Gijduvon 300MW Wind Farm
Republic of Uzbekistan

Environmental & Social Impact Assessment

Volume 3: Environmental & Social Management Plan

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Document Information

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1	Financial Capital
2	Social Capital
3	Natural Capital
4	Manufactured Capital
5	Human Capital

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LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
5 Capitals	5 Capitals Environmental and Management Consulting
ADB	Asian Development Bank
E&S	Environmental and Social
CESMP	Construction Environmental and Social Management Plan
DFI	Development Finance Institution
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
EPFIs	The Equator Principle Financial Institutions
EPs	Equator Principles
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMS	Environmental and Social Management System
GBVH	Gender-Based Violence and Harassment
GRM	Grievance Redress Mechanism
HSE	Health, Safety and Environment
HSSE	Health, Safety, Security, and Environment
IFC	International Finance Corporation
LILO	Loop In Loop Out
LLC	Limited Liability Company
LNTP	Limited Notice to Proceed
MEEPCC	Ministry of Ecology, Environmental Protection and Climate Change
MW	Mega Watt
NEGU	National Electric Networks of Uzbekistan
NTP	Full Notice to Proceed
O&M	Operation and Maintenance
OHTL	Overhead Transmission Line
PAPs	Project Affected Persons
RAP	Resettlement Action Plan
SEA	Sexual Exploitation & Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SWID	Sericulture and Wool Industry Development Committee
WF	Wind Farm
WTG	Wind Turbine Generator

1 INTRODUCTION

This document presents the Environmental & Social Management Plan (ESMP), that follows on from the ESIA developed for the Gijduvon 300 MW Wind Farm Project ("the Project").

This ESMP has been informed by the outcomes of the ESIA (Volume 2) and has been developed to establish structures for the management of Environmental and Social risks, impacts, opportunities and compliance associated with the construction and operational phases of the Project. The Framework is intended to outline systematic structures and management programmes that will comprise the respective construction, commissioning and operational phase Environmental and Social Management Systems (ESMS).

In order to implement the mitigation and management measures established in the ESIA (Volume 2), specific management programmes will be developed to incorporate these mechanisms, as well as the requirements of the national environmental regulatory authority, the Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC) and the Project Lenders. At this stage, it is understood that Asian Development Bank (ADB) and the Asian Infrastructure Investment Bank (AIIB) are the main Lenders in discussions relating to provisions of finance. The key environmental & social (E&S) requirements for ADB, AIIB as well as the International Financial Corporation (IFC) and Equator Principles Financial Institutions (EPFIs) which ACWA aligns with are further outlined in **Annex B**.

Such documented information will be in the form of a broader project specific ESMS implemented by the applicable project parties relevant to their role in the Project. This includes certain high-level policies and oversight by the Project Company, with more specific in-depth ESMS documents including the Construction Environmental and Social Management Plan (CESMP) and Operation Environmental and Social Management Plan (OESMP) (and other complimentary plans/procedures) by the EPC Contractor and NOMAC – ACWA Power's wholly owned O&M Company; to be developed prior to the commencement of construction, commissioning and operations respectively.

This ESMP has also been prepared to ensure alignment with applicable elements of the established ACWA Power E&S Policy template and related ESMS Implementation Manual, which is intended to ensure consistent and structured E&S project management between ACWA Power projects.

2 REQUIREMENTS FOR PROJECT E&S MANAGEMENT

The following applicable requirements relate to the need for the Project to implement formal or structured ESMS, or related policies, management programmes and or other E&S management processes.

These requirements are applicable during all stages of project implementation, following planning and initial permitting (i.e. construction, commissioning, operations, decommissioning and closure).

2.1 National Level

The regulatory body in Uzbekistan responsible for the regulation of the activities within the country that relate to ecology, environmental protection and use of natural resources is the MEEPCC.

The main Environmental Protection Law in Uzbekistan is the Law on Nature Protection, 1992 as amended in 2021. This law provides legal, economic, and organisational basis for the conservation of the environment and the rational use of natural resources. Article 25 of this law states that the State Environmental Expertise (SEE) is a mandatory measure for environmental protection, preceded to decision making process and the role of the SEE includes the review and approval of National EIA submissions (under MEEPCC). In addition, the law prohibits the implementation of any Project without approval from MEEPCC.

In the conclusion for the Project's National EIA Stage I Preliminary Statement of Environmental Impact, it is stated that there is a requirement for the implementation of a Project specific Environmental Protection Management Plan and the Environmental Monitoring Plan.

2.2 Lenders Requirements

ACWA Power is seeking project finance from Development Financial Institutions (DFIs) who have their own bespoke environmental & social policies/standards that relate to their investments, including project finance transactions. This includes ADB and AIIB who are expected to be involved in the financing. Each of these lenders place certain requirements on their Clients in terms of a risk-based approach to environmental & social management, as outlined below.

2.2.1 ADB

ADB Safeguard Requirements 1: Environment outlines the requirements that clients are required to meet when delivering environmental safeguards for projects supported by ADB.

Under this Safeguard, projects are required to develop an Environmental Management Plan (EMP) and will include the 'proposed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators'.

ADB Safeguard 2: Outlines the requirements that clients are required to meet in delivering involuntary resettlement safeguards to projects supported by ADB. This includes enhancement and/or restoration of the livelihoods of all displaced persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups; undertake meaningful stakeholder consultations and information disclosure; establishing a grievance mechanism; and implementation of the resettlement plan and monitoring.

The Project will comply with ADB Social Protection Strategy (2001) which is defined as the set of policies and programs designed to reduce poverty and vulnerability by promoting efficient labour markets, diminishing people's exposure to risks, and enhancing their capacity to protect themselves against hazards and interruption/loss of income.

The Social Protection Strategy spells out the scope of social protection and commitment of the ADB to develop priority interventions in five major elements:

- Labour market policies & programs designed to generate employment, improve working conditions & promote the efficient operations;
- Social insurance programs to cushion the risks associated with unemployment, ill health, disability, work-related injury & old age;
- Social assistance and welfare service programs for the vulnerable groups with inadequate means of support, including single mothers, the homeless, or physical or mentally challenged people;
- Micro and area-based schemes to address vulnerability at the community level, including micro insurance, agricultural insurance, social funds and programs to manage natural disasters; and
- Child protection to ensure the healthy and productive development of children.

At the Project level the Strategy will be applicable in the following areas:

- Compliance with the applicable national labor laws and regulations;
- Compliance with internationally recognised labour standards and requirements;
- Compliance with ILO core labour standards; and
- Ensure that appropriate actions are implemented to ensure ADB financed procurement of goods and services, contractors, sub-contractors etc are in compliance with core labour standards.

ADB's Indigenous People's Safeguard is not applicable to this Project. This is because as per the ADB's requirement on Indigenous Peoples, there are no indigenous peoples within the project area of influence. Details are provided in section 14.2.9 of the ESIA.

2.2.2 AIIB

AIIB recognizes that E&S sustainability is a fundamental for achieving outcomes consistent with its mandate to support infrastructure development and enhance interconnectivity in Asia. The objective of AIIB's ESP is to facilitate achievement of these development outcomes, through a system that integrates sound E&S management into Projects.

The AIIB Environmental and Social Framework (ESF) is a system that supports AIIB and its clients in achieving environmentally and socially sustainable development outcomes. The 2024 ESF was approved by the Board and entered into force on 26 June 2024, superseding the previous November 2022 version.

ESS1 aims to ensure the environmental and social soundness and sustainability of Projects and to support the integration of environmental and social considerations into the Project decision-making process and implementation. ESS 1 is applicable if the Project is likely to have adverse environmental risks and impacts or social risks and impacts (or both).

The scope of the environmental and social assessment and management measures are proportional to the risks and impacts of the Project. ESS1 provides for both quality environmental and social assessment and management of risks and impacts through effective mitigation and monitoring measures during the course of Project implementation. The ESS1 defines the detailed requirements of the environmental and social assessment to be carried out for any project to be financed by the Bank.

2.2.3 IFC

The IFC Performance Standards (PS) are a key component of the IFC's Sustainability Framework and directed towards clients (i.e. party responsible for implementing and operating the project that is being financed), providing guidance on how to identify risks and impacts. The IFC Performance Standards are designed to help avoid, mitigate, and manage risks and impacts throughout the life of a project as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to project-level activities.

In accordance with IFC PS1, the project will need to: 'establish and maintain an ESMS appropriate to the nature and scale of the project. The ESMS will incorporate the following elements: (i) policy; (ii) identification of risks and impacts; (iii)management programs; (iv)organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement; and (vii) monitoring and review.'

3 Environmental & Social Management System

The Project's ESMS will provide a systematic structure and approach to enable the effective implementation and management of environmental & social risks, impacts, opportunities and related compliance.

Effective management of environmental & social issues will include the following fundamental components as part of any robust ESMS:

- Project specific policies related to the environmental and social considerations (including labour, HR and external stakeholders & affected communities).
- Project-based E&S Objectives, Targets & Programme.
- Applicable environmental & social legal requirements and other compliance obligations (such as those required by lenders);
- Environmental & Social aspects and potential impacts, as early as possible for construction, commissioning and operation phase planning, including the incorporation of environmental and social considerations into staffing requirements, process plans, programming, work orders, required authorisations, and site layout;
- Environmental & Social professionals, who have the experience, competence, and training necessary to assess and manage environmental impacts and risks, and carry out specialised environmental & social management functions including the preparation of Project or activity specific plans and procedures that incorporate the technical requirements presented in this document;
- Prioritisation of management programmes/ strategies with the objective of achieving an overall reduction of risk to human wellbeing and the environment, focusing on the prevention of irreversible and / or significant impacts;
- Favouring strategies (where possible) that eliminate the cause of the impact at its source, for example, by selecting less hazardous materials or processes that avoid the need for environmental controls;
- When impact avoidance is not feasible, incorporating controls to reduce or minimise the possibility and/or magnitude of undesired consequences, for example, with the application of pollution controls to reduce the levels of emitted contaminants;
- Preparing workers, informing and co-operating with nearby communities and relevant stakeholders to respond to emergencies, accidents, including providing technical and financial resources to effectively and safely control such events, and restoring workplace and community environments; and
- Improving environmental performance (i.e. for continual improvement) through a combination of ongoing monitoring of facility performance and effective accountability.

Initial implementation of the ESMS will focus on setting and reviewing requirements, determining custodianship within the project team, identifying budgets, establishing target ranges for performance and establishing appropriate data gathering techniques and controls.

Performance ranges will be refined on a regular basis as more data becomes available, in turn enabling more accurate strategy development and benchmarking. As such, the ESMS documents will be treated as living documents, to be updated within a continuous process of improvement.

An outline implementation process for ESMS is illustrated in the figure below.

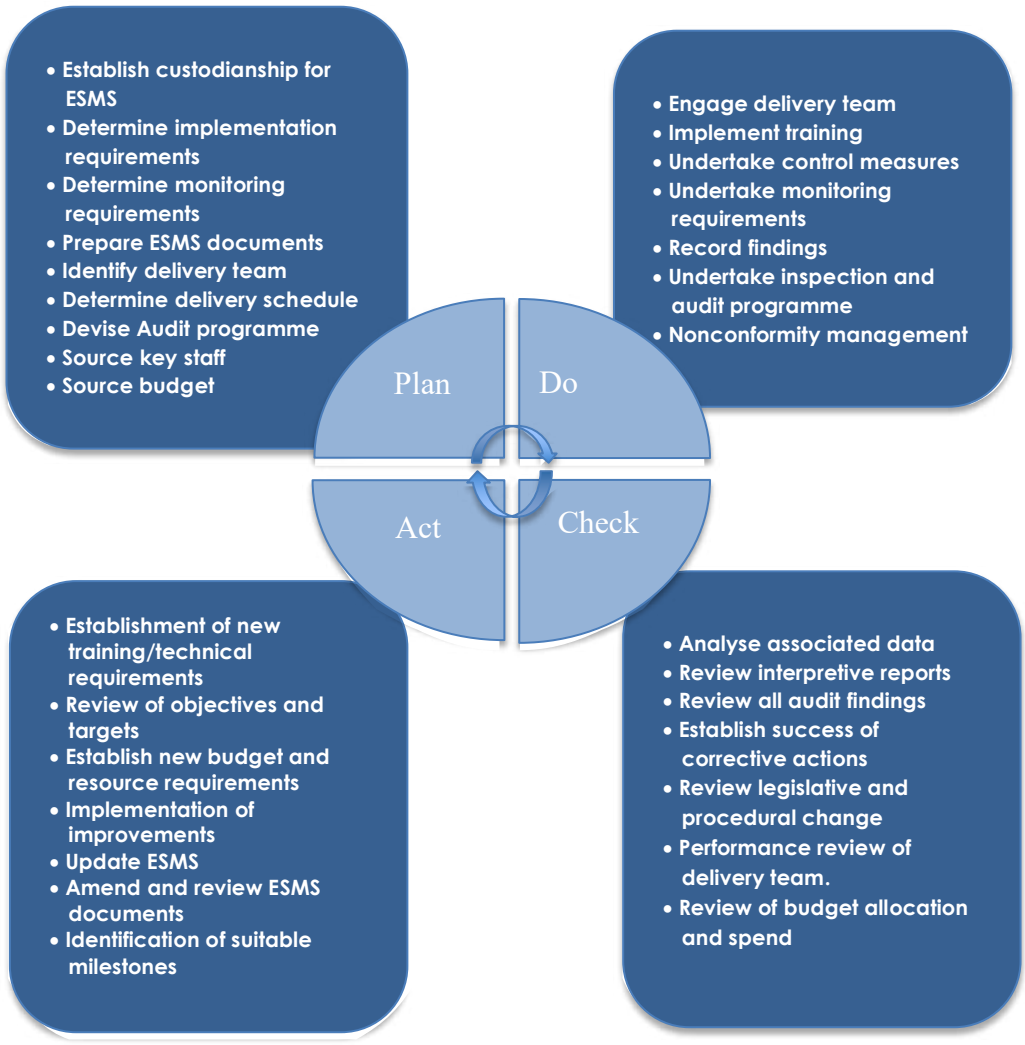

Figure 3-1 Implementation Process

3.1 ESMS Scope

The ESMS will be developed for implementation across all project phases (i.e. LNTP, construction, operations and ultimate decommissioning) and will be scaled to the risks and impacts of that phase.

The Project scope of the ESMS will include the following:

- Construction Phase
  - Construction works at all Project facilities: wind farm, AIS 33/500kV sub-station, 1.5km 500kV Overhead Transmission Line (OHTL) connecting to the Bash 500MW WF – Karakul OHTL, internal and external access roads, temporary site facilities and workers accommodation area.
- Operations Phase
  - O&M activities at the Wind Farm, substation and site administration area.

The scope will include:

- Physical elements of the project to set the boundaries of the ESMS scope (i.e. this will include the projects physical footprint and applicable associated facilities);
- Project related activities being undertaken (and relevant to that phase of the project e.g. for construction, commissioning, operation, decommissioning and if necessary, post closure);
- Compliance with applicable national regulation (applicable standards and conditions of the National EIA conclusions), lender requirements and loan covenants (including from the ESAP);
- Detailed mitigation and management measures required following construction, commissioning and operational impacts identified from the ESIA;
- Roles and responsibilities for appropriate management organisational units;
- Key risks and management requirements related to primary supply chains (which can reasonably be managed), and;
- Requirements for monitoring and reporting, including measures for inspection, audit, review and preventative action.

3.2 Project E&S Management Structures

3.2.1 Project Company E&S Policy

ACWA Power implements a template E&S Policy structure for Project Companies to ensure consistent policy development across its assets. Please refer to the 'E&S Policy' chapter for further details.

3.2.2 Project Company: ESMS Implementation Manual


ACWA POWER
ACWA Power HSSE Management System Document
Project Company
Environmental & Social Management System
Implementation Manual

Besides the aforementioned E&S Policy template, the Project Company will align its E&S management with the 'Project Company - Environmental and Social Management System: Implementation Manual'. This manual is a corporate document issued to all Project Companies.

The purpose of the document is to provide guidelines to ensure that key elements related to E&S management are implemented consistently by established ACWA Power Project Companies at the projects that are under ACWA Power ownership or partnership.

3.3 Development of Construction Phase ESMS

As the overall accountable party for E&S compliance and management, the Project Company, '"ACWA Power Gijduvon" Wind FE LLC' will develop and implement the project specific E&S Policy. Further, the Project Company will be responsible for certain other key documents and processes during LNTP and construction, including the implementation of the Resettlement Action Plan (RAP) and Stakeholder Engagement Plan (SEP).

Separate to the above and as the contractually responsible party for project delivery during the LNTP and construction phases, the majority of the construction phase ESMS will be developed and implemented by the Engineering, Procurement and Construction (EPC) Contractor. This is contractually captured in the EPC Contract. The EPC Contractor's ESMS will be required to fall under the Project Company's E&S Policy requirements.

The EPC Contractor's ESMS will ensure coverage of the potential environmental and social risks, impacts, opportunities and related compliance associated that fall under the scope of the Project's LNTP and construction phases (including potential impacts related to sub-contractor activities and key E&S risks in supply chains that can be influenced). This also includes applicable commissioning activities and post-construction activities such as site demobilisation, restoration of land used during construction etc.

3.4 Development of Operational Phase ESMS

The same E&S Policy of the Project Company will be implemented during operations as it was for construction; but maybe subject to certain updates due to the specific stage of the Project, or updates to regulation and other compliance obligations that may have changed. It is

expected that the Project Company, as the owner of the Project will also be responsible for the implementation of the majority of the SEP obligations, particularly with government and community stakeholders; although some of this may be delegated to NOMAC, the O&M Company.

The majority of the operational phase ESMS will be developed and implemented by the O&M Company and will fall under the E&S Policy established by the Project Company. This will be contractually captured in the O&M Contract.

The O&M Company's ESMS will ensure coverage of the potential environmental and social risks, impacts, opportunities and related compliance obligations that fall under the scope of the Project's operational phase (including potential impacts related to sub-contractors and/or other suppliers that can be influenced).

3.5 Decommissioning Phase

At this stage it's unclear on the respective parties that will be involved in the Project at the time of decommissioning. Hence, it is expected that at that time, the owner of the Project will ensure development of an ESMS scaled to the risks, impact and required compliance obligations of the decommission stage activities.

4 E&S POLICY

The Project Company will develop clear statements that define policy, commitments and related objectives with regard to environmental and social issues/compliance and management which are project specific.

4.1 Project Company E&S Policy

ACWA Power has a template E&S Policy structure for Project Companies to ensure consistent policy development across its assets. It is designed to align with the overarching ACWA Power corporate level policies, whilst ensuring that legal and lender requirements are captured.

The Project Company's E&S Policy will be prepared based on this template, which includes commitments to:

- Comply with relevant environmental & social, legal, contractual, financing requirements and obligations. Including applicable international treaties and protocols, national legislation, permitting conditions and lenders requirements.
- Implement a risk-based ESMS that aligns with good international practices and conforms with the IFC Performance Standards (as a minimum) and other applicable lender requirements for ESMS.
- Implement measures to manage and reduce natural resource consumption, whilst implementing specified management measures to prevent pollution that are consistent with assessment documentation, permitting and lender conditions.
- Engage with employees and stakeholders on environmental & social issues and implement a robust Grievance Redress Mechanism process for project staff and third-party stakeholders.
- Uphold, respect, protect and fulfil human rights in accordance with the International Bill of Human Rights and any other instruments of international human rights such as those relating to the rights of women and children.
- Employ staff on the basis of equal opportunities and non-discrimination, whilst adhering to the ILO Conventions stated in IFC PS2 for worker management.
- Ensure staff receive environmental & social information, training and instructions on environmental & social leadership applicable to their activities and duties.
- Not accept or tolerate GBVH/SEA/SH in any form.
- Establish processes to identify, investigate and remedy instances of GBVH/SEA/SH. whilst encouraging reporting of such instances, providing support to those involved and ensuring their dignity, respect and confidentiality.
- Set indicators to promote and assure environmental & social performance of key supply chains and service providers.

- Implement systematic feedback systems to monitor, audit and report on environmental & social management and performance.
- Annually review this environmental & social policy statement and set performance and management targets to enable continual improvement within the ESMS to be achieved.

The policy will be signed by the top management of the Project Company, displayed on site and will be circulated to Project contractors for their compliance.

4.2 Contracted Parties: E&S Policies

The EPC Contractor and O&M Company will be required to develop E&S Policies and management procedures that align with the Project Company's overarching E&S framework.

5 IDENTIFICATION OF LEGAL AND COMPLIANCE OBLIGATIONS

5.1 Identification of Legal Requirements

During the development of the ESMS, the applicable environmental and social legal requirements should be identified and documented, including:

- Applicable Uzbekistan Environmental and Social Regulation and Standards; and
- Applicable International Treaties and Conventions signed and/or ratified by Uzbekistan.

Please refer to **Annex B** for the applicable legal framework including national requirements.

5.2 Identification of ESIA Requirements

Volume 2 of the ESIA has developed Project and/or site-specific mitigation, management & monitoring measures that must be incorporated into the respective construction, commissioning and operational phase of the project.

Section 7 will include the extracted mitigation and monitoring measures from the ESIA, after the lenders' review and approval of the ESIA.

5.3 Identification of Requirements from the Statutory Authority

The 'conclusions' (or other conditional requirements) issued by the SEE (under MEEPCC) to the Project's National EIA must be reviewed to ensure that all construction (from the Stage 1 positive conclusions) and operational (at stage 3) related conditions established are managed accordingly.

Please refer to **Annex A** for the National EIA positive conclusions issued by SEE (under MEEPCC).

