satellite maps of the site in Google Maps		
2	Request the names and contacts of the responsible persons (ecologist, site manager) at the site.		
3	Request and study the required environmental documents (permits) - draft EIS (standards): - conclusions of the state environmental assessment.		
4	Request and study the required permits in the field of use of licensed quarries, as well as concluded agreements on the supply of inert documents.		
5	Request and study the appropriate permits for drilling and water use of wells for technical or drinking purposes.		
6	Required personal protective equipment (helmet, goggles, respirators, etc.)		
2. Site visit			
1	Industrial enterprises and agricultural lands adjacent to the site: indicate the types of activities		
2	Nearest residential buildings: indicate the distance from the site boundaries (in meters) -		
3	Description of the visual state of the environment near the site boundaries (underline): - locality (rural/urban) landscape (natural/anthropogenically modified); - proximity to protected natural areas (PA) (yes/no); - proximity to cultural heritage sites (yes/no); - air (clean/moderately polluted/heavily polluted); - water bodies nearby (available – name _____/absent); - cleanliness of water bodies (no particularities/moderately polluted/severely polluted); soil condition (no features/degraded/severely degraded); state of vegetation cover (not disturbed/changed/severely disturbed/absent) were there any accidents/environmental disasters (yes/no)		
4	Description of nearby infrastructure:		
5	Facility site: (activities at the site are being carried out for the first time/expansion or modernization of existing activities)		
6	Introductory briefing on environmental issues at the beginning of the site inspection: (yes/no)		
7	General condition of the site: Scattered garbage / no garbage Presence of stains (spills) of fuels and lubricants		

	<p>and other chemical substances on the soils/No stains (spills) of fuels and lubricants and other chemical substances on the soils</p> <p>Signs of felled trees/no signs of felled trees</p> <p>Dirt roads are used/improved roads are used</p> <p>Refuelling of vehicles is carried out on site / refueling of vehicles is carried out in special services outside the site</p>		
8	<p>Workers on site:</p> <p>Familiarized with environmental requirements, receive environmental instruction, keeping log/not familiar with environmental requirements, do not receive environmental instruction, not keeping a log</p> <p>Have the required personal protective equipment/Do not have the required personal protective equipment</p>		
9	<p>Special equipment on site:</p> <p>Characteristics and quantity:</p> <p>Directions:</p> <p>Storage:</p> <p>Refueling and repair:</p> <p>Technical inspection (control method):</p> <p>Vehicle washing (availability of treatment facilities):</p>		
10	<p>Measures to protect the atmosphere:</p> <p>Dust suppression:</p> <p>Use of technology:</p> <p>Shelter of warehouses:</p> <p>Unloading inert materials:</p> <p>Ventilation of working areas:</p> <p>Using a dust and gas treatment plant:</p>		
11	<p>On-site storage of hazardous explosives/toxic substances:</p> <p>Yes/no</p> <p>Yes: in specially designated areas with/without compliance with requirements (specify)</p>		
12	<p>Storage and removal of industrial waste from the site:</p> <p>Types and volume:</p>		
13	<p>On-site storage of solid waste</p>		
14	<p>Equipment of the site with toilets:</p> <p>Type of toilets:</p> <p>Compliance with sanitary standards:</p>		
15	<p>Measures to protect water and soil:</p> <p>Compliance with coastal strips and sanitary zones (if applicable):</p> <p>Organization of waste storage tanks:</p>		
16	<p>Storage and removal of domestic wastewater:</p> <p>Scope of education: _____</p> <p>Storage capacity and characteristics: _____</p> <p>Pickup schedule: _____</p> <p>Notes: _____</p>		
17	<p>Measures to protect biodiversity:</p> <p>Protection of living species:</p> <p>Tree conservation measures:</p> <p>Measures to reduce animal disturbance at night:</p>		

18	Resource saving and energy and fuel saving: - Energy savings: - Fuel savings:		
19	Emergency and fire prevention measures: Fire extinguishers, etc.		
20	Conditions of the conclusions of the state environmental assessment and environmental measures: Required and complied with/required and not complied with/not required (specify)		

**National consultant
on environmental protection**

Name and signature