Non-compliance with the conclusions may result in a breach of legislation and permitting requirements. The conclusions shall be maintained as part of the ESMS.

5.4 Identification of Requirements from the Project Lenders

5.4.1 Lender E&S Standards

As outlined above, ACWA Power is seeking project finance from Development Financial Institutions (DFIs) who have their own bespoke environmental & social policies/standards that

relate to their investments, including project finance transactions. This includes ADB who is expected to be involved in the financing.

Please refer to **Annex B** for the applicable legal framework including lenders requirements.

5.4.2 Environmental & Social Action Plan

Following the E&S due diligence process, the lenders (and their advisors) will establish an E&S 'Action Plan' (ESAP) that identifies Environmental and Social requirements for the project commensurate with or supplementary to the ESIA. Requirements of the action plan will be the E&S covenant of the Project's loan agreement.

During the development of the Project's ESMS the ESAP for the Project must be reviewed to ensure that all related conditions are included for compliance management. It is highlighted that non-compliance with the lenders' requirements could impact financial disbursement and other factors.

6 IDENTIFICATION OF RISKS, IMPACTS & OPPORTUNITIES

One of the principal stages in the development of the Project's ESMS will be the development of a Project specific aspects/risks register linking to potential environmental or social impacts associated with the relevant activities being undertaken at that phase of the project.

Once environmental & social aspects and associated risks have been identified and documented (i.e. specifically in accordance with the required construction methods statements or operational activities), associated controls should be developed that are commensurate to the level of anticipated severity, likelihood and any statutory or lender requirements.

The identification of risks and impacts is expected to align with the items identified in the ESIA but may include additional items that were unforeseen or related to specific working methods; which may vary from the understanding at the time of ESIA preparation.

Hence, when the applicable project teams are identifying the aspects/risks and associated environmental or social impacts the following will be taken into account:

- Risks, impacts and opportunities linked to the Project activities;
- Change, including planned or new development and or new/modified activities;
- Abnormal conditions and reasonably foreseeable emergency situations;
- Project timescales and potential impacts associated with seasonality;
- Stakeholder perception;
- Compliance obligations;
- Risks inherent in the supply chain in addition to those on-site; and
- Linkages with the Project's Health and Safety Management System.

The identification of aspects/risks and impacts will be documented, linked to associated proposed controls and updated as and when Project or environmental & social circumstances change.

7 MITIGATION & MONITORING REQUIREMENTS

Mitigation measures are a key component of E&S Management and are designed to minimise, avoid, or offset potential negative environmental and social impacts arising from the Project's activities.

The measures are detailed in the ESIA Volume 2, following the assessment of impacts and will require implementation in practice by the Project parties responsible for construction and operations respectively.

Monitoring is required during construction, commissioning and operation to evaluate the effectiveness of the adopted mitigation approaches and to monitor whether the project is in compliance with the applicable national regulations/standards and applicable lender requirements.

7.1 Construction Phase Mitigation & Monitoring

7.1.1 Air Quality

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Dust emissions	Kuklam Village within the 50m access road AoI Herders' Livestock stables (H15 and H9-b) and livestock when grazing within the 50m access road AoI Herders' houses outside the direct AoI Herders' Livestock stables outside the AoI Fish Farm (F1 and F2) outside the AoI Wind Farm Site Workers	• Any land grading, excavations and moving of uncovered waste/materials will be undertaken during periods of low winds (e.g. <15 km/h is recommended as a threshold when a review of works is conducted). • Daily review of weather updates, to give warning of likely strong winds to assist with the management of windblown dust. • Dust generating activities will be reconsidered (or moved away or downwind of receptors) during periods of high winds conditions (≥15km/h). • Where sand, cement and other dusty materials are transported to the site, trucks will not be overloaded and will be appropriately covered / sheeted to avoid loses en-route. • Cement and other fine powders will be sealed or covered after use, stored and transported in enclosed or bunded containers. • Notice will be provided to the sensitive receptors near the site as early as possible (minimum one-week notice) if there will be activities that might generate a lot of dust. • Dusty material stockpiles (i.e., any fine sands and powders) dust generating activities (stone cutting) are to be located away from the site boundaries and be contained or covered with suitable netting to avoid dust dispersion during storage or use. • Use dust barriers (temporary installation of windbreak or shade-cloth barriers) near sensitive receptors that are within 50m road AoI and 350m construction activities AoI during activities that could result in dust generation. • Vehicle routes will be clearly demarcated and appropriate signage displayed around the site. • Internal roads inside the project site will be compacted as it reduces vehicular power consumption. • Vehicle speed on all site roads and along the access road into the site will be restricted to 20km/h. Visible signage will be installed to remind drivers of these limits particularly near sensitive receptors including Kuklam village. • Due to water scarcity in the Project area, unpaved site roads and external access roads will be well compacted such that dust will not be generated when used and thus eliminate the need for wetting down.	Visual observation for dust emissions to be undertaken daily. Monitoring shall be at active construction site and laydown/storage areas, batching plant location, access roads as well as dispersion to external receptors from point of generation. If dust is visible (considered to be excessive) and/or complaints/ grievances are received, dust meter should be used to quantitatively monitor dust. Vehicle speeds will be monitored in EPC and Sub-Contactor dedicated project vehicle by radar gun 6-times a day at random locations along access road leading to and within the Project site	E&S Manager of the EPC Contractor (Relevant sub-contractors will also need to comply with mitigation for their works)

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• Project workers will be provided with full PPE kit including dust masks, where dust is identified as a risk to workers. • No burning of wastes will be allowed on-site. • It is recommended that vehicles are cleaned when leaving site to avoid dispersion of soil on roads. Due to water scarcity at the Project site, dry cleaning will be employed for all vehicles leaving the site. • Dust suppression of the concrete batching plant to be conducted regularly using recycled/treated concrete washout to minimize dust generation. • Concrete batching plant will be located away from sensitive receptors. • Unloading of sand and other dust generating materials at the batching plant will be avoided) during periods of high winds conditions (≥15km/h). • All dust generating materials at the batching plant will be adequately covered and stored in enclosed or bunded containers • The EPC Contractor will obtain all the necessary permits related to the construction and operation of the batching plant. • Where applicable, the EPC Contractor will obtain all necessary permits required for the operation of HGV and diesel generators within emission standards.		
Gaseous emissions	Herders' houses Herders' Livestock stables Fish Farm (F1 and F2) Wind Farm Site Workers Kuklam Village	• Project workers will be provided with full PPE kit including face masks. • No burning of wastes will be allowed onsite. • Construction roads in the site will be designated and made clear to the drivers with signage for directions and speed limits placed all along the roads. • Unnecessary usage of vehicles, plant and equipment will be minimised – No unnecessary idling. • Deliveries of equipment/plant to the site will be efficiently managed to reduce the number of trips. • Exhaust fumes and particulates emitted from trucks and vehicles will be minimised by ensuring the use of good condition vehicles (e.g. compliant to vehicle emission requirements). • Lorries and trucks engines will be turned off while waiting on site to minimize gaseous emissions. Air-conditioned or heated shelters will be provided for drivers in designated waiting, loading and unloading areas to prevent drivers waiting in vehicles. • There will be pre-requisite requirements of site vehicles to ensure no black smoke before entering site and that any identified machinery or vehicles with black smoke will require maintenance and re-assessment before it is returned.	Pre-site authorisation checks on vehicle status and health, including associated emissions. Annual inspection of vehicles This is for all non-road vehicles and engines. Visual observations of emissions to be undertaken on a daily basis while vehicles & equipment are in use and annual inspection of vehicles.	E&S Manager of the EPC Contractor (Relevant sub-contractors will also need to comply with mitigation for their works)

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• Enforce a strict maintenance schedule to ensure engines operate efficiently and minimize exhaust emissions. • The grievance mechanism will be communicated will all PAPs. Complaints received from nearby communities shall trigger immediate monitoring to ensure timely investigation and resolution of the reported concerns.		
Emissions of VOCs	Receptors within 100m from source	• Hazardous materials stored and used on site with potential gas emissions (e.g. Volatile Organic Compounds) will be located in well-ventilated, but secure low-risk areas, away from major transport routes and away from the site boundary and receptors locations (where possible). • Volatile fuels and chemicals (including hazardous wastes) will be stored in sealed containers. On site storage of large quantities of volatile fuels will be avoided, equally prolonged exposure to direct sun and heat will be avoided. • Fires and material burning will not be allowed on the Project site. • Chemical storage areas will be purpose built and well maintained. A data log of all chemicals with MSDSs will be provided at the storage facility within easy access.	Daily olfactory observations for odour – as part of maintenance and inspection checks. To be undertaken at all sanitary facilities available within the laydown areas, sub-contractor camps and work fields. Daily inspection of hazardous materials storage areas for any leaks or emission of VOCs. To be undertaken at all hazardous material, chemical and fuel stores.	E&S Manager of the EPC Contractor (Relevant sub-contractors will also need to comply with mitigation for their works)
Odour from onsite sanitary facilities	Receptors within 100m from source	• Adequate and sufficient sanitary facilities for site workers must be provided in accessible locations to working areas. • Effective cleaning and maintenance of toilets is to be undertaken to avoid odour and cleaning records/inspection sheets displayed in the toilets. • All septic tanks must be sealed (with applicable vents) and fully functioning. • Septic tanks must be operated and maintained according to manufacturer recommendations. • Sanitary wastewater will be removed from site by licensed contractors and disposed in waste treatment facilities approved by the local municipality. • Where possible, all sanitary facilities and septic tanks will be sited away from receptor locations.		

7.1.2 Noise & Vibration

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Construction Site Noise	Herders' houses (located outside the 500m buffer) Herders' Livestock stables (located outside the 500m buffer) Fish Farm (F1 and F2 and fish farm area outside the Project Boundary) Kuklam Village Vahta Post Zafarobod Hydrocarbons Storage	• Where practical, additional noise barriers /attenuation will be employed to ensure that the maximum noise level at 1m distance outside of the plant fence when all equipment is running do not exceed 70dB(A) and maximum noise level at 1m from open air installations do not exceed 85dB(A). • Night-time construction works particularly near the project boundary will be avoided as much as practicable to prevent noise impact at the receptor location. Where unavoidable, night work permits (if applicable) will be obtained from the relevant authorities. • The EPC Contractor will, at all times, carry out all work in such a manner as to keep any disturbance from noise to a minimum (by phasing noisy works). • Acoustic covers on machine engines to remain closed at all times as applicable. • Where practical, electrically powered plant will be preferred to mechanically powered alternatives. • All mechanically powered plant, diesel engine vehicles and compression equipment will be fitted with noise control equipment (exhaust silencers, mufflers) as available from the manufacturer. • Where possible, the highest noise emitting activities will be undertaken in a central site area, or within an enclosed structure. For example, fabrication of materials will be carried out away from the site boundaries and or within structures. • Items of plant on site operating intermittently will be shut down in the intervening periods between use. • Dropping of metallic objects from height will be avoided as far as practicable particularly. • Notice will be provided to the sensitive receptor as early as possible (minimum one-week notice) of periods of noisier works in regards to certain construction activities and for how long such activities will be likely to last in accordance to the SEP. • The impacted receptors will have access to a grievance mechanism in accordance with the Project SEP in order to make any complaints regarding noise during the construction phase	Given the nature of the Project, construction activities will progress along with the locations of the WTGs. Monitoring will be conducted monthly at the two nearest receptors to each active construction site and along the access road. Particular attention will be given to H12-a, which, at certain construction stages, becomes one of the nearest receptors. As such, H12-a will be prioritised for monitoring once construction approaches its vicinity. Monitoring will also be carried out in case of grievances received.	E&S Manager of the EPC Contractor
	H12-a (during nighttime activities)	• Restrict the noisiest activities to daytime and evening periods where practicable and avoid nighttime working near this receptor. • If night-time works are unavoidable, programme them for as short a duration as possible and avoid continuous operations at night. • Implement work windows (e.g. no high-noise activities after a specific cut-off time).		

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• Install temporary noise barriers or acoustic screens (e.g. plywood/absorptive panels) between major noise sources and nearby receptors, especially where plant is operating in fixed locations. • Monitor noise near this receptor when nighttime activities are carried in its vicinity.		
	Livestock grazing closer to active work areas, within the noise AoI	• A 250m construction safety buffer will be implemented around the WTG construction location where grazing is not allowed throughout the construction phase. • Implement a traffic management plan for controlled movement of machinery on access roads. • Aoid sudden high-noise activities near grazing animals. • Coordinate with herders in advance of works to allow them to adjust grazing routes temporarily if required.		
Vehicular Noise at receptors near the roads	Herders' houses Herders' Livestock stables Fish Farm (F1 and F2) Kuklam Village Zafarobod Hydrocarbons Storage	• Limit unnecessary usage of vehicles/equipment – No idling – Equipment to be shut or throttled down when in intermittent use. • Delivery vehicles will be prohibited from waiting outside the site with their engines running. • Ensure any appropriate permits are in place for deliveries to the site and for any works performed outside normal working hours. • Notify residents in proximity to the access road of noisy activities or special deliveries of large equipment to be conducted nearby their dwellings with a minimum one week in advance. • Review vendor specifications and accept site plant & vehicles, in particular heavy vehicles, based on noise emissions (as far as practical). • The movement of heavy vehicles during the night will be avoided wherever practical. • Where available in country, audible reversing alarms with broadband noise (white noise) will be preferred over tone alarms (beeping), to limit external disturbance to communities. • Where construction vehicles will be operating in close proximity to the accommodation camp, the need for trucks to reverse will be minimized as far as practicable. This is so as to reduce the frequency at which disturbing but necessary reverse warnings sirens will be used. • Speed limits established in the Traffic Management Plan will be adhered to. • Complaints received from nearby communities shall trigger immediate monitoring to ensure timely investigation and resolution of the reported concerns.		
Impacts to Construction Workers	Wind Farm Site Workers	• Where noise levels exceed 80dB(A) noise protection devices will be provided to personnel on-site and the area marked as a high-noise zone where ear protection is mandatory. Note: 80dB(A) is aligned with Uzbekistan noise standards.	PPE availability and suitability	HSE Manager of the EPC Contractor

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• Operators of vibrating hand-held machinery (if any) will be provided with appropriate PPE (e.g., protective gloves and earmuffs/plugs) and be given suitable breaks from using such equipment to reduce the impacts of vibration. • Workers potentially exposed to high noise and vibration will be provided with appropriate PPE with respect to the occupational H&S risk assessment conducted for that activity. • Workers potentially exposed to high noise and vibration will be trained to identify situation when PPE is required to be worn and how to effectively utilize the PPE. • These mitigation measures will be incorporated to the applicable occupational H&S plan being developed by the EPC Contractor and implemented on-site. The OHS plan will be developed in accordance with IFC EHS Guideline in relation to OHS noise and vibration.	PPE use by workers, where required	

7.1.3 Geology, Soils & Groundwater

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Water scarcity	Water Availability	• A water supply assessment will be undertaken to assess the availability of water for the Project and if there will be significant impacts to local community users. This assessment will also include cumulative impacts of other proposed development projects that may also depend on similar water sources and the potential impacts of climate change. This will be carried out in close coordination with the State Committee of Geology and Mineral Resources. • All groundwater use will remain subject to the same staged regulatory permitting process, including hydrogeological assessment, drilling approval, testing, and abstraction permitting, to ensure continued compliance and protection of groundwater resources. The EPC Contractor will obtain the permits from the State Committee of Geology and Mineral Resources and the Bukhara Hydrogeological Station. • Groundwater abstraction will be managed to remain within the applicable annual limits defined by the relevant permits, with abstraction rates monitored and controlled throughout the construction period. • Where short-term or peak construction demands cannot be met within permitted abstraction limits, water will be supplemented through authorised external supply sources, such as licensed water suppliers, in accordance with regulatory requirements.	Completion and submission of the water supply assessment. Availability and validity of water well drilling permit before any drilling works. Availability and validity of water abstraction permit. Water consumption remains within the permitted abstraction limits. This will be monitored monthly through the water meters and project document control records.	E&S Manager of the EPC Contractor
Risk to water channels	Channels' Water Flow and Quality	If bridges upgrade for site access is required, the EPC Contractor is required to implement the following: • Obtain the relevant permits for these activities. • Implement sediment barriers (e.g., silt fences, sediment basins) to prevent runoff and erosion from construction areas. • Schedule construction during low-flow periods to reduce disruption to water movement. • Limit in-water construction activities and use temporary diversion structures to maintain flow. • Use controlled excavation and backfilling techniques to minimize sediment release. • Avoid the use of hazardous construction materials near waterways and implement spill prevention measures.	Availability and validity of bridge upgrade permits. Incidental sitings of visible spills & leaks of hydrocarbons and other potentially hazardous or chemical pollution sources during day-to-day activities and as part of weekly inspections at the water channels. Grievances submitted by water channel users (e.g., herders).	E&S Manager of the EPC Contractor (Relevant sub-contractors will also need to comply with mitigation for their works)

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• Design and construct culverts or upgraded bridges to ensure uninterrupted water flow and sufficient load capacity for local users. • Coordinate closely with local authorities and communities to schedule construction to minimize disruptions to access and water use. • Third parties (herders, farmers etc.) will have access to a grievance mechanism in order to raise their concerns.		
Cross contamination of soil during construction	Soil Quality	• Training - Contractor staff to be able to identify signs of potential contamination (smell of hydrocarbons, staining). • Washing of equipment, machinery and vehicles will only be permitted in designated areas, with impermeable surfaces and dedicated drainage systems that lead to separate sumps or, treatment facilities and/or lined evaporation ponds. • Washout of concrete trucks will be performed in designated concrete washout areas at the site. Where concrete washout areas will be established onsite, these areas will be located away from water channels storm drainage and water runoff areas and will be designed with adequate holding capacity. The wastewater will be contained within the designated impervious bund. • If contaminated soils are observed during construction activity, the identified contaminated soil will be excavated separately and stored or disposed of in accordance with the waste management plan as hazardous waste, to avoid cross-contamination. • Any imported soils brought to the site will be from accredited quarries with certificate of quality	Incidental sitings of visible spills & leaks of hydrocarbons and other potentially hazardous or chemical pollution sources during day-to-day activities and as part of weekly inspections at working areas, temporary facilities and along the access roads	E&S Manager of the EPC Contractor (Relevant sub-contractors will also need to comply with mitigation for their works)
Pollution from Accidental Leaks or Spillage	Soil Quality Surface Water Quality Groundwater Quality	• No storage of hazardous chemicals, oils or fuels within 100m of water channels or water flow path at the Project site. • Storage of all hazardous materials such as fuels and chemicals on an impermeable base with liners and/or secondary containment bund with enough capacity to hold 110% of the bulk storage container and 25% of the total volume of the multiple containers. • Store all chemicals/materials according to manufacturer's instructions and MSDS; MSDSs for all chemicals to be readily available on-site in close proximity to storage areas. • All hazardous materials must be labelled according to manufacturer's instruction and Good International Industry Practice (GIIP).		

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• The chemical storage area will have proper ventilation and cover from the elements (i.e. rain, sun) and different storage areas to allow for segregation of incompatible chemicals. • All equipment using oils will have drip trays underneath to capture any oil leaks or drips. • Contractor will develop and implement an Emergency Response Plan (ERP) and Spill Response and Contingency. • Maintain an inventory of all potentially hazardous materials and chemicals used and stored on-site. • All spills and leaks will be reported promptly to the Construction Manager and to be investigated to confirm the cause and put in place appropriate corrective/preventative actions. • Refuelling and maintenance of vehicles/equipment will be within a dedicated depot area at the site, on impermeable surface. • No vehicle or machinery maintenance or repair will be carried out outside the Project boundary. • Spill kits will be made available at chemical storage areas and fully stocked with appropriate absorbent materials. • Availability of suitable containment and spill clean-up materials/equipment at specific locations within the project site (e.g. where refuelling is to take place). • Relevant personnel to be trained on emergency and spill response, containment, material handling and storage procedures. • Regular emergency drills to practice timely and effective spill response. • Fuel transport vehicles and equipment to be maintained and routinely inspected to ensure the tank, pumps, pipe work and the vehicle itself are free from leaks and fit for purpose-No equipment will be placed in service until deficiencies are corrected. • Implement regular maintenance program of vehicles and equipment to minimise leaks or mechanical failures and keep document evidence. • The EPC Contractor will obtain relevant permits to store large quantities of hazardous materials such as diesel etc (where necessary) in accordance with Uzbek regulations. • First aid kits will be available at all hazardous and chemical storage areas.		

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Inadequate waste and wastewater management	Soil Quality Surface Water Quality Groundwater Quality	• The implementation of the project CESMP and associated Waste Management Plan and Procedures will ensure that spills are kept to a minimum and are cleaned up quickly using spill kits located in risk areas. • Develop and maintain a hazardous waste inventory to document and track and show chain of custody of hazardous wastes generated, and their disposal route. • All hazardous waste being temporarily stored outside of its designated storage areas will be kept in well-equipped, leak-tight containers with drip protection to avoid leaks to the ground. • Concrete washout will only be undertaken at designated and signed areas, with adequate protection to soils, to prevent leaks or spread of wastewater • Implementation of good housekeeping practices during construction activities including procedures and requirements for proper handling, storage, and transport of hazardous materials and waste. • The EPC Contractor and sub-contractors will provide induction training and Tool Box Talks (TBTs) relating to the management, transportation and handling of hazardous materials and wastes – in line with any procedures developed to guide the on-site management of such activities. • Further mitigation is presented in section 7.2.7..		
Flood risk	Project	• The natural slope of the area should not be impacted due to the project design. • Implement the drainage management measures provided in the geotechnical study (UzAssystem, 2024a). These include: o Install a concrete drainage channel on top and on foot of permanent excavations to prevent infiltration of surface run-off into ground in the vicinity of slope face and its toe. o All earth retaining walls should involve sufficient drainage systems that will prevent rising of water columns behind the walls. o A permanent shallow drainage system is required in order to move the surface run-off water (from rainfall) away from the location of foundations. • Implement the drainage management measures provided in the flood risk study (UzAssystem, 2024c). These include: o Filling the ponding areas in the northern part of the site and directing water from the low-slope regions into the channels. o Drainage mitigation should be implemented along the water canals.	Flood incidents and the effectiveness of the drainage management through general visual inspections during and after heavy rainfall events. This will be carried out at active work areas, laydown areas, offices, accommodation facilities, and internal/project roads	HSE Manager of the EPC Contractor (Relevant sub-contractors will also need to comply with mitigation for their works)

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		○ Mitigation against water leaking from buried pipes near to foundations should be considered in the design of infrastructure. ○ Consider ground improvement (moisture conditioning and recompaction) techniques where needed to pre-stabilize soils in flood-prone areas, ensuring settlement occurs before construction and reducing the risk of collapse after saturation.		

7.1.3.1 Blasting

At this stage of the Project, it is unclear whether blasting works will be required. If yes, the following mitigation measures will be implemented:

Stakeholder Notification:

- The EPC HSE/E&S team compiles a list of nearby herders, farmers and industrial operators in coordination with ACWA's E&S department.
- Formal blasting notification letters will be sent at least 48 hours in advance, detailing the date, time, and safety perimeter of the upcoming blast.
- Records of all stakeholder notifications are retained by the EPC E&S team (template letter and tracking record).

Public Warning Measures:

- On the day of blasting, safety boundary signage and flagmen are deployed at all access points to the 1 km exclusion zone.
- Sirens and radio communications are used to signal the initiation of the blasting countdown.
- Emergency contact information is posted in visible locations around the site.

Complaint and Feedback Channel:

- Grievances related to blasting are logged, investigated, and responded to within 48 hours.

- All feedback records are documented in the grievance Log, maintained by the E&S team.

Coordination with Authorities:

- Blasting schedules are shared in advance with local authorities and government, environmental offices, and security forces.
- The EPC Company supports ACWA in implementing the SEP for broader communication with external parties.

If blasting is required, a blasting protocol to minimize impacts on potentially affected biodiversity shall be developed.

7.1.4 Terrestrial Ecology & Avifauna

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Habitat Loss	<u>Project Area Habitats:</u> Sandy and sabulous-loamy desert plain Fixed and semi-fixed sands Saline lands Fallow lands and farmsteads	• The EPC contractor's suitably qualified and experienced ecologist/botanist to undertake pre-clearance survey of temporary and permanent construction areas and habitat quality assessment as per the Pre-clearance Survey Protocol_v1.3. Where possible flora should be left in situ unless within clearance footprint. The EPC contractor's suitably qualified and experienced ecologist/botanist will undertake seed collection and relocation programs (where relevant) for Tulipa lehmanniana, Calligonum zakirovii, Eremostachys eriolarynx and Climacoptera amblyostegia prior to site clearance based on the Project's Flora Conservation Plan • The EPC Contractor commit to restoration of habitat post-construction via removal of invasive species (if any) and seeding, re-planting, and landscaping with native, high-value species, in unused land areas that are not required for operation and maintenance. Prior to site clearance, the EPC suitably qualified and experienced ecologist/botanist, supervised by the PC Ecologist, will undertake a comparison of sample plots within and adjacent to the WTG areas. This will provide reference for future restoration. • The Habitat Restoration Plan will be developed outlining the measures for rehabilitation of temporarily disturbed areas, including soil stabilization, re-vegetation with native species, monitoring of restoration success, etc. The Plan will also specify timing, responsible parties, etc. • Temporary construction areas (labor camp, laydown areas and construction buffer) that are classified as natural habitats will be restored based on the Project's Habitat Restoration Plan	Day-to-day observations that works are within the designated areas and not affecting external habitats. Monitor seed collection and relocation programs (where relevant) of the mentioned species ***Note:*** *Monitoring requirements would be stated in the Biodiversity Management Plan with a Biodiversity Monitoring and Evaluation Programme* *Monitoring in relation to CH trigger species will be stated int eh BAP.*	The EPC Contractor will contract a suitably qualified and experienced ecologist/botanist to oversee all aspects of monitoring and mitigation relating to ground disturbance of habitats. Supervision by the PC Ecologist (Relevant sub-contractors will also need to comply with mitigation for their works)
Biodiversity Loss due to earthwork clearing / excavation	<u>Flora</u> Threatened Species - *Tulipa lehmanniana* Nationally Threatened and Protected Species - *Caligonium zakirovii, Eremostachys eriolarynx* Other Least Concern Species	• Pre-construction survey to carry out in-situ signage and protection where possible; • The EPC contractor's suitably qualified and experienced ecologist/botanist will oversee seed-collection of threatened and protected flora during peak season (chiefly Spring, however *Climacoptera amblyostegia* may only appear in Autumn); • Post-construction restoration via seeding, re-planting, and landscaping with native, high-value species based on the Project's Habitat Restoration Plan.		
	<u>Fauna</u> Threatened Herptiles Species - Central Asian Tortoise	• Minimization of the built footprint in design, minimise the construction buffer zone and limit construction to the delineated construction zones	Day-to-day on-going observations in regard to potential	

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
	Nationally Important Herptiles Species - Desert Monitor Non-threatened Herptiles Species - Geckos, Lizards and Snakes incl. Reticulate racerunner, Toad-headed agama, Steppe agama and - Steppe Ribbon Racer Nationally Threatened Mammals Species - Brandt's hedgehog Non-threatened Mammals species - Wild Boar, Tolai Hare, Hedgehog - Long-eared Hedgehog, Yellow Ground Squirrel, Severtzov's Jerboa and Small Five-toed Jerboa	• Full-time Ecologist as part of EPC contractor team to be on site throughout all construction works from the time of LNTP, inclusive of all early site preparation works, and throughout the entirety of the construction period; • The EPC Contractor ecologist, to conduct a pre-construction survey for the Central Asian Tortoise (Refer Pre-clearance Survey Protocol and Tortoise Relocation Plan) during the species active season (March–May and September–October), and relocation of individuals in consultation and agreement with the Institute of Zoology to determine whether they are relocated to another site or placed in a temporary holding facility until construction is complete; • The EPC must coordinate early site preparation works within delineated construction zones in a staggered manner to facilitate successful self-dispersion of mobile fauna; • Chance Find Procedure has been included within the CESMP to provide general guidance on potential ecological triggers for work stoppage and will be implemented by the Ecologist and EPC contractor team. For all other species such as other herptiles and small mammals, a Chance-Find Procedure with individual relocations as deemed necessary may be sufficient.	chance finds of stated species. Monitor Pre-construction survey and relocation of Central Asian Tortoise ***Note:*** *Specific monitoring in relation to CH trigger species will be stated int eh BAP.*	
Biodiversity Loss due to vehicular collision	<u>All Fauna & Avifauna</u>	• Strict speed controls (25km/h on access roads) which will be enforced by EPC HSE and Security teams, especially during the active period (March–May and September–October) for the Central Asian Tortoise; • Ban against driving outside of delineated access roads and restricting driving and machinery operation to daylight hours; • The CESMP will include protocol for removal of any road-kill carcasses immediately upon observation to at least 5-10 meters away from the access roads during the construction phase by the EPC contractor. • Preparation of a traffic and transportation Control/Management Plan as part of the supplementary plans to the CESMP;	Day-to-day on-going observations. Vehicle speeds will be monitored by GPS in EPC and Sub-Contactor dedicated project vehicle as well as by radar gun 6-times a day at random locations.	
Biodiversity Loss due to "Take" poaching, hunting and gathering	<u>Flora</u> Threatened Species - *Tulipa lehmanniana, Caligonium zakirovii, Eremostachys eriolarynx, Climacoptera amblyostegia* Other Flora <u>All Fauna & Avifauna</u>	• Strict controls forbidding the gathering, poaching or otherwise disturbance of any flora or fauna on site, included in induction training. • Zero tolerance of poaching, hunting and illegal take with enforcement of 'One-strike-out' policy. • Staff training such as toolbox talks on the importance of ecosystem integrity, especially focused on species of importance such as Central Asian Tortoise.	Recording of training and tool-box-talk records.	

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Biodiversity Loss due to Littering	All Fauna & Avifauna	• Preparation of a Waste Management Plan as one of the supplementary plans to the CESMP; • Training will be provided to staff such as toolbox meetings which include waste management and the effects of littering; • Strict waste management supervision and controls under the HSE Team; • Zero tolerance for littering on site; • Daily inspections and clean-up of litter by EPC/sub-contractor(s) responsible.	Day-to-day on-going observations ***Note:*** *As per air waste monitoring section*	
Disturbance	All Fauna & Avifauna	• Minimize construction footprint buffer zones and temporary laydown areas. • Minimize duration of construction period avoiding most sensitive months/ seasons (e.g., breeding season) where possible. o Western Marsh Harrier breeds from March (nest site selection) to September (when fledglings leave the nest) • The EPC contractor will commit to restoration of habitat post-construction via removal of invasive species (if any) and seeding, re-planting, and landscaping with native, high-value species, in unused land areas that are not required for operation and maintenance. • If blasting is required, a blasting protocol to minimize impacts on potentially affected biodiversity shall be developed. This plan will be developed by the PC Ecologist and added as an annex in the CESMP.		
Biodiversity Displacement	All Fauna & Avifauna	• Pre-construction survey will be conducted within footprint areas to identify the location of any breeding activities of priority birds/raptors. The detailed protocol will be provided in Project's Nest Protection Plan. • Development of a solid waste management strategy; • Where possible, limiting construction activities to one locality at a time to minimise disturbance, which should already have been implemented in construction phase; • Preparation of a Waste Management Plan as one of the supplementary plans to the CESMP; • Strict waste management supervision and controls under the HSE Team; • Zero tolerance for littering on site; • Training will be provided to staff such as toolbox meetings which include waste management; • Daily inspections and clean-up of litter by EPC/sub-contractor(s) responsible;		

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• No provision of food waste or encouragement of feral cats and dogs.		
Introduction of Invasive Pathogens	Threatened Flora Species - *Tulipa lehmanniana* Nationally Threatened and Protected Flora Species - *Caligonium zakirovii, Eremostachys eriolarynx* Least concern Flora species	• Topsoil should be removed from disturbed areas, properly stored and be replaced as part of the habitat restoration process. • Soil imports should be minimized/avoided if possible. • Where required, soil imports will be taken from local quarry or borrow pit as close to the site as reasonably practical to avoid risk of foreign seeds and invasive species. • Soil imports from outside of the area will undergo checks to prevent accidental introduction of exotic species / pathogens. • Plant and machinery will require an HSE certificate of inspection, issued by the EPC, before coming onto site and this will include necessary cleaning /washing to reduce risks of importing invasive species in mud taken from urban sites. • The EPC contractor will commit to removal of invasive species (if any) during restoration of habitat post-construction in unused land areas that are not required for operation and maintenance. • Develop and implement a biosecurity control plan.	Monitor removal of invasive species (if any within the project footprint) Vehicle/ plant monitoring before being allowed on-site.	
Air Quality	<u>All Flora, Fauna & Avifauna</u>	• Refer to air quality control measures. • Preparation of an Air Quality and Dust Control/Management Plans as part of the supplementary plans to the CESMP; • All tracks will be damped down to reduce risk of dust and this will be checked daily.	***Note:*** *As per air quality monitoring section*	

Noise	<u>All Fauna & Avifauna</u>	• Refer to noise control measures.
		• Preparation of a Noise Control/Management Plan as part of the supplementary plans to the CESMP;
		• Avoid exceptionally disturbing works such as blasting and drilling, if applicable, during sensitive ecological periods (breeding seasons, etc.). Baseline surveys suggest that the period from late winter through summer was the most active breeding period for many sensitive species at the site.
		  ○ 1 breeding pair of Western Marsh Harrier was recorded in the project site during the surveys in months of April and May 2024.
		  ○ 1 active nest of Egyptian Vulture recorded just beyond the 5km buffer in April 2024.
		  ○ The Central Asian Tortoise was recorded across the project footprint are most active and breeding, and therefore at their most sensitive, between March and May.
			Note: *As per noise & vibration monitoring section*	

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• If blasting is required, a blasting protocol to minimize impacts on potentially affected biodiversity shall be developed. This plan will be developed by the PC Ecologist and added as an annex in the CESMP.		
Light Pollution	All Fauna & Avifauna	• Ensure any work conducted between dusk and dawn, that requires artificial light, is essential. • Minimize external lighting as much as possible, only using minimal amounts as required for Health and Safety. • Ensure lighting is fit for purpose and duration of lighting to be controlled and minimized as much as possible. • Lights will be shielded and faced into the site to prevent light spill and glare onto adjacent habitat. • Consider use of light sources with minimal ultraviolet and blue light wavelengths – favoring white light with neutral to warm colours. Low-intensity UV lighting will be used to reduce impacts. • Preparation of a Lighting Control/Management Plan as part of the supplementary plans to the CESMP; • Night-time activities will be avoided as much as possible and only undertaken when essential, such as during turbine installation when wind conditions are more favourable at night. Any required night works will be temporary and infrequent. Lighting will be low-intensity and properly shielded to avoid light spill. Night-time operations will be monitored (e.g., checking for grounded birds), and if notable impacts are observed, all night-time work will be halted. • External security lights will be fitted with Passive Infrared (PIR) motion sensors so that they activate only when movement is detected. These lights will be set to switch off automatically after five minutes of no activity.	***Note:*** *As per landscape & visual monitoring section*	
Contamination (from spills/leaks)	All Flora, Fauna & Avifauna	• Refer to hazardous materials control measures, emergency action plan and spill prevention and clean up measures.	***Note:*** *As per Soils, Geology & Groundwater monitoring section*	
Soil Impacts	All Habitats, Flora, Herptiles and mammals	• Minimize construction footprint and strict controls to prevent driving out of designated corridors. • Develop and implement a soil erosion management plan. • Habitat restoration post-construction inclusive of topsoil replacement or soil tilling where deemed necessary to promote regrowth.		
OHTL design measures	Birds	The following OHTL collision and electrocution mitigation strategy and procedure should be contained in a OHTL installation and monitoring plan. This will give details of the devices to be used how they will be installed, timelines for installation, and a	Ensure design align with these requirements	EPC Contractor design team

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		monitoring program to ensure that devices remain on the lines and in effective working order. **Collision Measures:** • The EPC Contractor is responsible for providing construction power supply and arranging connections to public utilities, whether for temporary or permanent use, as required. The final construction phase power supply scheme has not yet been confirmed and will need to be agreed with the EPC Contractor. • ACWA has advised that, should the EPC Contractor utilise a temporary power line, they will be required to mitigate associated collision and electrocution risks. This would include the installation of BFDs, with GIIP standard approved design, agreed by a wind wildlife expert, anti-electrocution devices, and the preparation and implementation of a PCFM programme for the duration of use. • Removing the thin neutral or earth (shield) wire above the high voltage transmission lines where feasible, and where this is not possible, marking the line to make it more visible; • Bundling high voltage wires, and using spacers to increase visibility; • Minimising the vertical spread of power lines. Having lines in a horizontal plane reduces collision risk; • Select and install Bird Flight Diverters (BFDs) in accordance with Good International Industry Practice (GIIP) within two weeks of line stringing to increase line visibility by thickening the appearance of the line; or using markers that are moveable, of contrasting colours (e.g. black and white), contrast with the background, protrude above and below the line, and be placed 5-10 m apart. Luminescent and night-visible BFDs will be used where intrinsic to the approved product design (e.g. GIIP-compliant models such as HawkEye diverters); BFD model should be approved by lenders; • The BFD model selected will be proven for durability under project-specific environmental conditions, having been tested and demonstrated to perform reliably in comparable arid and high-exposure environments. Selection will avoid BFD models with known performance failures in the region **Electrocution Measures:** • Ensure a safe design of the cross arm and related equipment (separate energized conductors and grounded hardware distances by more than largest species wingspan);		Supervision by PC

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Use suspended insulators and avoid pin and dead-end/strain insulators; • Ensure safe distance (more than the largest species wingspan) between suspended conductor/jumper wire and lower branch in the cross arm; • In the configurations with high electrocution risk (derivations, tap, transformer and switch poles and its connected grounded wires and jumpers) all grounded elements should be insulated, and grounded wires and jumpers should be sheathed wires; and • Design should be as per recommendations provided in Reference Note: Quick Guidance for Preventing Electrocution Impacts on Birds, Initiated by International Association for Falconry and Conservation of Birds of Prey or IUCN Guidance - Martín Martín, J., J. R. Garrido López, H. Clavero Sousa and V. Barrios, Eds. (2022). Wildlife and power lines. Guidelines for preventing and mitigating wildlife mortality associated with electricity distribution networks. Gland, Switzerland: IUCN.		

Applicable reporting and management plans:

- **Design alternatives**, wherein other design options are proposed for avoidance or reduction in environmental impacts.
- **Pre-Construction/Pre-Clearance** mitigation requirements that are relevant to the pre-construction phase of the project wherein construction site layout is designed, relocation surveys are undertaken and the construction phase environmental and social management plan is prepared.
- **Construction mitigation** wherein restrictions are made on construction methods for reduction of environmental impacts as prescribed by the **Construction Environment and Social Management Plan (CESMP)**. This could include Site Layout, Lighting Strategy, Phasing Plan, Chance Find Procedure etc. Checklists, Inspections, Monitoring, Reporting and Auditing form the compliance mechanism.
- Development of the **Biodiversity Management Plan (BMP),** one for the LNTP & construction phases of the project which details the biodiversity-related mitigation, management and monitoring commitments as well as the assigned roles and responsibilities of the relevant implementing party. This will include the flora and fauna relocation measures, Habitat Restoration Plan, Ecological Chance Find Procedure, etc. The PCFM program will be implemented for a duration of minimum 3 years for the wind farm and the OHTL. Further monitoring beyond this time periods will be based on PCFM results and continuing level of collision risk. PCFM will be aligned with the Good Practice Handbook and Decision Support Tool (IFC, EBRD, KfW 2023).

- Development of **Biodiversity Action Plan (BAP)** for achieving net gain and no net loss, including offset measures for the CH trigger species. The BAP will also cover Significant Biodiversity Values (SBV) identified by the CHA.
- Development of the **Biodiversity Monitoring and Evaluation Programme (BMEP)** for construction which will demonstrate firstly compliance with biodiversity commitments and secondly effectiveness of the mitigation in achieving desired outcomes through integration of Lender agreed adaptive management.

7.1.4.1 Design

The following outline the mitigation requirements during design phase:

- Integration of design mitigation into WTG design related lighting design and specifications, and exclusion of roosting and perching opportunities.
- Development of OHTL Mitigation Design Options (for electrocution & collision risk reduction).

7.1.4.2 Pre-Construction

The following outline the mitigation requirements pre-construction:

- Review of Construction Methodology
  - Delineation of construction footprint
  - Site clearance methodology
  - Timing and method of emissions-generating works
  - Lighting Strategy in accordance with Dark Skies Guidance
- Review of Solid Waste Management Strategy
- Preparation and implementation of standalone construction Biodiversity Management Plan with a Biodiversity Monitoring and Evaluation Programme, inclusive of:
  - Pre-construction survey (including breeding bird and bat roost surveys and flora survey habitat assessment) and relocation of Central Asian Tortoise

  - Habitat Restoration Plan
  - Reptile Relocation Plan
  - Flora Conservation Plan
  - Ecological Chance Find Procedure
  - Post-Construction Fatality Monitoring Plan (PCFM)
- Preparation of Biodiversity Action Plan (BAP)
- Preparation of an OHTL mitigation and monitoring plan that describes types of mitigation BFD, anti-electrocution measures, installation protocol, timelines for installation and post installation quality control monitoring protocol for installed devices to ensure that devices remain on the lines and in effective working order.
- Preparation of CESMP, inclusive of:
  - General Site Controls
  - Solid Waste Control Plan
  - Chance Find Procedure
  - Biosecurity Control Plan
  - Dust Control Plan
  - Air Quality Control Plan
  - Noise Control Plan
  - Lighting Control Plan
  - Vibration Control Plan
  - Hazardous Materials Control Plan
  - Emergency Action Plan
  - Spill Prevention and Clean-up Procedures
  - Traffic and transportation management plan

7.1.4.3 Construction

The following outline the mitigation requirements during construction:

- The EPC will employ a full-time site-based Ecologist to ensure that ecology related measures are carried out in full.
- Implementation of the construction Biodiversity Management Plan with a Biodiversity Monitoring and Evaluation Programme, inclusive of:
  - Ecological Chance Find Procedure
  - Action plan for NNL
  - Adaptive Management Strategy
- Preparation and Implementation of CESMP including:
  - Daily Checklist
  - Weekly Inspection
  - Monthly Reporting
  - Quarterly Auditing

7.1.5 Landscape & Visual Impacts

Potential Impact	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Changes in Landscape Character	Undeveloped Desert Landscape **(LCA 1)** Water Bodies Landscape **(LCA 2)** Developed Areas **(LCA 3)** Agricultural Areas **(LCA 4)**	• Site clearance, levelling & grading will be limited to the footprint of the WTG pads. • Construction works will be limited to within the Project boundary. • All temporary construction facilities will be removed upon completion of construction activities.	Visual inspection to ensure works are confined within the footprint. Visual inspection to confirm removal of temporary facilities after construction completion.	EPC Contractor E&S Manager (Relevant sub-contractors will also need to comply with mitigation for their works)
Disturbance to Visual Envelope of Receptors and addition of lighting	Herders' houses Fish Farm (F1 and F2 and fish farm area outside the Project Boundary) Kuklam Village Zafarobod Hydrocarbons Storage Navoiuran Fuel Warehouse Post of Asia Trans Gas Agricultural area (outside the Project Boundary) Graves	• Where appropriate, construction laydowns and working areas of the site will be screened to reduce the visual intrusion to existing off site receptors. • When not in use, cranes and other construction plant will be lowered, so they are at their minimum height and do not protrude unnecessarily within the visual envelope of local receptors. • Good housekeeping will be implemented to reduce landscape and visual impacts relating to wastes and litter. • Mitigation and management measures relating to the generation of dust (as detailed in the Air Quality Chapter of this ESIA) will be implemented to minimise visual impacts during construction activities. • Minimise construction works at night-time to those strictly required and approved by the relevant authorities through issuance of night permits. • Night-time activities will be avoided as much as possible and only undertaken when essential, such as during turbine installation when wind conditions are more favourable at night. Any required night works will be temporary and infrequent. Lighting will be low-intensity and properly shielded to avoid light spill. Night-time operations will be monitored and if notable impacts are observed, all night-time work will be halted. • No lights will be installed facing any of the receptor locations including the access roads in the project area. • Where lighting is needed in worker compounds, site offices, or similar areas, it will be fully shielded and directed downward to minimise glare and light spill.	Record and review night works, ensuring permits are in place prior to the activities. Visual inspection to confirm the absence of light spill during night-time activities and during routine site inspections ***Note:*** *additional monitoring as per Air Quality and Waste management sections*	

Potential Impact	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• Low-intensity UV lighting will also be used to further reduce potential impacts. • External security lights will be fitted with Passive Infrared motion sensors so that they activate only when movement is detected. These lights will be set to switch off automatically after five minutes of no activity.		

7.1.6 Solid Waste & Wastewater Management

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Inappropriate handling, storage, transport and disposal of solid non-hazardous waste	Receptors are not specified, but include ecology, air quality, soil & groundwater quality, visual amenity to humans and impacts to waste management facilities	• The project will develop and implement a Project specific Waste Management Plan in line with committed mitigation measures in this ESIA report and the provisions of the CESMP. • Domestic solid wastes to be segregated and identified from the other waste streams into separate waste containers/skips clearly to facilitate recycling and reuse. • Waste containers/skips will be clearly labelled and placed in designated waste storage locations. Labels will be waterproof, securely attached, and written in English and other languages (such as Uzbek and Russian) as required for the workforce. • For litter (food waste, domestic waste), an adequate number of covered bins will be strategically placed throughout the site at locations where construction workers and staff consume food. These will be regularly collected and taken to the main waste storage area. • Food waste must be stored within a sealed metal or plastic skip or bin, in order to prevent pests gaining access. • On-going housekeeping training will be provided to all staff on the importance of the need to avoid littering. • Heavy waste may be contained within an open skip, provided that segregation occurs effectively enough to remove all lightweight material that could be blown away. • Waste generated during construction will be recycled and reused until reduced to as low as practicable prior to collection for disposal by an appropriately licensed waste contractor. • Obtain the required permits from the Navoi Regional Department of the Waste Management and Circular Economy Development Agency. • Only licensed waste transporters and waste management facilities will be engaged. • Develop and maintain a waste inventory to document and track domestic solid wastes generated, segregated, reused and consignments	Day-to-day on-going observations of handling and storage of waste materials as per mitigation requirements. Availability and validity of the required waste generation, storage and management permits from the Navoi Regional Department of the Waste Management and Circular Economy Development Agency. Ensuring engaged waste management contractors, their vehicles and waste management facilities have applicable registrations/licenses at the time of contracting and ensuring valid copies	EPC Contractor's E&S Manager (Relevant sub-contractors will also need to comply with mitigation for their works)

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Completed waste manifests are required to show the chain of custody of the waste generated on site, its transportation and treatment/disposal. All records will be maintained on site. • Mandatory training program for employees to increase their awareness of waste management protocols including proper handling and storage of waste, recycling waste, reusing plastics, rebar, wood & other reusable non-hazardous materials. • EPC Contractor will identify recycling companies in Gijduvon district or Bukhara region in order to promote the recycling of waste especially packaging materials, wood and metal waste etc.	are maintained at the site. All waste transfer notes shall be maintained. Availability and validity of the required wastewater generation and management permits from the State Environmental Expertise Centre of the Ministry of Ecology, Environmental Protection and Climate Change through its Bukhara Regional Branch.	
Inappropriate/ uncontrolled handling, storage, transport and/or disposal of solid hazardous waste		• Obtain the required permits from the Navoi Regional Department of the Waste Management and Circular Economy Development Agency. • Only licensed hazardous waste transporters and waste management facilities will be engaged. • Develop and maintain a hazardous waste inventory to document and track hazardous wastes generated, segregated, reused and consignments. • Segregate and identify hazardous waste from the other waste streams into separate signed and labelled waste containers/skips. • Store hazardous waste in allocated impervious hard standing areas in sealed containers stored with impermeable bases, sufficient containment and separation capacity, sun/rain shelter, separate drainage system, good ventilation and equipped with spill kits & spill response procedures. This area must be placed away from any sources of ignition. • Hazardous waste storage area will be constructed away from drainage system and a rain shelter will be provided to avoid any potential instance of runoff, or leakage of runoff. • Waste containers will be clearly marked with appropriate warning labels to accurately describe their contents and detailed safety precautions. Labels will be waterproof, securely attached, and written in English and other languages as required for the workforce (such as Uzbek and Russian). Wherever possible, chemicals will be kept in their original container. • Hazardous waste storage areas will be located away from any ignition sources or fire hazards. • Used face masks will be stored in designated bins and disposed of as medical waste.		

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Inappropriate/ uncontrolled handling, storage, transport and/or disposal of sanitary wastewater		• Contractor to develop and implement a Project Specific Waste Management Plan in accordance with committed mitigations measures in this ESIA report and provisions of the CESMP. • Develop and maintain a hazardous waste inventory to document and track sanitary waste generated and segregated. • Sanitary wastewater tanks will be placed in allocated impervious hard standing areas with bonding capacity to hold 110% volume of the maximum volume stored. • Sanitary wastewater tanks to be properly maintained and inspected to ensure tanks do not overflow. • Site inspections will be carried out regularly by the EPC contractor to ensure that all wastewater generated is properly managed, and no leakages or spill occur. In the event of a spill or overflow, immediate action will be taken in accordance with spill containment procedures and clean up procedures (to be developed in line with the CESMP). • Engage a licensed waste contractor for the periodic removal of septic tanks. • In common with the IFC EHS Guidelines, effort will be made in training construction personnel to minimise water consumption for ablutions and to ensure an understanding of water resource and wastewater issues.		
Inappropriate handling and disposal of contaminated soil from clearing and excavation works causing cross-contamination of soils		• In-situ testing of soil to ensure it is not contaminated and can be re-used or disposed into land. • Training –Contractor staff to be able to identify signs of potential contamination (smell of HC, staining). • If contamination is found, develop and implement a Contaminated Soil Management Plan for appropriate handling, treatment and disposal of soil.		
Inappropriate handling of concrete washout		• Concrete washout will only be undertaken in designated and signed areas to prevent leaks or spread of wastewater. • The concrete washout area will be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations. • The concrete washout area will have an impermeable surface with dedicated drainage systems that lead to separate sumps or treatment facility. • The removal of any sludge residues as solid hazardous waste will be undertaken by a licensed waste contractor and handled as a hazardous waste.		

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Medical Waste		• Any generated medical waste (i.e. form on-site clinics) will be stored in appropriate medical waste containers. • All medical waste will only be handled by trained personnel. • Removal of any medical waste from the site for appropriate treatment, disposal/incineration will only be conducted by a licensed contractor.		
Unavailability of Waste Management Facilities	Existing waste management infrastructure	• In addition to the MSK facility that ACWA identified as a potentially suitable waste management handling facility, the EPC Contractor shall assess local wastewater treatment plants and waste management facilities proposed for construction-related and hazardous waste disposal and only use facilities that are legally licensed and operated to standards that safeguard human health and the environment. • If suitably compliant facilities with adequate capacity are not available, the EPC Contractor shall implement enhanced on-site waste management measures, including segregation at source, maximising recyclable recovery and sale (if possible), and maintaining detailed records of all waste streams and quantities generated. • The EPC Contractor shall also identify, as early as practicable and prior to the peak construction period, alternative waste facilities acceptable to the Lenders. Based on Lenders' experience from similar projects, facilities with comparatively better capacity (e.g., DXSH Aholitrans in Bukhara) may be considered, subject to verification of licensing and operational standards.	Verification of the suitability and capacity of the authorised waste management facilities to receive and manage project generated waste. Prior to commencement of operations and periodically thereafter (e.g. annually or when waste streams or contractors change).	EPC Contractor E&S Manager

7.1.7 Traffic & Transportation

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Impact on Road Infrastructure	Highway A379 and the access road to the Project site, crossing the railway	• A separate study will be conducted to assess the need for upgrading the access road, especially from the railway crossing to the site, as well as the bridges over the water channels, to ensure they can accommodate heavy vehicles and the transportation of large equipment and WTG parts. • The Project will ensure close coordination with the Port authorities in order to obtain relevant permits for storage of Project materials/equipment and vehicle access to the port. • All necessary permits required for the modification/upgrading of the road infrastructure, transportation of oversized equipment/materials and electricity shutdown etc. will be obtained from relevant Kazakhstan and Uzbekistan authorities. • Transportation of materials over railroad crossing must be organised according to the train schedule and coordinated with relevant authorities as required by law. • Final road condition of the selected transportation route will be checked before transportation of any oversized loads to determine that the required improvements have been put in place. • Where transportation of equipment/materials is to be undertaken during the winter season or on wet or windy periods, additional safety and precaution measures will be implemented in order to ensure the safety of other road users and integrity of the road infrastructure and materials being transported. • Ensure that any equipment/materials transported across the Kazakhstan-Uzbekistan border meet all the legal requirements including those relating to customs. • The Project Company will ensure that the EPC Contractor post construction route surveys (especially for local roads) in order to establish their condition. Based on the outcome of the post construction route survey, the EPC Contractor will rehabilitate any roads and local access routes that have been damaged as a result of project traffic. This will include obtaining relevant approvals/permits to undertake such works.	Record keeping in case of vehicle accidents or incidents, including police reports. Record keeping of incidents involving livestock and wildlife will also be recorded. Vehicle speeds will be monitored by GPS in EPC and Sub-Contactor dedicated project vehicle as well as by radar gun 6-times a day at random locations. Record of traffic/transportation related grievances received, response period, close-outs, as per the GRM. Proof of awareness campaigns conducted by the EPC Contractor with local communities on road safety	EPC Contractor's HSE/E&S Manager Project CLO for communication with the communities, herders, facilities etc. (Relevant sub-contractors will also need to comply with mitigation for their works)
Increased vehicle flow on highway and local roads	Users of Highway A379 and access road to the Project site	• A Traffic & Transportation Management Plan will be developed by the EPC Contractor. The plan will be prepared in accordance with IFC General EHS Guideline, outline how turbine components will be delivered to the site and outline how construction traffic will be managed to limit impacts upon local communities, personnel, and other road users. • Maintain close coordination with Navoi Uran throughout the pre-construction and construction phases to manage transport activities.		
Safety of Residents of	Residents of nearby villages			

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
nearby villages & herders	and herders (near the WF and along the access road) including children and vulnerable groups	• The plan will include information on the designated access routes, site entrance points, speed limits, waiting, parking areas and map out accident and traffic hotspots for project access vehicles etc. • The local police and other relevant authorities will be consulted during the development of the Traffic & Transportation Management Plan; • The Project CLO will undertake awareness campaigns with schools, kindergartens and within the community to create awareness on potential risks associated with movement of vehicles and machinery and basic safety precautions they can take. • The Project Company will ensure that the EPC Contractor has undertaken road safety campaigns especially targeting vulnerable groups in impacted communities including children, illiterate community members and the elderly so they are aware of potential risks involved with the increased traffic and movement of machinery as a result of the Project and safety measures in place. • Construction access road into the site will be clearly signposted. • Buses will be used to transport labourers and carpooling among staff encouraged (social distancing due to COVID-19 will be considered). • Route directions and speeds limit will be placed along the access road into the project site in relevant local languages i.e., Kazakh, Uzbek etc • Deliveries of construction materials will be coordinated to reduce congestion on local roads and to reduce the waiting time for the drivers. • Where applicable the EPC Contractor will obtain the relevant permits to transport heavy loads into the project site and adhere to the stipulated conditions (i.e. delivery routes and timings). • Where applicable, the EPC Contractor will notify the local communities on delivery of wide/heavy loads and how it could potentially impact their road use. • Road closures and diversions as a result of project component transportation will be kept to a minimum and wherever practicable peak transportation hours must be avoided to reduce impacts on commuters & road user. • Oversize & heavy load vehicle's drivers will be competent and legally authorised to operate such vehicles in the Uzbekistan and across borders where applicable. • The EPC Contractor will provide awareness training on traffic safety to the local people in collaboration with local police office. • All traffic incidents and near misses will be recorded and investigated with any necessary corrective actions taken including reporting to local police.	Proof of delivery schedule being shared by the EPC Contractor with the communities near the access road (Kuklam village), herders/farmers in the project area as well as nearby facilities (Navoi Uran etc.). This should be completed before the delivery of project materials/equipment and thereafter if there is a considerable change to the delivery schedule. Proof that pre/post construction road (including local access roads and railway crossing) surveys were undertaken and that rehabilitation of any roads damaged as a result of the Project has been undertaken. All records of applicable transportation related permits and	EPC Contractor Permitting team

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• A grievance mechanism will be established to allow local communities to make complaints relating to Project drivers. • Compensation of any livestock injured by Project vehicles will be conducted in coordination with community leaders and local officials. • Project drivers will not be permitted to transport any unauthorised personnel or goods.	the validity and renewal of permits & licenses shall be maintained on-site. These include but are not limited to: - port authorities for storage and vehicle access - transport-related permits (road upgrades, oversized loads, hazardous materials, night deliveries etc.)	
Loss of access routes/tracks through the Project site	Residents of nearby villages and herders (near the Project and along the access road)	• The existing vehicle tracks that will not be used for project access, will remain unimpacted by the Project and will continue to be available for use by the PAPs and other road users. Project activities will not encroach on any land or access routes outside the Project boundary. • Project activities will not encroach on any land or access routes outside the Project boundary.	Periodic inspections throughout construction of the condition and accessibility of existing vehicle tracks not designated for project use and utilised by herders Grievances received from herders regarding tracks/lands accessibility or safety issues	EPC Contractor's HSE Manager (Relevant sub-contractors will also need to comply with mitigation for their works)
Risks associated with the Project access road	Railway and railway crossing users	• In coordination with the railway authority, assess the need for upgrading the railway crossing to ensure they can safely accommodate heavy vehicles and the transportation of large equipment and WTG parts.	All records of applicable railway authority related permits and the validity and renewal	EPC Contractor Permitting team

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
crossing the railway		• Visual alerts should be strategically placed to ensure visibility from a distance. • Develop a delivery and transport schedule, coordinating with the railway authority to avoid peak train hours. Traffic controllers should be deployed to manage vehicle flow during critical times. • Provide specialized training for construction vehicle drivers on railway crossing protocols. Awareness programs should focus on railway safety measures, speed limits, and response actions in case of emergencies. • Set and enforce low speed limits for vehicles approaching the railway crossing to prevent potential collisions. • Create and train all relevant personnel on an emergency response plan to manage incidents at the crossing efficiently. The plan should include communication channels, evacuation protocols, and designated emergency response teams. • Establish clear communication protocols with railway operators to notify them of construction activities and ensure both parties have up-to-date schedules and emergency contacts.	of permits & licenses shall be maintained on-site. Proof of delivery schedule being coordinated with the railway authority. This should be completed before the delivery of project materials/equipment and thereafter if there is a considerable change to the delivery schedule.	EPC Contractor with Supervision by Project Company

7.1.8 Archaeology & Cultural Heritage

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Impact to existing archaeology and/cultural items	Known items of cultural or archaeological significance Unknown items of cultural or archaeological significance	**Design:** • The siting of WTGs, cable routes, roads and other associated infrastructure and temporary construction facilities will avoid archaeological sites identified during the surveys; and take into consideration the required buffer zones as set by the Cultural Heritage Agency. • The design Team will also consider that additional archaeological sites may potentially be discovered during the construction phase which may require further change in the siting of some facilities. **Construction:** • An archaeological 'Chance Find Procedure' will be developed prior to construction and the start of site and access road earthworks, as part of the CESMP. This will include protocols and procedures to stop work and methods preserve potential finds, as well as reporting requirements and co-ordination with the Institute of Archaeology, National Centre of Archaeology and the Cultural Heritage Agency. • A Cultural Management Plan will be developed to include locations and procedures to ensure protection of these archaeological sites. • An archaeologist from the Cultural heritage Agency will be present to supervise the works. • The EPC and sub-contractors will receive induction training on the importance of the cultural heritage and archaeology of the Project area from an archaeologist from the Institute of Archaeology before any site mobilisation work can start. Workers will also receive tool-box talks before the start of site clearance or excavation works. • The Project workforce will be instructed not to interact, disturb or vandalise any sites of archaeological or cultural importance. • Sites of archaeological or cultural importance will be clearly demarcated, fenced (if approval to fence is obtained from National Centre of Archaeology) and have appropriate signage in place. • An archaeological watching brief will be implemented throughout the construction phase.	Daily continued visual observations by site staff involved in excavations and the archaeologist on site of the following: • Archaeological sites within the project site as identified by the Institute of Archaeology during the site surveys. • Archaeological buffer zones to ensure compliance. • The Project area requiring excavations, earthworks or grading during construction.	Designated Archaeologist (from Institute of Archaeology) EPC Contractor' E&S Manager (Relevant sub-contractors will also need to comply with mitigation for their works) All workers

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Construction works and movement of equipment/machinery will be within the designated areas and unauthorised work, movement or storage of equipment/materials outside the Project site is strictly prohibited. • Any damage to archaeological sites (known or unknown) will be recorded (including photos) and reported to the Cultural Heritage Agency and Institute of Archaeology immediately. • The Project Company and EPC Contractor will adhere to any additional requirements or mitigation measures required by the Institute of Archaeology, National Centre of Archaeology and the Cultural Heritage Agency.		
Impact on Graves	Graves	• All drivers will be notified of the Graves sites and its location during induction including its importance. • Install clear markings along the road to notify drivers about the Graves. • Include the Graves into the drivers' training program (highlight the location of the Graves, width clearance available near it, measures to be taken in case it got affected etc.) • If required, the relocation of the Graves will be conducted through consultation in coordination and agreement with the relevant local authorities and family members of the deceased. • Any complaints regarding the status of the Graves will be addressed in accordance with SEP requirements.	Resolution of any complaints received regarding the memorial site, upon receipt of a complaint and during follow-up on implemented resolution measures Monthly visual inspection of the site	EPC Contractor's E&S Manager
Impact on intangible and tangible cultural heritage	Communities who practice the elements of Palov & Nawrouz, Art of Miniature & Bakshi art and visit the Malikajdar (Xazonur bobo) burial place	• The workers Code of Conduct will include measures regarding respect of beliefs, customs, rituals of local communities. • Interaction between the workers and the local communities will be kept to a minimum in order to avoid misunderstandings or conflict. • The EPC Contractor will demonstrate that all efforts have been put in place to recruit workers from local communities and Bukhara region i.e., advertising job opportunities locally, using local registered employment agencies etc.	Resolution of any complaints received, upon receipt of a complaint and during follow-up on implemented resolution measures	EPC Contractor's E&S Manager

7.1.9 Socio-economics

Refer to the project specific RAP for impacts and the relevant mitigation measures and livelihood restoration program relating to land use change.

POTENTIAL IMPACT	RECEPTOR	MITIGATION AND MANAGEMENT MEASURES	MONITORING	RESPONSIBILITY
Employment Opportunities	Employment Market	• Local employment/recruitment management plan will be prepared and implemented. This plan will include clear targets for employment under EPC and sub-contractors. • Contractor will seek to employ local workers where possible including women. This will be done in consultation with the local administration and Makhalla leaders in the communities near the Project site. • The EPC Contractor will give priority to the local people while employing unskilled and semiskilled labor forces from the Project area. • The EPC and Sub-Contractors HR Policy will be prepared to ensure consistency in line with local labour laws and international ILO and UN conventions. The EPC Contractor is to ensure that this is applied as an overarching policy for all sub-contractor company HR policy as part of their contractual arrangements. • EPC Contractor to undertake local community consultation during recruitment process in order to consider equitable job opportunity distribution among the locals to avoid conflict between the local people • The EPC Contractor will provide equal employment opportunities to women and preferences will be given to local women for unskilled and semi-skilled labour positions.	Number of persons employed from the villages near the Project site	Project Company EPC Contractor's E&S Manager (Relevant sub-contractors will also need to comply with mitigation for their works)
Training and dissemination of construction skills	Welfare of Local Population	• All Project workers will receive induction training at the Project, as well as vocational specific training for on-site construction works. • All workers will receive training in regard to health and safety, as well as environmental and social awareness. • Toolbox talks will be conducted before work on each day to ensure workers are reminded of key topics. • Cultural awareness training for all foreign workers and those coming from other regions in Uzbekistan.	All job-specific training records will be maintained.	EPC Contractor's E&S Manager (Relevant sub-contractors will also need to comply with mitigation for their works)
Purchase of construction materials and	Local/Regional Economy	• EPC Contractor will purchase goods and materials from the local/regional economy where possible.	All grievance records from external parties	EPC Contractor's E&S Manager

Potential Impact	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
food resources locally		• The EPC Contractor will purchase some of the food products such as meat, milk from the suppliers. • EPC Contractor will ensure that the influx in workers does not lead to an increase in retail prices of basic commodities by providing the workers with food or giving them transportation to larger towns where they can buy food and non-food items. • Establish market network between the Project workers and the local people where possible in consultation with the community leaders. • Water supply to the Project site will not be sourced from the village springs/wells, local ponds or water channels, or from Lake Ayakagitma, (unless a license is obtained to draw water from the lake).	to be maintained as per the GRM	(Relevant sub-contractors will also need to comply with mitigation for their works) Project Company (for external party GRM)
Consumption of water	Water resources	• A water supply assessment will be undertaken by the EPC Contractor to assess availability of water prior to establishing boreholes and abstracting water from the site. • The EPC Contractor will obtain water abstraction permits before drilling any wells/boreholes at the project site. • EPC Contractor will obtain relevant permits and engage a licensed water tanker trucks for the supply of potable water. • Prior to engaging a licensed potable water supply company, the EPC Contractor will determine the source of the water to be used for the project. • Where water is sourced from the same water supplier that nearby villagers use, the EPC Contractor will undertake water sustainability assessment to ensure that the projects water demand does not create a shortage to local communities or drive up the price of water. • If the water is sourced from the pump station at the village, the EPC Contractor will engage with local authorities and obtain relevant permits to ensure that it does not create a shortage to the villagers. • The use of water from the pump station at the village will be within the quantities stipulated in the permit. • The Project workers will be trained on ways to minimise water consumption and to ensure they have an understanding of water resources and resource efficiency. • The EPC Contractor will have a grievance mechanism in place that will allow villagers to lodge their complaints or concerns regarding any water issues related to the Project. • Water storage tanks, pipes, taps etc. will be inspected for leakage and repaired immediately once identified.	Maintain licenses of water delivery companies (if applicable). Maintain records of groundwater consumption, third party deliveries (if applicable) and water quality reports. Water abstraction permits	EPC Contractor's E&S Manager EPC Contractor's E&S Manager EPC Contractor's Permitting team

Potential Impact	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• Where feasible, wastewater generated at the batching plant will be recycled and reused to reduce water requirements for concrete works and hence reduce pressure on existing water sources.		
Disproportionate impacts on vulnerable groups	Vulnerable groups & women	• The CLO will regularly undertake informal meetings including with women focus groups & vulnerable groups to ensure that on-going stakeholder engagement is gender inclusive. • The Project Company will ensure that the EPC Contractor employs a female within the E&S experts who will support the CLO in addressing potential Gender based violence and harassment issues. • Implementation of mitigation and management measures provided under Traffic & Transportation, Community Health, Safety & Security and Labour & Working Conditions Chapters. • Implementation of the Project specific RAP to ensure that herders livelihoods are not impacted.	All stakeholder engagement records and consultations to be maintained.	EPC Contractor's E&S Manager and Project CLO
Disruption of Local Custom	Welfare of Local Communities	• EPC Contractor to provide adequate training to the non-local workers in the Project, especially in terms of interaction with the local community members. • Allow local residents to report concerns associated with loss of cultural values through the grievance mechanism. • EPC Contractor and its sub-contractor will develop and implement a Code of Conduct. This will include an overview of culturally and religious appropriate measures and etiquette to bear in mind. • The code of conduct will also guide staff interaction with local communities. It will ensure workers and non-locals' behaviour are managed suitably to minimise upset in local community through anti-social behaviours • EPC Contractor will provide adequate training (cultural sensitization training) to the non-local workers in the Project. • EPC Contractor will adopt a zero-tolerance policy towards unacceptable workforce behaviors towards females or any community members i.e., sexual harassment or violence. • The grievance mechanism will be made available to the local communities i.e., community members can make verbal or written complaints at the Project security gate or request to speak to the HSE/Environmental Manager	All E&S training records to be maintained. All grievance records from external parties to be maintained as per the GRM	EPC Contractor (Relevant sub-contractors will also need to comply with mitigation for their works) Project Company (for external party GRM)
Social risks related to supply chain	Workers working within the supply chain	• ACWA Power & the Project Company will develop a Supply chain Management Plan and an E&S Supplier & Vendor Management Plan. • ACWA Power & the Project Company will carry out a supply chain risk assessment in relation to Sany's supply chain management system.	**Note:** *As per monitoring in line with the respective supply chain*	Project Company and EPC Contractor's E&S Manager

Potential Impact	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
		• ACWA Power & Project Company will establish a responsible sourcing policy to ensure traceability from wind turbine suppliers. • ACWA Power and the Project Company will ensure that Sany and its core suppliers adopt self-covenants and codes to the loan agreement mandating the suppliers to map and complete risk assessment of the core WTG components. • Sany must provide a Letter of Commitment to the Project Company which states that the suppliers involved in production/assembly of turbines will be locked contractually and any new or replacement supplier will go through a separate due diligence process to confirm no association with child and forced labour risks. • A Corrective Action Plan (CAP) will be developed and implemented to address any gaps identified during the supply chain assessment and to address any non-compliances that that will be identified in future audits • ACWA Power & the Project Company will notify the lenders when labour risks such as forced/child labour or allegations are raised in relation to their core suppliers. • A dis-engagement clause will be added to the loan agreement in case of material non-compliance with the measures listed above. • ACWA Power and the Project Company will ensure that Sany and its core suppliers keep all records, rules and policies in relation to workers protection and the provision of safe working conditions.	*management system.*	

7.1.10 Community Health, Safety & Security

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Worker Influx	Herders and communities	• Where suitably skilled workers are available, the EPC Contractor will aim to engage 50% of the workforce from Uzbekistan and local communities. • Worker accommodation areas will be managed in accordance with the EBRD and IFC Workers' Accommodation: Processes and Standards. The provision of good quality living accommodation, services and amenities will likely reduce the need for mixing with local communities. Gender aspects will be considered in the worker accommodation. • Project induction training will include a section on code of conduct when engaging with local community members. This will include an overview of culturally and religious appropriate measures and etiquette to bear in mind. • Sexual harassment or violence in and out of the Project site will not be tolerated and the EPC Contractor will work with local community leaders, gender-based organisations and government officials to ensure that any complaints are addressed in accordance with the law. • The EPC Contractor will develop a Worker Influx Management Plan to provide a clear set of actions that will be undertaken for the management and mitigation, monitoring and evaluation of impacts related to worker influx in the Project area during both Early Works (LNTP) & construction. • Additional management and mitigation measures will be in accordance with the World Bank guidance note on Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced Labour Influx (2016).	Record of any conflicts between workers and community members, including cases of sexual exploitation, abuse, or harassment (SEA/SH) Number of SEA/SH grievances received and handled through a survivor-centred approach, including the number of cases referred to legal entities for redress. Average period taken to handle SEA/SH grievances in line with lenders' requirements, including referral timelines to legal entities.	Project CLO EPC Contractor's HSE Manager
Public/ Community Health		• The Health and Safety teams on site will provide advice during training/inductions on exposure to disease including preventative measures e.g., TB, STDs and HIV/AIDS. • During construction, staff will have access to medical professionals and suitable medical facilities, which will aim to prevent the spread of diseases internally and externally. Site personnel will only be cleared for work with a medical fitness certificate from an authorised medical centre. • The EPC Contractor will prepare a medical evacuation emergency plan with contact details for local ambulance services. • Any reportable disease will be diagnosed by the authorised occupation health centre doctor. Diagnosis includes identifying any new symptoms, or any significant worsening of existing symptoms.	Cases of communicable diseases identified on site that could pose risks to surrounding communities, with data from the site clinic or HSE personnel. Number of grievances successfully closed through the Grievance Management System.	

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Any external and internal spreading diseases will be diagnosed and precautions will be taken as per the instructions from the national/ local medical authority. • The potential for exposure to water-borne, water-based, vector-borne diseases and communicable diseases as a result from project activities will be avoided or minimised. • Potholes will be filled immediately to prevent the breeding of bacteria and parasites that may pose a risk to the health of the communities near the site. • The EPC Contractor, in coordination with the local authorities, will conduct awareness campaigns regarding the transmission of STIs in the communities near the Project site. • Workers will be provided with free condoms and advice will be given on how to access testing in public hospitals. • Information regarding the transmission of HIV/AIDS will be prepared and disclosed in a culturally sensitive manner and targeted towards young adults of consenting age.	Records of the average time taken for grievance processing and closure, including observed trends. Records of open grievances, the methods available for grievance submission, and related trends. Topics raised in grievances and emerging trends through the Grievance Management System. Records of incidents, accidents, and near misses involving external parties, based on daily monitoring procedures on site. Discharging of firearms by security personnel on site	
Public/ Community Safety		• The EPC Contractor will prepare and implement a Community Health & Safety Management Plan which will include measures to avoid or limit risks to, and impacts on health, safety and security of the community during the construction phase of the Project. • The employees (including the drivers) during the construction phase will undergo a Code of Conduct training to ensure smooth coordination with the neighbouring community. • EPC contractor security staff to be trained on GBVH prevention. • Risks to public safety will be appropriately addressed and prepared for in the construction phase 'Emergency Preparedness and Response Plan' and training. • The plan will include the appropriate procedure to respond to any such incidents, as well as site specific contact details and details of external agencies who may be required. • Project induction training will include a section on code of conduct when engaging with local community members. This will include an overview of culturally appropriate measures and etiquette to bear in mind. • Vulnerable groups particularly children will be specifically trained/informed about the dangers in active construction areas or climbing of poles so that they understand the risks of trespassing to the project site, OHTL construction areas and/or fenced off areas. Such training or engagement can be undertaken at local schools. • All high-risk areas including fuel storage areas will be secured with internal fencing and will be patrolled by security throughout the day. • Smoking will be prohibited at chemical and fuel storage areas.		

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Appropriate mechanisms for emergency control (e.g. well-equipped firefighting equipment) will be placed at suitable positions around the site.		
Project Security - Public/ Community Security		• The Project will employ its own security staff who will provide 24/7 security control across the Project site and dedicated security staff at gatehouses. • The EPC will prepare a Security Plan consistent with its Security Risk Assessment. • Security arrangements will be guided by UN Code of conducts for law enforcement officials and UN basic principles on the use of Force and Firearms by law enforcement officials (where firearms are in use). Security personnel will follow a strict code of conduct and will be trained in weapons handling, human rights and receipt of grievances. • Any use of firearms will be in accordance with the Uzbekistan legal requirements. • The Project will be fenced during enabling works stage. • All vehicles entering the site will require pre-approved clearance and will need to be registered. Project security will record all instances of incoming vehicles. • CCTV will be installed at key locations around the site and at gatehouses. • Appropriate lighting will be provided at gatehouses for security personnel to prevent unauthorized access. • Project personnel will only be provided access to the construction site with valid ID cards and permits to work in line with HSE requirements. • People trying to gain unauthorized access to the site without appropriate permits and PPE will not be permitted or will be removed from site if identified and an investigation carried out on how they were able to access the site and corrective action taken. • The security personnel will be regularly trained on GBVH/SEA/SH code of conduct including how to handle grievances related to GBVH/SEA/SH from the community.		
Grievance Mechanism	Herders and communities	• The project will implement an appropriate system to allow external parties to raise grievances in regard to the Project. • The Grievance Mechanism will be clearly defined, transparent and accessible to identified stakeholders. • EPC Contractor will appoint a community liaison officer preferably from the local community who will maintain communication with the local leaders and community members. • The grievance mechanism will be confidential and provide referral and support system for any workers reporting cases of GBVH.		

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Economic & physical displacement of PAPs	PAPs	• Implementation of the Project specific RAP. • Compensation will be provided to all herders that will be economically and/or physically displaced as a result of the project's development prior to any impact. • The Project will also ensure that the following rights of the herders are adhered to: - Access to information; - Ability of impacted PAPs to participate in decision making consistent with the principle of equality and non-discrimination; - Freedom of expression and opinion without fear of retribution; - Right to remedy through an operational grievance mechanism that is also accessible to vulnerable groups; and • Right to an adequate standard of living and continuous improvement in living conditions by ensuring a full and fair compensation in accordance with Uzbek and lender's requirements	**Note:** As per RAP	Project CLO EPC Contractor's HSE Manager
Impacts on vulnerable groups	Vulnerable groups	• Prioritisation of vulnerable groups in job opportunities and any community investment projects. • Consultations and project information will be provided in areas that are easily accessible to vulnerable groups. • Timing of consultations meetings will consider the time these groups are available i.e., meetings should not be held during busy planting or lambing/breeding seasons. • The Project Company and EPC Contractor will provide alternative means of communication and access to information for those without access to digital platforms. • Information will be provided and disclosed in local languages i.e., Uzbek, Russian etc. • EPC Contractor to provide adequate training to the non-local workers in the Project, especially in terms of interaction with the local ethnic minority; • Allow locals including residents to report concerns through the grievance mechanism; • EPC Contractor will adopt a zero-tolerance policy towards unacceptable workforce behaviour towards females or any community member. • The Project Company and EPC Contractor will disclose their zero-tolerance policy on retaliation and GBVH against affected people and will ensure these are implemented carefully with a specific focus on vulnerable groups.	**Note:** As per RAP	

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Implementation of the Project specific RAP measures relating to vulnerable groups such as provision of additional support and prioritisation during recruitment.		
GBV, SEA & SH	Herders and communities	• ACWA Power/Project Company will develop a GBVH reporting procedure and train its Project staff, EPC Contractor and the sub-contractors. • The Project Company will communicate its GBVH policy to stakeholders and impacted communities. • The Project Company and EPC Contractor will assign and train focal point staff to deal with GBVH related incidents at the Wind Farm and along the OHTL. • The Project Company and EPC Contractor with support from the CLEO will identify and include a female member of the community to support in addressing GBVH issues. • Training and awareness campaigns will be undertaken to raise awareness of both project personnel and community members including women on GBVH issues. Information will also be provided on how to report and deal with any GBV/SEA/SH related cases and the services that will be made available to offer support to any of the victims • The Project Company and the EPC Contractor will conduct a GBV/SEA/SH risk assessment in consultation with relevant stakeholders including women leaders and those working with young adolescent girls and boys. This will also include the identification of potential interventions and risk mitigation measures. • The EPC Contractor will develop and implement a Project specific GBVH Policy detailing the list of unacceptable behaviour among workers, provisions for reporting, sanctions for perpetrators and available resources & support systems for the victims in accordance with lenders and Uzbek requirements including ACWA Power's Environmental & Social Management System Implementation Manual. • Awareness training will be mandatory for all Project workers regarding the GBV/SE/SH risks and the workers responsibilities and the legal consequences of being a perpetrator. • Approach towards GBV/SEA/SH prevention, mitigation and response will be survivor centered and ensure confidentiality, dignity and respect to them. • The Project staff will be trained on how to preserve the safety of the women, girls, boys when interviewing them and collecting information about their experiences on GBV/SEA/SH. • The project will provide essential services for survivors such as access to counselling services, support groups, legal support etc. at no cost to them. • All determined cases of GBV/SEA/SH will be referred to relevant legal entities in the Project area for further investigation and prosecution.	Record of any conflicts between workers and community members, including cases of sexual exploitation, abuse, or harassment (SEA/SH) Number of SEA/SH grievances received and handled through a survivor-centred approach, including the number of cases referred to legal entities for redress. Average period taken to handle SEA/SH grievances in line with lenders' requirements, including referral timelines to legal entities.	

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• The Project grievance mechanism will be made available to project workers and community members and will ensure that survivors' information is confidential and kept anonymous. • All cases relating to GBV/SEA/SH will be documented and closed. • The EPC Contractor will prepare and implement a GBV/SEA & SH Prevention and Response Action Plan which will put necessary protocols and mechanisms to address the risks of GBV/SEA/SH and how to address any allegations that may arise in accordance with the World Bank Good Practice Note on Addressing SEA/SH in Investment Project Financing involving Major Civil Works.		
Human Rights	Herders and communities	In addition to adhering to the national human rights requirements, ACWA Power and the EPC Contractor will each develop a human rights policy. The policy will be in line with the UN Guiding Principles on Business and Human Rights. The statement policy will: • Be approved at the most senior level of the company; • Informed by relevant internal and external expertise; • Stipulate the EPC's human rights expectations of personnel, local communities, sub-contractors and other suppliers directly linked to the construction of the project; • Be publicly available and communicated internally and to the relevant stakeholders; • Be reflected in the other policies and procedures to embed it throughout their construction phase activities.	Record and track complaints from local communities relating to potential human rights violations associated with the Project.	

7.1.11 Labour & Working Conditions

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
All Impacts	Project Workers	• The Project Company and EPC Contractor will ensure that the following plans/policies are prepared and implemented. - Occupational Health & Safety Plan - Emergency Preparedness & Response Plan - Supply Chain Management Plan - Labour Management Plan - Human Resource Policies & Procedures - Worker Accommodation Plan - Stakeholder Engagement Plan (including implementation of the Grievance Mechanism) - Human Rights Policy - GBVH Policy - Worker Code of Conduct	Monitoring will be undertaken through periodic audits, review of records and reports, site inspections, and verification of grievance and incident logs during construction and operation.	EPC Contractor's HSE Manager
Occupational Health and Safety		• Workers will be provided with a safe and healthy work environment, taking into account inherent risks and specific classes of hazards associated with the project. • The EPC Contractor will implement and maintain an OHS management system taking into account specific risks associated with the project, legal requirements and duty of care. • The EPC Contractor will be responsible for ensuring that all affiliated sub-contractors comply with the OHS management system. The OHS management system will be in-line with recognised international best practice and as a minimum, this plan will include: - Means of identifying and minimising, so far as reasonably practicable, the causes of potential H&S hazards to workers. - Provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances. - Provision of appropriate equipment to minimise risks and requiring and enforcing its use. - Training of workers, and provision of appropriate incentives for them to use and comply with H&S procedures and protective equipment. - Documentation and reporting of occupational accidents, diseases and incidents. - Emergency prevention, preparedness and response arrangements	Any classified near miss OH&S emergency situation or incident Documentation and reporting of occupational accidents and incidents. Records of the illnesses the workers are suffering from and an analysis of top diseases. Training records	EPC Contractor's HSE Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• The Project Company will ensure that regular labour audits are undertaken on the EPC Contractor and sub-contractors including suppliers.		
Human Right Risk to Workers - Workers Right to Health		• During construction, workers will have access to medical professionals and suitable medical facilities, which will aim to prevent the spread of diseases internally. Site personnel will only be cleared for work after with a medical fitness certificate from an authorized medical centre; • Any reportable disease will be diagnosed by the authorized occupation health centre doctor. Diagnosis includes identifying any new symptoms, or any significant worsening of existing symptoms; • Any internal spreading diseases will be diagnosed and precautions will be taken as per the instructions from the national/ local medical authority; • The potential for exposure to water-borne, water-based, vector-borne diseases and communicable diseases as a result from project activities will be avoided or minimized; • EPC Contractor will comply with Uzbek sick leave requirements.	Sanitation Facilities, Office Spaces, Welfare and Rest Areas Inspection/internal audit of worker accommodation facilities vs. IFC & EBRD standards	EPC Contractor's HR Manager & E&S Manager
Provision of Inadequate Accommodation Facilities		• Worker accommodation areas will be managed in accordance with the EBRD and IFC Workers' Accommodation: Processes and Standards. • Implementation of the Worker Accommodation Plan during both Early Works (LNTP) & construction.		
Forced Labour		• Local workers will be considered for available positions depending on skills & qualifications. • The Project's process for employment will consider the availability of local talent. • The EPC contractor will not make employment decisions on the basis of personal characteristics, such as gender, race, nationality, ethnic origin, religion or belief, disability, age or sexual orientation, unrelated to inherent job requirements. • The EPC contractor will not employ forced labour, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements. • Workers will be provided with easily understandable contracts that include details of their benefits, deductions (if any and within the limits of the law) and obligations. In addition to the copy signed for the EPC records, the employees will also be provided with a copy for their records. • Employees will be free to terminate their employment in accordance with the Uzbekistan Labour Code	Verify recruitment companies, processes, employment contracts, and personnel files to ensure compliance with national labour law and EPC policies. Periodic checks on employment arrangements Monthly audits of accommodation standards against IFC/EBRD requirements and tracking of any	EPC Contractor's HR Manager & E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• The EPC contractor will provide a plan detailing how working conditions and terms of employment are compliant with national labour, social security and occupational health and safety laws. • Employees will be provided with suitable accommodation and worker accommodation areas will be managed in accordance with the EBRD and IFC Workers' Accommodation: Processes and Standards. The provision of good quality living accommodation, services and amenities will likely reduce the need for mixing with local communities. • Employment relationship will be on the principle of equal opportunity and fair treatment and will not discriminate with respect to any aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment including provisions for maternity/paternity leave, accommodation, access to training, promotion, termination of employment or retirement, and discipline. • Special measures of protection or assistance to promote local employment opportunities or selection for a particular job based on the inherent requirements of the job, which are in accordance with national law, will not be deemed discrimination.	complaints or non-compliances. Track the number, type, and resolution time of worker grievances	
Child Labour		• The EPC contractor will comply with all relevant national laws, lenders requirements and ILO provisions related to the employment of minors. This will include compliance with ACWA Power's policy that does not allow the employment of any workers under the age of 18 years. • The EPC Contractor will devise a management procedure to ensure that all workers are above the minimum legal age of employment at the time of hiring. This will include the verification of official personal registration documents i.e., national ID, passport etc. • Young people below the age of 18 years will not be employed in hazardous work and all work of persons under the age of 18 will be subject to an appropriate risk assessment. • Where workers under the age of 18 are employed, the EPC Contractor will establish a system to regularly monitor the working conditions and working hours of such young workers in line with Uzbek Labour Code.	Routine checks of worker personnel files to confirm proper documentation (national ID/passport) and evidence of age verification at recruitment.	EPC Contractor's HR Manager & E&S Manager
Lack of Worker Representation & Restrictions on Trade Unions		• HR Policies will include the ability of workers to form or join all types of associations. • HR Policies will include the ability of workers to join a Trade Union; as well as ensure collective bargaining rights of workers. • Trade unions must be permitted to function freely subject only to limitations that are in line with the Uzbekistan Labour Code and the International Human Right standards.	Any restrictions, intimidation, or obstruction of union activity must be investigated, logged, and addressed with corrective actions.	EPC Contractor's HR Manager & E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Compulsory Overtime, Excessive Hours & Job Security		• HR policies and procedures will be adapted appropriately to the size of the workforce required for the Project. Policies and procedures must be prepared to demonstrate consistency with the requirements of national legislation and IFC PS 2 and include a code of conduct on GBVH/SEA/SH. • The EPC contractor will document and communicate to all workers their working conditions and terms of employment including their entitlement to wages, hours of work, overtime arrangements and overtime compensation, and any benefits (such as leave for illness, maternity/paternity, or holiday). • The workers will be informed and understand the nature of their contracts, duration • Wages, benefits, leave days and other conditions of work offered will, overall, be comparable to those offered by equivalent employers in the relevant region of that country/region and sector concerned. • The wages to all the workers (skilled and unskilled) will be enough to guarantee a living wage for all the workers (i.e. adequate food, clothing and housing). • Workers will be provided equal remuneration for work of equal value. • Workers will receive their pay on time and in full for ordinary and overtime hours, as well as paid leave. • Wages will be paid regularly based on the agreed pay-day and adequate notice provided where exceptional circumstances necessitate change in the regular pay day. • Where required, workers will be provided with the option of flexible work schedule in order to manage personal obligations while adequately fulfilling their employment duties. • If the EPC contractor anticipates collective dismissals associated with the proposed project, the EPC contractor will develop a plan to mitigate the adverse impacts of retrenchment, in line with national law and good industry practice and based on the principles of non-discrimination and consultation. Without prejudice to more stringent provisions in national law, such consultation will involve reasonable notice of employment changes to the workers' representatives and, where appropriate, relevant public authorities so that the retrenchment plan may be examined jointly in order to mitigate adverse effects of job losses on the workers concerned. The outcome of the consultations will be reflected in the final retrenchment plan.	Records of contracts, payments, receipt of benefits, leave entitlements, retrenchment etc.	EPC Contractor's HR Manager & E&S Manager
Gender Risk - Wage discrimination based on Gender		• EPC Contractor to provide access to recruitment opportunities for women based on their qualifications. • EPC Contractor will develop a Local Recruitment Plan that ensures equal opportunities are provided to women in the employment process, training and promotions • The EPC Contractor will implement an equal wage policy for women employees.	Number of women employed in the project including their rank and renumeration compared to men	EPC Contractor's HR Manager & E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Women will be provided equal remuneration as their male counterparts for work of equal value.	occupying the same positions.	
Gender Risk - Gender Based Violence and Harassment		• The workers will be provided with information regarding worker code of conduct in local languages as part of their employment contract which will include provisions for reporting, investigations, termination and disciplinary action against those who perpetrate gender violence and harassment. • ACWA Power will develop a GBVH policy and disclose it to the EPC Contractor and its employees. • The EPC Contractor will develop and implement a Project specific GBVH Policy detailing the list of unacceptable behaviour among workers, provisions for reporting, sanctions for perpetrators and available resources & support systems for the victims in accordance with lenders and Uzbek requirements including ACWA Power's Environmental & Social Management System Implementation Manual. • The EPC Contractor will conduct mandatory regular training and awareness raising for the workforce about gender-based violence and harassment towards local community members and their colleagues especially women and the availability of a grievance mechanism to report any GBVH/SEA/SH cases. • Training will be provided to GBVH focal point on the risks of GBV/SEA/SH and information provided on how to deal with any GBV/SEA/SH related cases. • The workers will be made aware of the laws and regulations that make sexual harassment and gender-based violence a punishable offence which is prosecuted. • Ensure inclusion of a balanced representation of women on the HSE team who will be easily relatable and approachable to female workers. • Project personnel in charge of receiving GBVH/SEA/SH grievances will be provided with appropriate training on how to handle such complaints. It is recommended that the personnel are trained in coordination with any GBVH organisations working in the Project area where available. • Female workers will be included in the grievance redress committee to help female workers and host community female members raise their grievances. • Regular consultations will be undertaken with women on their concerns about the project • The EPC Contractor will work to identify a suitable labour pool locally in order to minimize the need for bringing large number of workers from other regions or countries. This could also help the EPC Contractor in cutting cost associated with provision of accommodation facilities if the majority of the workers are sourced locally.	Human rights complaints/violations as reported by Project workers including workers hired through third-parties or in the supply chain	EPC Contractor's HR Manager & E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Provision of opportunities for the workers to regularly return to their families who may be located far from the Project site. • The EPC Contractor will provide opportunities for workers to have access to entertainment opportunities away from the host communities. • EPC Contractor will allow submission and investigation of anonymous sexual harassment complaints by workers and host community members and protect the confidentiality of the complainants. • The EPC Contractor will work in close coordination with the local authorities in investigating any complaints relating to gender violence and harassment in the host communities where it relates to Project workers. • The EPC Contractor will provide targeted training (including in life skills such as leadership and decision-making) and awareness raising to vulnerable workers such as women. • The EPC Contractor will prepare a Gender Equality and GBVH/SEA/SH Policy in line with Uzbek and lenders requirements. This will include provision of training to workers, subcontractors and suppliers on GBVH associated risks.		
Gender Risk - GBVH/SEA/SH in Accommodation Facilities		• The EPC will provide safe, secure and separate accommodation facilities and sanitary facilities for the male and female workers (lockable sanitary facilities will be mandatory for women). • The EPC Contractor will provide separate social facilities for the men and women. • Worker accommodation areas will be managed in accordance with the EBRD and IFC Workers' Accommodation: Processes and Standards.		EPC Contractor's HR Manager & E&S Manager
Gender Risk-Discrimination based on employment benefits & Guarantees		• The EPC Contractor will include the benefits and guarantees for both men and women in the HR policy with a clear commitment to non-discrimination during the recruitment process. • EPC Contractor to improve employment opportunities by developing guidelines to ensure that discrimination against women on the basis of their marital or reproductive status is avoided. • The EPC Contractor will implement a zero-tolerance process for discrimination against women.		EPC Contractor's HR Manager & E&S Manager
Demobilisation risks		• Advance notice to workers regarding the end of employment and the schedule for workforce demobilization and ensure compliance with national labour laws and ILO standards. • Settle all wages, overtime, severance, and social insurance contributions prior to departure.	Audit payroll records to confirm all wages, overtime, severance, and social insurance contributions are settled before departure; spot-	EPC Contractor's HR Manager & E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Transfer of skills and opportunities through completion certificates or references for workers to facilitate re-employment. • Keep the grievance mechanism active throughout demobilization to resolve disputes transparently. • Maintain safety through decommissioning method statements, EHS supervision, and continued access to first aid and medical services. • Implement a phased demobilization plan to stagger departures and avoid overcrowding, maintaining basic services (water, electricity, sanitation) until completion. • Ensure safe and documented repatriation of all workers in compliance with visa and labor regulations. • Enforce the code of conduct until all workers have departed, with supportive and non-confrontational site security. • Maintain ongoing communication with local authorities to coordinate demobilization activities. • Develop and implement a Demobilization Management Plan (DMP) under the CESMP, detailing roles, timelines, monitoring, and documentation requirements.	check with worker interviews.	
Grievance Mechanism		• The EPC contractor will provide a grievance mechanism for workers to raise reasonable workplace concerns. The client will inform the workers of the grievance mechanism at the time of hiring and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides feedback to those concerned, without any retribution. The mechanism should not impede access to other judicial or administrative remedies that might be available under law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements. • The grievance mechanism shall provide for confidential reporting and a support system for any workers reporting issues relating to GBVH/SEA/SH. The grievance mechanism will also allow for reporting through word of mouth for those who cannot write. • Female workers will be included in the grievance redress committee to help female workers and host community female members raise their grievances.	Track all grievances in a log, categorizing by type (including GBVH/SEA/SH) and monitoring trends, repeat issues, resolution times, and closure status.	EPC Contractor's HR Manager & E&S Manager
Human Rights Policy		In addition to adhering to the national human rights requirements, ACWA Power and the EPC Contractor will each develop a human rights policy. The policy will be in line with the UN Guiding Principles on Business and Human Rights and will: • Be approved at the most senior level of the company;	Human rights complaints/violations as reported by Project workers including workers hired through	EPC Contractor's HR Manager & E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Informed by relevant internal and external expertise; • Stipulate the EPC's human rights expectations of personnel, local communities, sub-contractors and other suppliers directly linked to the construction of the project; • Be publicly available and communicated internally and to the relevant stakeholders; • Be reflected in the other policies and procedures to embed it throughout their construction phase activities.	third-parties or in the supply chain	

7.2 Operation Phase Mitigation & Monitoring

7.2.1 Air Quality

POTENTIAL IMPACT	RECEPTORS	MITIGATION AND MANAGEMENT MEASURES	MONITORING	RESPONSIBILITY
Air Quality		***Note:*** *As the operation of the wind farm will not include combustion related activities, there will be no direct emissions to the local air-shed as a result of primary project operations.* *The operation and maintenance (O&M) requirements of the wind farm, substation and OHTL will necessitate limited use of vehicles and delivery/removal vehicles along access roads to undertake inspection and maintenance activities. Emissions from these vehicles will be very minor and are unlikely to result in discernible impacts at receptors.* Applicable best practice measure to ensure any impacts during maintenance activities are properly mitigated. This will include: • Appropriate quality of fuel used – Fuel of an internationally compliant standard to be sourced through a licensed supplier. • Limit unnecessary usage of vehicles – No unnecessary idling. This may require providing staff, drivers and visitors with access to heated and air-conditioned areas to wait. • Planned inspection and maintenance of project vehicles and mobile equipment will be undertaken annually to ensure worthiness. • Emissions from vehicles will be free from significant black smoke - remedial measures will be taken if this is observed. • Implement regular maintenance program of vehicles and keep documentary evidence. • In the event of submitted grievances that relate to air quality these will be investigated on a case-by-case basis and after investigation appropriate mitigation would be considered respective to the impact.	Tracking of any air quality related grievances (if submitted). In the event of mitigation related to air quality grievances, monitoring may be required on a case-by-case basis to confirm success of the adopted mitigation approach.	O&M Company's E&S Manager

7.2.2 Noise & Vibration

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Wind Turbines Operational Noise	Herders' houses (H4-a, H4-b, H5-a, H5-b, H7, H10-b, H12-b, H14-a, H14-b, and H 14-c)	• Relocation will be undertaken in accordance with the Project specific Resettlement Action Plan (RAP).	**Note:** *Relocation to be monitored in accordance with RAP*	Project Company
	Herders' houses (H1, H2-a, H2-b, H3, H6-a, H6-b, H8-a, H10-a, H12-a, H14-d, H14-e, H18, and H19)	• Third parties/herders will have access to a grievance mechanism to raise their concerns and grievances regarding noise during the operation phase.	If complaints are received from receptors regarding wind turbine noise, monitoring will be undertaken at complainant's locations for 10 continuous days. Should the results indicate non-compliance with applicable standards, corrective actions will be implemented, followed by additional monitoring to confirm the effectiveness of these measures.	O&M Company's E&S Manager
	Fish Farms (F1, F2 and F3 (outside the project site))			
Operational Vehicle Noise	Wind Farm Operation Workers Nearby herders/residents	• Limit unnecessary usage of vehicles/equipment – No idling – Equipment to be shut or throttled down when in intermittent use. • Delivery vehicles will be prohibited from waiting outside the site with their engines running. • Ensure any appropriate permits are in place for deliveries to the site and for any maintenance works performed outside normal working hours. • Notify residents in proximity to the access road of noisy special deliveries with a minimum one week in advance. • Review vendor specifications and accept site vehicles, in particular heavy vehicles, based on noise emissions (as far as practical). • The movement of heavy vehicles during the night will be avoided wherever practical. • Where available in country, audible reversing alarms with broadband noise (white noise) will be preferred over tone alarms (beeping), to limit external disturbance to communities. • The impacted receptors will have access to a grievance mechanism in accordance with the Project SEP in order to make any complaints regarding noise during the operational phase		

7.2.3 Shadow Flicker

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Wind Turbines Operational Shadow Flicker	Herders' houses (H4-a, H4-b, H5-a, H5-b, H7, H12-b, H14-a, H14-b, and H 14-c)	• Herders with structures at the Project site will be relocated to alternative land outside the impact zone in accordance with the Project specific RAP.	**Note:** *Relocation to be monitored in accordance with RAP*	Project Company
	Herders' houses (H10-a (F2), H3, H6-a, H8-a, and H12-a)	• Relocate the location of the windows away from the WTGs to ensure the shadow flicker does not affect the herders using these houses. • Third parties/herders will have access to a grievance mechanism to raise their concerns and grievances regarding shadow flicker during the operation phase.	If complaints are received from receptors regarding WTG flicker, monitoring will be undertaken at complainant's locations. Monitoring will be carried out for a minimum of 3 months.	O&M Company's E&S Manager
	Fish Farms (F1, F2 and F3 (outside the project site))			

7.2.4 Geology, Soils & Groundwater

Potential Impacts	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Accidental minor Leaks & Spillage	Soil Quality Surface Water Quality Groundwater Quality	• Operator to develop and implement an Emergency Response Plan (ERP) to include or link to a Spill Response and Contingency Plan. • Conformance with ERP procedures (preventative and response) will be monitored through routine inspections. • Appropriate training of staff in regard to the handling and response to spill/leak events. • Availability of complete spill kits in all hazardous material storage areas. • Availability of MSDS on-site for any chemicals in use (to be made available at the chemical storage area). • Availability of a chemical register for all the hazardous chemicals on site. • Storage of all hazardous materials such as fuels and chemicals on an impermeable base with liners and/or secondary containment bund with enough capacity to hold 110% of the bulk storage container and 25% of the total volume of the multiple containers. • The chemical storage area will have proper ventilation and cover from the elements (i.e. rain, sun) and different storage areas to allow for segregation of incompatible chemicals. • O&M Company to ensure that sanitation facilities have effective leak tight plumbing systems and the manholes will be inspected regularly for any blockage. • If used in landscaped areas, the application of fertilisers and pesticides must be limited and monitored. • Use of any toxic/non-biodegradable pesticides will be prohibited in accordance with the Stockholm Convention on banned chemicals. • Only organic, chloride free and environmentally friendly fertilizers will be applied. • O&M will obtain relevant permits to transport and dispose any hazardous waste from operational processes.	Incidental siting's of visible spills & leaks of hydrocarbons and other potentially hazardous or chemical pollution sources during day-to-day activities and as part of periodic inspections	O&M Company's E&S Manager Operation Workers

7.2.5 Terrestrial Ecology & Avifauna

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Habitat Fragmentation (Barrier Effect)	All Fauna	• The site will not be fenced.	***Note:*** *No specific monitoring proposed*	O&M Company
Turbine Collision	Birds	• A Post Construction Fatality Monitoring Plan will be in place to include carcass searches and mortality rate calculations for the Wind Turbines. The Fatality Monitoring will be continued for a minimum of 3 years or until the risk to birds and bats species is considered 'negligible' in consultation with the lenders. • Quantitative 'take' thresholds developed as per Potential Biological Removal (PBR) approach will be calculated for each species prior to the operation phase. Surpassing these thresholds would trigger the Lender agreed adaptive management response to review the situation, identify mitigation upscaling, control tightening measures agreed with lenders, or offsetting as options to course correct. • Observed-led Shutdown on Demand (OLSDOD) will be implemented as an adaptive management measure. It will be deployed if the PCFM results cross the PBR thresholds. Under this approach, trained observers positioned at identified high-risk turbine(s) or clusters will monitor for high-risk flight activity of target species or soaring raptors approaching rotor-swept height within the turbine array and initiate temporary turbine shutdowns to avoid potential collisions. Further details of the OLSDOD protocol, including trigger criteria, response times, communication pathways, and restart procedures are being discussed with the lenders and will be specified in the Collision Risk Management Plan in as finalized.	3-years of Fatality Monitoring for birds and bats Monitoring cut in speed curtailment for bats ***Note:*** *Monitoring requirements would be stated in the Biodiversity Management Plan with a Biodiversity Monitoring and Evaluation Programme* *Monitoring in relation to CH trigger species will be stated int eh BAP.*	
Turbine Collision	Bats	• Upfront cut-in speed curtailment of turbines BSH2-19, BSH2-20 and BSH2-21and BSH2-16, BSH2-17 and BSH2-18 within the highest activity period. • Upfront cut-in speed (6m/s) curtailment of high-risk turbines BSH2-19, BSH2-20 and BSH2-21and BSH2-16, BSH2-17 and BSH2-18 from April 15 to October 15 i.e. during highest activity period. • Integration of adaptive management such that the findings of fatality monitoring will be used to determine the best cut in speed curtailment regime so that it may be modified if needed. • A Post Construction Fatality Monitoring Plan will be in place to include carcass searches and mortality rate calculations for the Wind Turbines. The Fatality Monitoring will be continued for a minimum of 3 years or until the risk to birds and bats species is considered 'negligible' in consultation with the lenders.		

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Quantitative 'take' thresholds developed as per Potential Biological Removal (PBR) approach will be calculated for bats. Surpassing these thresholds would trigger the Lender agreed adaptive management response to review the situation, identify mitigation upscaling, control tightening measures agreed with Lenders, or offsetting as required. • Prevention of elements that may attract bats, or insects and therefore bats: o All wind turbines, particularly the nacelles, should be designed, constructed and maintained in such a manner that they do not support roosting bats – all the gaps and interstices should be made inaccessible to bats. o Use lighting only as needed and use wavelengths and designs such as low UV LED bulbs that do not attract insects or bats. o For external security lights Passive Infrared sensors trigger units will be used and these should be timed to automatically switch off after five minutes. o Prevent retention of water in areas that have been created as a result of project activities and growth of weeds/shrub as well as hedges and shrubs that may attract insects in the immediate vicinity.		
OHTL Collision	Birds	• A Post Construction Fatality Monitoring Plan will be in place to include carcass searches will be continued for minimum of 3 years or until the risk to birds and bats is considered 'negligible' in consultation with the lenders	3-year of Fatality Monitoring for birds ***Note:*** *Monitoring requirements would be stated in the Biodiversity Management Plan with a Biodiversity Monitoring and Evaluation Programme*	O&M Company
OHTL Electrocution	Birds	• Post Construction Fatality Monitoring Plan will be in place to include carcass searches and will be continued for minimum of 3 years or until the risk to birds is considered 'negligible' in consultation with the lenders.		O&M Company

Applicable reporting and management plans:

- Development of the **Biodiversity Management Plan (BMP),** one for the operational phase of the project which details the biodiversity-related mitigation, management and monitoring commitments as well as the assigned roles and responsibilities of the relevant implementing party. This will include the flora and fauna relocation monitoring, Ecological Chance Find Procedure, Post-Construction Fatality Monitoring (PCFM) aligned with the Good Practice Handbook and Decision Support Tool (IFC, EBRD, KfW 2023), etc.

- Development of **Biodiversity Action Plan (BAP)** for achieving net gain and no net loss, including offset measures for the CH trigger species. The BAP will also cover Significant Biodiversity Values (SBV) identified by the CHA.
- Development of the **Biodiversity Monitoring and Evaluation Programme (BMEP)** for operation which will demonstrate firstly compliance with biodiversity commitments and secondly effectiveness of the mitigation in achieving desired outcomes through integration of adaptive management.
- **Operational mitigation**, wherein restrictions are made on standard operating procedures for reduction of environmental impacts as prescribed by the **Operational Environment and Social Management Plan (OESMP)**. This could include Maintenance Procedures, Lighting Strategy, Schedule/Programme, Logistics, etc. Checklists, Inspections, Monitoring, Reporting and Auditing form the compliance mechanism. OESMP will also include biologically derived species specific annual fatality thresholds that will account for cumulative effects.
- A Front loaded mitigation plan will be required by the lenders demonstrating that mitigation is ordered (e.g., BFDs) or contracted (e.g., PCFM) sufficiently far in advance to meet Project commitments in a timely manner.

7.2.5.1 Pre-operation

The following outline the mitigation requirements post-construction:

- Implementation of Post- Restoration Monitoring
- Preparation of standalone operation Biodiversity Management Plan with a Biodiversity Monitoring and Evaluation Programme, inclusive of:
  - Cut-in Speed Curtailment Plan for Bats
  - Bat acoustic monitoring program including deployment of acoustic recorders at nacelle height and lower altitudes
  - Post Construction Fatality Monitoring Plan: Three years of monitoring to be done across turbines and powerlines to capture data on mortalities and provide adaptive management if needed
  - Adaptive Management Strategy inclusive of adaptive mitigation measures for turbine collisions
  - Action plan for NNL

7.2.5.2 Commissioning & Operation

The following outline the mitigation requirements:

- Implementation of Post- construction Habitat Restoration
  - Carrying out restoration works
  - Post-restoration survey
- Preparation and Implementation of OESMP, inclusive of:
  - General Site Controls
  - Noise Control Plan
  - Lighting Control Plan in accordance with Dark Skies Guidance (taking into consideration H&S and security)
  - Solid Waste Control Plan
  - Landscaping Maintenance, if applicable
- Implementation of operational Biodiversity Management Plan with a Biodiversity Monitoring and Evaluation Programme inclusive of:
  - Cut-in Speed Curtailment Plan for Bats
  - Bat acoustic monitoring program including deployment of acoustic recorders at nacelle height and lower altitudes
  - Post Construction Fatality Monitoring Plan: Minimum of 3 years of monitoring to be done across turbines and powerlines to capture data on mortalities and provide adaptive management if needed
  - Adaptive Management Strategy inclusive of adaptive mitigation measures for turbine collisions
  - Action plan for NNL
- The O&M will employ a full-time site-based Ecologist to ensure that ecology related measures and monitoring are carried out in full.
- Compliance checks and reporting include:
  - Daily Checklist
  - Weekly Inspection

- Monthly Reporting
- Quarterly Auditing
- Priority Species Incident Reporting
- Semi-annual Reporting

7.2.6 Landscape & Visual Impacts

Potential Impact	Receptor	Mitigation and Management Measures	Monitoring	Responsibility
Changes in Landscape Character	Undeveloped Desert Landscape **(LCA 1)**	• Efforts will be made to soften the landscape character impacts by planting native trees and vegetation in appropriate areas such as the Project boundary, Health Protection Zone in order to soften the impacts.	Visual inspection to ensure works are confined within the footprint. Visual inspection to confirm removal of temporary facilities after construction completion.	O&M Company's E&S Manager
	Water Bodies Landscape **(LCA 2)**			
	Developed Areas **(LCA 3)**			
	Agricultural Areas **(LCA 4)**			
Visual Disturbance	Herders' houses	• Lighting provisions will need to comply with Health & Safety, but not be excessive or unnecessary and not result in sky glow, light spill and glare effects. • Light fittings will be directional as deemed appropriate for their use and intended areas of illumination. • Lighting column and lighting head design will be chosen to limit back spill and any unwanted light spill to other site areas or areas off the site.	Visual inspection to confirm the absence of light spill.	
	Fish Farm (F1 and F2 and fish farm area outside the Project Boundary)			
	Kuklam Village			
	Zafarobod Hydrocarbons Storage			
	Navoiyuran Chemical Warehouse			
	Post of Asia Trans Gas			
	Agricultural area (outside the Project Boundary)			
	Graves			

7.2.7 Solid Waste & Wastewater Management

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Inappropriate handling, storage, transport and disposal of solid non-hazardous waste	Receptors are not specified, but include ecology, air quality, soil & groundwater quality, visual amenity to humans and impacts to waste management facilities	• Contractor to develop and implement a Project specific Operational Waste Management Plan (OWMP) in line with committed mitigation measures in this ESIA report and the provisions of the OESMP. • Domestic solid wastes to be segregated and identified from the other waste streams into separate waste containers/skips clearly to facilitate recycling. • Waste containers/skips will be clearly labelled and placed in designated waste storage locations. Labels will be waterproof, securely attached, and written in English and other languages as required for the workforce such as Uzbek and Russian. • For litter (food waste, domestic waste), an adequate number of covered bins will be strategically placed throughout the site at locations where construction workers and staff consume food. These will be regularly collected and taken to the main waste storage area. • Food waste must be stored within a sealed metal or plastic skip or bin, in order to prevent pests gaining access. • Heavy waste may be contained within an open skip, provided that segregation occurs effectively enough to remove all lightweight material that could be blown away. • Paper cardboard, metal cans, plastic, glass to be collected for recycling by a licensed waste contractor. • Only licensed waste transporters and waste management facilities will be engaged. • The Contractor will maintain copies of the waste management licensed on site. • Develop and maintain a waste inventory to document and track domestic solid wastes generated, segregated, reused and consignments • Completed waste manifests are required to show the chain of custody of the waste generated on site, its transportation and treatment/disposal. All records will be maintained on site.	Day-to-day on-going observations of handling and storage of waste materials as per mitigation requirements. Ensuring engaged waste management contractors, their vehicles and waste management facilities have applicable registrations/licenses at the time of contracting and ensuring valid copies are maintained at the site. All waste transfer notes shall be maintained.	O&M Company's E&S Manager
Inappropriate/ uncontrolled handling, storage, transport and/or disposal of sanitary wastewater		• Sanitary facilities will be provided with adequately designed underground storage tanks. • Sanitary wastewater tanks to be properly maintained and inspected to ensure tanks do not overflow. • Sanitary wastewater tanks in allocated impervious hard standing areas with bunding capacity of 110% volume of the maximum volume stored.		

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• Where there is no onsite sewage treatment plant, a licensed waste contractor will be engaged for the periodic removal of tank.		
Inappropriate/ uncontrolled handling, storage, transport and/or disposal of solid hazardous waste		• Develop and maintain a hazardous waste inventory to document and track hazardous wastes generated, segregated, reused and consignments. • Segregate and identify hazardous waste from the other waste streams into separate waste containers/skips clearly signed and labelled. • Store hazardous waste in allocated impervious hard standing areas in sealed containers stored with impermeable bases, sufficient containment and separation capacity, sun/rain shelter, separate drainage system, good ventilation and equipped with spill kits & spill response procedures. This area must be placed away from any sources of ignition. • Waste containers will be clearly marked with appropriate warning labels to accurately describe their contents and detailed safety precautions. Labels will be waterproof, securely attached, and written in English and other languages as required by the workforce such Uzbek & Russian. Wherever possible, chemicals will be kept in their original container. • Used face masks will be stored in designated bins and disposed of as medical waste.		

7.2.8 Traffic & Transportation

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Increased vehicle flow on local roads	Local road users	• Operational phase workers will be encouraged to carpool wherever possible to limit the number of vehicles along the local roads.	n/a	O&M Company

7.2.9 Archaeology & Cultural Heritage

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Impact to existing archaeology and/cultural items	Archaeological sites within the Project site	• A Cultural Management Plan will be developed to include locations and procedures to ensure protection of these archaeological sites. • To ensure unnecessary damage during O&M, the archaeological sites will be marked (upon consultations with the Institute of Archaeology to ensure marked areas are not vandalized by the public) to ensure that commuting within the WTGs impact or damage these sites. • The O&M staff will be instructed not to interact or disturb any sites of archaeological or cultural importance. • The O&M staff will receive induction training on the importance of the archaeological sites in the Project area from an archeologist from the Institute of Archaeology. • Strict speed controls will be implemented and driving outside designated roads will be strictly forbidden. • In the event, of any damage, the Institute of Archaeology and National Centre of Archaeology will be notified immediately.	Visual observations by O&M staff while carrying out any maintenance activities near known archaeological sites within 100m from the Project components.	O&M Company's E&S Manager

7.2.10 Socio-economics

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Sustainable supply of energy	JSC National Electric Grid of Uzbekistan	• Ensuring that the appropriate operation and maintenance of the Wind Farm to enable a secure supply of renewable energy	n/a	O&M Company Project Company (for external party GRM)
Employment Opportunities	Project workers (both directly employed, contracted and subcontracted workers)Employment Market	• The Projects recruitment policy will ensure a preference for employing workers from the local population especially women where appropriately skilled workers are available locally (or if unskilled positions are available). • The HR Policy will be prepared to ensure consistency with the ACWA Power's Environmental & Social Management System Implementation Manual which will ensure compliance with local labour laws and international ILO and UN conventions. • Workers will be encouraged to develop their careers and may be provided with opportunities to attend training courses and other career development processes. • Training plans to be developed and implemented to facilitate career development and advancement within the local workforce.	Number of persons employed from the villages near the Project site Al training records will be maintained All GRM records will be maintained as per the GRM	

7.2.11 Community Health, Safety & Security

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Public/ Community Safety	Herders and communities	**Wind Farm – Blade and Ice Throw** • In order to minimize the likelihood of blade failure, wind turbines that have been subject to independent design verification/certification (e.g., IEC 61400-1), and surveillance of manufacturing quality will be selected in accordance with IFC EHS Guideline on Wind Energy. • In accordance with IFC EHS Guideline on Wind Energy, the final selected WTG specification will ensure a minimum setback distance of 500m between the turbines and local population. • Periodic blade inspections will be carried out and any defects that could affect blade integrity will be repaired immediately. • Wind turbines will be equipped with vibration sensors that can react to any imbalance in the rotor blades and shut down the turbine if necessary • In accordance with IFC EHS Guideline on Wind Energy, wind turbines will be equipped with ice detectors that shut down the turbine to an idling state when ice is present. • Where wind turbines are required to operate in icing conditions, warning signs will be posted at least one rotor diameter from each wind turbine in all directions. • Training to be provided on procedures for shutting down wind turbines before O&M personnel access the site during icing conditions • Wind turbines will be equipped with ice detectors to control blade-heating systems, which are designed to release ice from the blade surface, thereby maintaining the efficiency of the turbine; the blade surface finish may also affect the efficiency of heating systems. **OHTL** • The OHTL towers will be installed in accordance with international best practice. • Automatic fault/damage detection system will be installed to enable early detection of any faults with OHTL installation. • Safety signals and warning signs will be posted along the OHTL (these will indicate the HZP). • The tower will be tested for collapse to ensure design and installation is in line with National Electric Grid Uzbekistan (NEGU) & international best practice.	Cases of communicable diseases identified on site that could pose risks to surrounding communities, with data from the site clinic or HSE personnel. Number of grievances successfully closed through the Grievance Management System. Records of the average time taken for grievance processing and closure, including observed trends. Records of open grievances, the methods available for grievance submission, and related trends. Topics raised in grievances and emerging trends through the Grievance Management System. Records of incidents, accidents, and near misses involving external parties, based on daily monitoring procedures on site. Discharging of firearms by security personnel on site	Project CLO O&M Company's HSE Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		Project • All risks to public safety will be appropriately addressed and prepared for in the operational phase 'Emergency Preparedness and Response Plan' and training. • The plan will include the appropriate procedure to respond to any such incidents, as well as site specific contact details and details of external agencies who may be required. • The employees during the operational phase will undergo a Code of Conduct training to ensure smooth coordination with the neighbouring community. • Appropriate mechanisms for emergency control (e.g. firefighting equipment) will be placed at suitable positions around the site. • Grievance Redressal Mechanism will be made accessible to the community to ensure that community members raise grievances to the Project leadership. • Sexual harassment or violence in and out of the Project site will not be tolerated and the O&M Company will work with local community leaders and government officials to ensure that any complaints are addressed in accordance with the law. • The Health and Safety teams on site will provide advice during training/inductions on exposure to disease including preventative measures e.g., TB, STDs and HIV/AIDS. • The Project Company and O&M Company will conduct on-going awareness campaigns targeted to children and young adults about the risks and dangers of trying to access, play or vandalise any project facilities.		
Public/ Community Security		• The project will employ its own security staff who will provide 24/7 security control across the Project site and dedicated security staff at gatehouses. • The security personnel will be regularly trained on GBVH code of conduct including how to handle grievances related to GBVH from the community. • All vehicles entering the site will require pre-approved clearance and will need to be registered. Project security will record all instances of incoming vehicles. • CCTV will be installed at key locations around the site and at gatehouses. • Appropriate lighting will be provided at gatehouses for security personnel to prevent unauthorised access. • Project personnel will only be provided access to the construction site with valid ID cards and permits to work in line with HSE requirements.		
Grievance Mechanism		• The project will implement an appropriate system to allow external parties to raise grievances in regard to the Project.		

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• The Grievance Mechanism will be clearly defined, transparent and accessible to identified stakeholders. • EPC Contractor will appoint a community liaison officer preferably from the local community who will maintain communication with the local leaders and community members. • The grievance mechanism will be confidential and provide referral and support system for any workers reporting cases of GBVH.		
GBV, SEA & SH		• The Project Company and the O&M Company will conduct a GBV/SEA/SH risk assessment in consultation with relevant stakeholders including women leaders and those working with young adolescent girls and boys. This will also include the identification of potential interventions and risk mitigation measures. • ACWA Power will develop a GBVH policy and disclose it to the EPC Contractor and its employees. • The O&M Company will develop and implement a Project specific GBVH Policy detailing the list of unacceptable behaviour among workers, provisions for reporting, sanctions for perpetrators and available resources & support systems for the victims in accordance with lenders and Uzbek requirements including ACWA Power's Environmental & Social Management System Implementation Manual. • Awareness training will be mandatory for all Project workers regarding the GBV/SE/SH risks and the workers responsibilities and the legal consequences of being a perpetrator. • Training will be provided to GBVH focal point on the risks of GBV/SEA/SH and information provided on how to deal with any GBV/SEA/SH related cases. • GBVH policy will be communicated to community members and training provided to the community members particularly women on the risks of GBV/SEA/SH. Information will be provided on how to report and deal with any GBV/SEA/SH related cases and the services that will be made available to offer support to any of the victims. • Approach towards GBV/SEA/SH prevention, mitigation and response will be survivor centered and ensure confidentiality, dignity and respect to them. • The Project staff will be trained on how to preserve the safety of the women, girls, boys when interviewing them and collecting information about their experiences on GBV/SEA/SH. • The Project will provide essential services for survivors such as access to counselling services, support groups, legal support etc. at no cost to them. • All determined cases of GBV/SEA/SH will be referred to relevant legal entities in the Project area for further investigation and prosecution.	Record of any conflicts between workers and community members, including cases of sexual exploitation, abuse, or harassment (SEA/SH) Number of SEA/SH grievances received and handled through a survivor-centred approach, including the number of cases referred to legal entities for redress. Average period taken to handle SEA/SH grievances in line with lenders' requirements, including referral timelines to legal entities.	Project CLO O&M Company's E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• The project grievance mechanism will be made available to project workers and community members and will ensure that survivors' information is confidential and kept anonymous. • All cases relating to GBV/SEA/SH will be documented and closed. • The O&M Company will prepare and implement a GBV/SEA & SH Prevention and Response Action Plan which will put necessary protocols and mechanisms to address the risks of SEA/SH and how to address any allegations that may arise in accordance with the World Bank Good Practice Note on Addressing SEA/SH in Investment Project Financing involving Major Civil Works.		
Human Rights		In addition to adhering to the national human rights requirements, ACWA Power and the O&M Company will each develop a human rights policy. The policy will be in line with the UN Guiding Principles on Business and Human Rights and it will: Be approved at the most senior level of the company; • Informed by relevant internal and external expertise; • Stipulate the O&M's human rights expectations of personnel, local communities and other suppliers directly linked to the operational phase of the project; • Be publicly available and communicated internally and to the relevant stakeholders; • Be reflected in the other policies and procedures to embed it throughout the operational phase activities.	Record and track complaints from local communities relating to potential human rights violations associated with the Project.	Project CLO

7.2.12 Labour & Working Conditions

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
All Impacts	Project Workers	The Project Company & O&M Company will ensure that the following plans/procedures/policies are in prepared and implemented: - Emergency Preparedness & Response Plan - Worker Code of Conduct - Labour Management Plan - Human Resources Policies & Procedures - Human Rights Policy - GBVH Policy - Stakeholder Engagement Plan (including the implementation of the Grievance Mechanism).	Monitoring will be undertaken through periodic audits, review of records and reports, site inspections, and verification of grievance and incident logs during construction and operation.	O&M Company's HSE Manager
Occupational Health and Safety		• Workers will be provided with a safe and healthy work environment, taking into account inherent risks and specific classes of hazards associated with the project. • The Project's Operator will implement and maintain an OHS management system specific to the operational phase taking into account specific risks associated with the project, legal requirements and duty of care. • The Operator of the OHTL will ensure that adequate training with regards to electrocution, working at height and other risks is provided to O&M personnel responsible for maintenance works along the transmission line. • EMF safety program for Project workers will be managed through the development of a robust Operational phase Occupational Health & Safety Plan in line with best industrial practices. • Identification of potential exposure levels in the work area including surveys of exposure levels and establishment of safety zones. • Access and maintenance of the OHTL will be limited to trained workers who are equipped with suitable PPE. • Utilization of personal monitors during work activities in high EMF zones. • The Project's Operator will ensure that adequately rated equipment such as hoisting/lifting equipment, tool bags and power tools are given to O&M personnel. • The Project's Operator will be responsible for ensuring that all affiliated sub-contractors comply with the OHS management system. The OHS management system will be in-line with recognised international best practice and as a minimum, this plan will include:	Any classified near miss OH&S emergency situation or incident Documentation and reporting of occupational accidents and incidents. Records of the illnesses the workers are suffering from and an analysis of top diseases. Training records Sanitation Facilities, Office Spaces, Welfare and Rest Areas	O&M Company's HSE Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		- Means of identifying and minimising, so far as reasonably practicable, the causes of potential H&S hazards to workers. - Provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances. - Provision of appropriate equipment to minimise risks and requiring and enforcing its use. - Training of workers, and provision of appropriate incentives for them to use and comply with H&S procedures and protective equipment. - Documentation and reporting of occupational accidents, diseases and incidents. • Emergency prevention, preparedness and response measures		
Forced Labour		• The O&M Company will not employ forced labour, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. This covers any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements. • The O&M Company will not make employment decisions on the basis of personal characteristics, such as gender, race, nationality, ethnic origin, religion or belief, disability, age or sexual orientation, unrelated to inherent job requirements. • Employment relationship will be on the principle of equal opportunity and fair treatment and will not discriminate with respect to any aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment including provisions for maternity/paternity leave, accommodation, access to training, promotion, termination of employment or retirement, and discipline. • *Special measures of protection or assistance to promote local employment opportunities or selection for a particular job based on the inherent requirements of the job, which are in accordance with national law, will not be deemed discrimination.*	Verify recruitment companies, processes, employment contracts, and personnel files to ensure compliance with national labour law and EPC policies. Periodic checks on employment arrangements Monthly audits of accommodation standards against IFC/EBRD requirements and tracking of any complaints or non-compliances. Track the number, type, and resolution time of worker grievances	O&M Company's HR Manager & E&S Manager
Child Labour		• The O&M Company will comply with all relevant national laws, lenders requirements and ILO provisions related to the employment of minors. • Young people below the age of 18 years will not be employed in hazardous work and all work of persons under the age of 18 will be subject to an appropriate risk assessment	Routine checks of worker personnel files to confirm proper documentation (national ID/passport)	O&M Company's HR Manager & E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
			and evidence of age verification at recruitment.	
Wages, working hours, right to rest, benefits, and retrenchment		• Wages, benefits, leave days and other conditions of work offered will, overall, be comparable to those offered by equivalent employers in the relevant region of that country/region and sector concerned. The wages to all the workers including to any unskilled workers will be enough to constitute for a living wage. • If the O&M Company anticipates collective dismissals associated with the proposed project, the O&M Company will develop a plan to mitigate the adverse impacts of retrenchment, in line with national law and good industry practice and based on the principles of non-discrimination and consultation. Without prejudice to more stringent provisions in national law, such consultation will involve reasonable notice of employment changes to the workers' representatives and, where appropriate, relevant public authorities so that the retrenchment plan may be examined jointly in order to mitigate adverse effects of job losses on the workers concerned. The outcome of the consultations will be reflected in the final retrenchment plan. • The workers/representatives will be involved on any labour reduction measures including those relating to COVID-19. The O&M Company will document and communicate to all workers their working conditions and terms of employment including their entitlement to wages, hours of work, overtime arrangements and overtime compensation, and any benefits (such as leave for illness, maternity/paternity, or holiday).	Records of contracts, payments, receipt of benefits, leave entitlements, retrenchment etc.	O&M Company's HR Manager & E&S Manager
Gender Risk - Gender Based Violence and Harassment		• The workers will be provided with information regarding worker code of conduct in local languages as part of their employment contract which will include provisions for reporting GBVH (either in person or anonymously), investigation procedure, termination and disciplinary action against those who perpetrate gender violence and harassment. • The O&M Company will develop and implement a Project specific GBVH Policy detailing the list of unacceptable behaviour among workers, provisions for reporting, sanctions for perpetrators and available resources & support systems for the victims in accordance with lenders and Uzbek requirements including ACWA Power's Environmental & Social Management System Implementation Manual. • The O&M Company will conduct mandatory regular training and awareness raising for the workforce about gender-based violence and harassment towards local community members and their colleagues especially women. • The workers will be made aware of the laws and regulations that make sexual harassment and gender-based violence a punishable offence which is prosecuted. • Mandatory and regular training for workers on required lawful conduct in host communities and legal consequences for failure to comply including dismissal.	Human rights complaints/violations as reported by Project workers including workers hired through third-parties or in the supply chain	O&M Company's HR Manager & E&S Manager

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
		• O&M will provide safe, secure and separate living spaces and sanitary facilities for the male and female workers (lockable sanitary facilities will be mandatory for women). • Provision of opportunities for the workers to regularly return to their families. • O&M Company will allow submission and investigation of anonymous sexual harassment complaints by workers and host community members and protect the confidentiality of the complainants. • The O&M Company will work in close coordination with the local authorities in investigating any complaints relating to gender violence and harassment in the host communities where it relates to Project workers. • O&M will identify local based GBVH/SEA/SH organizations that can offer support to those who experience violence or harassment. • The O&M's HR policy will include a non-discrimination policy and a code of conduct. • The O&M's HR policy will include GBVH policy applicable to all employees and sub-contractors.		
Grievance Mechanism		• The O&M Company will provide a Grievance Mechanism for workers to raise reasonable workplace concerns including GBVH. The client will inform the workers of the grievance mechanism at the time of hiring and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides feedback to those concerned, without any retribution. The mechanism should not impede access to other judicial or administrative remedies that might be available under law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.	Grievances received and addressed	O&M Company's E&S Manager
Human Rights Policy		In addition to adhering to the national human rights requirements, ACWA Power and the EPC Contractor will each develop a human rights policy. The policy will be in line with the UN Guiding Principles on Business and Human Rights and will be: • Be approved at the most senior level of the company; • Informed by relevant internal and external expertise; • Stipulate the O&M's human rights expectations of personnel, local communities and other suppliers directly linked to the operational phase of the project; • Be publicly available and communicated internally and to the relevant stakeholders; • Be reflected in the other policies and procedures to embed it throughout the operational phase activities.	Human rights complaints/violations as reported by Project workers including workers hired through third-parties or in the supply chain	O&M Company's E&S Manager

7.2.13 Climate Change

Potential Impact	Receptors	Mitigation and Management Measures	Monitoring	Responsibility
Increased Temperatures and Extreme Heat	Project structures and operation Employees	• Ensure the design specifications are selected for operation at 40°C. • Ensure equipment and machinery can operate continuously at rated power/current across full site conditions without exceeding temperature rise limits (35°C). • Account for exceptional electric and electromechanical stresses in design and procurement. • Install a comprehensive fire protection system with detection and response facilities. • Use fire-resistant materials for WTG structures, cabling, and other components. • Consider advanced monitoring systems to detect early issues (e.g., reduced output due to smoke, heat damage). • Outdoor activities limited mainly to periodic maintenance, reducing exposure. • Safety measures for workers' risks of heat-related illnesses addressed in the Labour and Working Conditions Chapter (e.g., hydration, protective protocols, heat management).		EPC Contractor (Relevant sub-contractors will also need to comply with mitigation for their works) Project Company (for external party GRM)
Extreme Cold	Refer to health and safety mitigation under section 7.2.11 and 7.2.12			
Flood Risk	Refer to flood risk mitigation under section 7.1.3			

8 E&S Management Plans & Procedures

Once environmental & social aspects and associated risks have been identified and documented, associated controls will be developed that are commensurate to the level of anticipated severity, likelihood and any statutory or lender requirements.

8.1 Top-Level E&S Management Plan (CESMP and OESMP)

The key E&S management plans will be the CESMP and OESMP; respective to construction and operations.

The CEMSP and OESMP will comprise a stand-alone document structured to detail how environmental and social risks, impacts, opportunities and compliance will be managed and monitored. This shall be the top-level management plan document prepared by the EPC Contractor and O&M Company respectively.

The typical content of a CESMP/OESMP has been outlined below. This is not mandatory to be structured in this manner, but it is expected that the headings and sub-headings as a minimum are captured within the respective CESMP/OESMPs.

- INTRODUCTION
  - Scope of the CESMP/OESMP
  - Objectives of the CESMP/OESMP
  - Structure of the CESMP/OESMP
  - Limitations
- PROJECT DESCRIPTION
  - Project Rationale and Background
  - Project Location
  - Land Use
  - Sensitive Receptors
  - Overview of Project Components
  - Overview of Associated Facilities
  - Overview of Construction/Operational Works and Workforce Requirements
  - Overview of Construction/Operational Facilities
  - Project Schedule (for the CESMP)
- REGULATORY FRAMEWORK
  - Background of Project Environmental Permitting (and status)
  - Overview of Regulatory Framework and Compliance Obligations
    - Regional and International Treaties and Conventions (Uzbekistan is a signatory of)
    - Uzbekistan Legislation

    - Lenders Requirements
    - Environmental Standards

- ENVIRONMENTAL AND SOCIAL MANAGEMENT
    - Summary of Environmental and Social Management System (ESMS)
    - Reference to E&S Policies
        - Project Company E&S Policy
        - Other EPC E&S Policy (if applicable)
    - Statement of other supporting/complementary Plans and Procedures
    - Organisational Structure
        - MEEPCC
        - Project Company
        - EPC Contractor (for CESMP) / O&M Company (for OESMP)
        - Sub-contractors
    - HSSE Roles and Responsibilities
    - Competency Needs for HSSE staff
    - Environmental Awareness and Training
        - Environmental & Social Induction Training
        - Toolbox Talk Environmental & Social Training Sessions
        - CESMP/OESMP and other specific E&S Training
    - Internal and External Communications
        - Internal Communication
        - External Communication
        - Liaison with Regulator
    - Inspections and Audits
        - Daily and Weekly Inspections
        - Internal Audits
        - Annual Internal Audits
        - External Audits
    - Non-conformity, Incidents and Corrective Action
        - Non-Conformity, Investigation and Response
        - Incident Definition, Reporting, Investigation and Response
        - Corrections and Corrective Actions
    - Control of Records
- MITIGATION, MANAGEMENT AND MONITORING
    - Air Quality
    - Noise & Vibration
    - Soil, Geology, and Groundwater
    - Hydrology and Surface Water
    - Terrestrial Ecology and Avifauna
    - Landscape and Visual Amenity

- Shadow flicker (OESMP)
- Solid Waste and Wastewater Management
- Traffic and Transportation
- Archaeological and Cultural Heritage
- Socioeconomics
- Community Health, Safety & Security
- Labour and Working Conditions
- Climate Affairs

- MONITORING SUMMARY
- APPENDICES.

8.2 Supporting ESMS Management Plans

In alignment with the expected Project impacts (based on ESIA Volume 2), the following table provides a list of plans that have been identified to be part of the construction and/or operational phase ESMS documents.

Table 8-1 Supporting ESMS Management Plans

Plan / Procedure	Responsibility	Purpose and Key Requirements
Reptile Relocation Plan	Pre-clearance	A Reptile Relocation Plan is required for the Uzbekistan Central Asian Tortoise. The Plan will outline the methodology and results of the identification of release sites, erection of fencing to exclude relocated tortoises in the temporary construction facilities footprint, monitoring and reporting requirements as well as assigned roles and responsibilities. An Ecologist as part of EPC contractor team to be on site throughout all construction works from the time of LNTP (inclusive of all early site preparation works), and throughout the entirety of the construction period.
Biodiversity Management Plan (BMP) & Biodiversity Monitoring and Evaluation Programme (BMEP)	Construction & Operation	BMP: details the biodiversity-related mitigation, management and monitoring commitments as well as the assigned roles and responsibilities of the relevant implementing party. This will include the flora and fauna relocation measures, Habitat Restoration Plan, Ecological Chance Find Procedure, Post-Construction Fatality Monitoring (PCFM) aligned with the Good Practice Handbook and Decision Support Tool (IFC, EBRD, KfW 2023), etc. BMEP: will demonstrate firstly compliance with biodiversity commitments and secondly effectiveness of the mitigation in achieving desired outcomes through integration of adaptive management.
Biodiversity Action Plan	Post-construction	Measures intended to achieve a "net gain" for CH triggering species will be developed in consultation with regional stakeholders and implementation partners and described in the Project's Biodiversity Action Plan (BAP).
Habitat Restoration Action Plan	Post-construction	The purpose of the plan is to provide the methodology for post-construction restoration of laydown and other areas for re-wilding and restoration of native habitat types. The requirements will include the areas to be restored as well as the required monitoring post-restoration.

Plan / Procedure	Responsibility	Purpose and Key Requirements
OHTL mitigation and Monitoring Plan	Pre-Construction and Operation	The Plan describes types of mitigation BFD, anti-electrocution measures, installation protocol, timelines for installation and post installation quality control monitoring protocol for installed devices to ensure that devices remain on the lines and in effective working order.
Post Construction Fatality Monitoring Plan	Pre-operation and Operation	Monitoring will be done to capture data on mortalities and provide adaptive management if needed. The monitoring will be continued minimum of three years. This plan will outline the on-going monitoring and management plan for mortality along the WTGs and OHTL. It will include as a minimum: • Methodology for monitoring mortality • Thresholds for sightings/mortality counts that will trigger adaptive management and/or compensatory measures • Monitoring program • Reporting requirements.
Collision Risk Management Plan	Operation	This will include the requirement for a systematic carcass search with searcher-efficiency and carcass-persistence bias trials to verify real collision rates. Species-specific annual fatality thresholds derived from Potential Biological Removal (PBR) analysis are monitored through post-construction carcass searches. If thresholds are approached or exceeded, adaptive management is triggered for the relevant turbines and seasons. Observer-led SDOD will be implemented as an adaptive management measure. Its detailed strategy is under discussion with lenders and will be incorporated in the CRMP as finalized.
Cut-in Speed Curtailment Plan for Bats	Operation	The plan will define curtailment thresholds, triggers, monitoring requirements, and adaptive management measures based on post-construction bat monitoring results and lender/regulatory requirements.
Blasting Protocol	Prior to any blasting activities	The Protocol will define blasting design, timing restrictions, buffer zones, exclusion zones, and monitoring measures to minimise risks to workers, herders, livestock, and fauna, including priority bird species and their breeding season (e.g. Western Marsh Harrier from March to September). The Protocol will include pre-blast clearance procedures, advance notifications, coordination with herders, livestock management measures, and strict access control during blasting. Measures to control noise, vibration, fly rock, and air overpressure will be defined, supported by monitoring where receptors are present. Clear roles, responsibilities, training, incident reporting, and adaptive management measures will be included. An Ecologist, as part of the EPC Contractor's team, will be present on site during these activities.
Stakeholder Engagement Plan	Construction & Operation	***Note:*** *Being prepared in parallel to ESIA stage for the Project.* To identify project stakeholders, identify communication protocols for engagement with stakeholders. To identify frequency or event-based communication with stakeholders (i.e. for emergencies and specific grievances). To detail the grievance mechanism or provide a reference to a separate grievance mechanism for external parties.
Internal Grievance Mechanism	Construction & Operation	***Note:*** *This has been incorporated into the SEP, which was prepared in parallel to ESIA stage for the Project.*

Plan / Procedure	Responsibility	Purpose and Key Requirements
External Grievance Mechanism		To identify the procedure for external parties and all site staff to be able to raise issues, concerns and opportunities for improvement for any aspect of their employment on the project including issues relating to GBVH and sexual exploitation. The mechanism shall be easily accessible (including for any vulnerable groups), non-discriminatory and provide a transparent process to raise concerns or complaints, which may be issued in an anonymous nature. The mechanism shall specify the roles and responsibilities of internal staff with regard to the grievance mechanism and the procedure for responding to received grievances, including the timeline for response, engagement mechanisms and record keeping.
Occupational Health & Safety Plan	Construction & Operation	Identify the required controls for worker health and safety during the construction, commissioning and operational phases. As a minimum, this plan will include: • Means of identifying and minimising, so far as reasonably practicable, the causes of potential hazards to workers. • Provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances. • Provision of appropriate equipment to minimise risks and requiring and enforcing its use. • Training of workers, and provision of appropriate incentives for them to use and comply with health and safety procedures and protective equipment. • Documentation and reporting of occupational accidents, diseases and incidents. Emergency prevention, preparedness and response arrangements.
Emergency Preparedness and Response Plan	Construction & Operation	To identify the contingencies put in place for a variety of potential emergency situations relevant to the construction, commissioning & operational phases. The plans will outline the response mechanisms, roles and responsibilities, training requirements, internal communication, equipment and relevant engagement with external stakeholders. Requirements for on-site equipment will be established based upon the potential emergency risks, including training provisions for site personnel in regard to such equipment. This plan is to include spill response and contingency in the event of accidental leaks and spills.
Waste Management Plan	Construction & Operation	To identify site specific requirements for waste and wastewater management, containment of wastes (segregation, storage area specifications and locations), collection methodologies & transport (identification of licensed contractors and the process to engage), treatment/disposal (identification of licensed treatment and disposal sites), record keeping and reporting requirements related to waste and wastewater. To include measures to limit instances of contamination to soils and groundwater.
Hazardous Material Management Plan	Construction & Operation	To identify locations for material storage, storage requirements and handling procedures to minimise environmental and H&S risks. Specific method statements regarding the handling of materials shall be detailed, as well as training requirements for staff involved in such activities. The plan will identify locations for hazardous material storage, storage requirements (specifications of bunds and

Plan / Procedure	Responsibility	Purpose and Key Requirements
		buildings/warehouses to ensure environmental and H&S protection, segregation requirements etc.) and handling procedures to minimise environmental risk. The plan will outline record keeping as per chain of custodies, requirements for MSDS and roles & responsibilities. Staff involved in chemical management, procurement or overseeing on-site deliveries shall be specified in the plan and provided with training for the provisions of this plan (all training to be linked to the training plan). To identify locations for any fuel and chemical unloading, associated training requirements and associated pollution attenuation/spill response equipment that are to be in place regarding any unloading of fuel to larger tanks or chemicals to storage areas on-site. This should be linked or inclusive to the pollution prevention plan.
Water Management and Implementation Plan	Construction & Operation	This plan will detail the specific mitigation measures to be implemented to manage and conserve available water resources during construction. The plan will include but not be limited to the following information: • Identifying all potential wastewater sources, potential composition, treatment techniques and discharge points. • Specifying the water conservation initiatives to be implemented at construction camps.
Environmental & Social Monitoring Plan	Construction & Operation	Monitoring is required to demonstrate compliance with national environmental & social standards and lender requirements. The monitoring plan is to specify monitoring requirements for all ESIA parameters (as specified in ESIA Volume 2 – as a minimum). The plan will therefore need to include: • What parameters need to be monitored and measured and at what locations. • The methods for monitoring measurement, analysis and evaluation to ensure valid results. • The criteria against which compliance and performance should be measured. • When and at what frequency monitoring needs to be performed. • How the results from monitoring and measurement should be analysed and evaluated (independent or internal).
Traffic & Transportation Management Plan	Construction & Operation	The plan will identify any specific requirements for heavy, or oversize loads, including timings of deliveries, specific routes (to minimise disruption), engagement mechanisms with external transport authorities (as per the SEP, e.g. local government). To include measures to minimise congestion, fuel use and risks to the public and site staff. Deliveries will be guided by a Traffic Management Plan.
Archaeological Chance Find Procedure	Early Works (LNTP) & Construction	To identify the process for identifying and responding to a potential find of archaeology in the construction working area. It will include the process for halting works in that area, sectioning off potential artefact and external communication with relevant regional authorities as consistent with SEP.
Human Resources Policy (and related Procedures)	Construction & Operation	Human resources policies and procedures will be adapted appropriate to the size of the workforce required for operation and maintenance requirements. Policies and procedures must be prepared to demonstrate consistency with the requirements of national legislation and lenders requirements. There is a need to prepare a workers 'Code of Conduct'.

Plan / Procedure	Responsibility	Purpose and Key Requirements
Workers Accommodation Plan	Early Works (LNTP) & Construction & Operation	This plan will outline the process and standards for the accommodation for the Project workforce. It will include accommodation areas directly managed by the Project or rented/shared (if any) to accommodate direct Project employees and/or temporary or other contract staff (dedicated to the project). Accommodation areas in use by sub-contractor companies/staff (where staff are dedicated for the Project) will also be included.
SEA & SH Prevention & Response Action Plan	Construction & Operation	This plan will include specific arrangements for the Project by which SEA/SH risks will be addressed. It will include as a minimum: • Awareness raising strategy which describes how workers (regardless of rank) and local communities will be sensitized to SEA/SH risks, and the workers responsibilities; • How the Project will provide information to employees and the communities on how to report cases of SEA & SH to through the Project's Grievance Mechanism. • The process of notifying the EPC Contractor & O&M Company of allegations; and • SEA/SH support groups/service providers to which survivors can be referred to and the corresponding contact details. The plan will also include an Accountability & Response Framework which details how allegations of SEA/SH will be handled, including the investigation procedures and disciplinary actions for violation. It will also include procedures that clearly lay out confidentiality requirements and other safety and ethical principles for dealing with SEA/SH cases.
Gender Based Violence & Harassment (GBVH) Policy	Construction & Operation	The purpose of this policy will be to develop a safe, supportive, non-discriminatory workplace for all employees and create a common awareness and understanding that Gender Based Violence & Harassment, Sexual Exploitation & Abuse and Sexual Harassment have no place in this project. It will aim to create a clear system for reporting, company response and company/legal sanctions for such behaviour.
Security Plan	Construction & Operation	The security plan will be based on a security risk assessment of the reasonably foreseeable security risks (linked with security risks in the Emergency Preparedness and Response Plan), and tailored with the necessary management provisions, staffing requirements, equipment, training and defined processes to implement effective mitigation to manage or prevent these risks. The security plan will ensure applicable alignment to the necessary codes of conduct required by law enforcement under the United Nations principles for Law Enforcement Officers.
Recruitment Plan	Construction & Operation	This plan will provide set of actions for the recruitment of the workforce. The plan will detail the procedure for effective recruitment of local staff (where available), the positions that could be filled by unskilled, semi-skilled and skilled local workforce, mechanisms that will be in place to ensure there is non-discrimination of women in assessing recruitment procedures and the training ton be provided for each job role. The plan will also specify how working conditions and terms of employment are compliant with national labour, social security and occupational health and safety laws. The EPC Contractor and O&M Company will ensure that the following documents are prepared prior to the employment of workers.

Plan / Procedure	Responsibility	Purpose and Key Requirements
		• Employment agreements and recruitment policies; • Equal opportunities and non-discrimination policy (incorporating maternity policies and policies associated with GBVH); and • Child and forced labour policies / procedures (covering recruitment fees and arrangements, as well as document (e.g. passport) retention.
Labour Management Plan	Early Works (LNTP) & Construction & Operation	This plan will set out responsibilities and management practices associated with the management of labour during construction and operational phase of the Project. It will also ensure that all personnel involved in the construction and operation of the Project EPC, subcontractors and O&M comply with the Project Company's obligations on labour management and in line with national and lenders requirements.
Influx Management Plan	Early Works (LNTP) & Construction	The EPC Contractor will develop an Influx Management Plan to provide a clear set of actions that will be undertaken for the management and mitigation, monitoring and evaluation of impacts related to worker influx in the Project area.
Local Content Plan	Construction	This plan will clearly identify the Project commitment to purchasing goods and services (where practicable without compromising on the quality and standard requirements for the Project). It will also set expectations with regards to the extent goods and services can be purchased from the local market in order to benefit local businesses without potentially leading to higher prices for local consumers. This plan will be shared with local businesses interested in providing goods and services to the Project.
Supply Chain Management Plan	Early Works (LNTP) & Construction	The Project Company will develop a Supply Chain Management Plan will include: • The requirement for Project Company's HR policy and procedures and worker Code of Conduct will be applied to all suppliers; • The pre-qualification assessment & process to be undertaken prior to engaging core suppliers (to include review potential supplier/vendor labour issues and risks); • Monitoring/audits to be undertaken to evaluate suppliers' compliance and adequacy of implemented measures, etc.
Contractor Management Plan	Early Works (LNTP) & Prior to construction	ACWA Power/Project Company will develop the CMP for managing and monitoring the E&S performance of the EPC Contractor and their sub-contractors in line with the E&S commitments.
De-commissioning Plan	De-commissioning	Decommissioning Plan will be developed 12 months prior to decommissioning, and this will include detailed methods for material re-use, recycling and disposal of wastes.
Whistleblowing Policy	Construction & Operation	The Whistleblowing Policy will provide a safe and confidential mechanism for employees and stakeholders to report unethical, illegal, or unsafe practices. It will ensure clear reporting procedures, protection against retaliation, confidentiality of whistleblowers and an impartial process for investigating and addressing concerns.
Land Access Procedure	LNTP, Prior to construction	The Land Access Procedure defines the process for accessing third-party land during the LNTP phase, ensuring compliance with project and lender requirements. It includes land acquisition guidance, consultation requirements for Project-Affected

Plan / Procedure	Responsibility	Purpose and Key Requirements
		Persons (PAPs), and the Grievance Redress Mechanism (GRM) for addressing related concerns, amongst other topics.
Permit Register	Construction & Operation	The Permit Register will serve as a tracker to manage all permits required for construction. It will track specific permits that are required and ensure that processes are in place for timely renewals.
Resettlement Action Plan	Construction & Operation	A RAP was prepared as part of the ESIA and will be implemented to manage land acquisition and economic displacement in line with national legislation and lenders requirements, ensuring that affected persons are compensated, livelihoods are restored, and impacts are addressed through meaningful consultation, disclosure, and a functional grievance mechanism.

8.2.1 Other Recommended Plans and Procedures

Besides the required ESIA plans and procedures stated above, the following plans and procedures are also recommended for development and implementation as part of the ESMS.

Table 8-2 Recommended Plans and Procedures

Plan / Procedure	Project Phase	Purpose and Key Requirements
Site Inspection & Audit Plan & Procedure	Construction & Operation	To specify the timing and frequency of inspections (e.g. daily, weekly walkovers) and audits (including internal & external independent audits for the lenders as appropriate). To detail the methodology of such inspections and audits to ensure Environmental and Social Issues required in Uzbekistan required by project lenders are adequately covered. For internal audits, the procedure should identify the audit scope (site, laydown areas, accommodation areas, sub-contractor areas etc.), audit criteria (e.g. CESMP, OESMP, ESMS), selection process for audit evidence, reporting format and auditor competence requirements. The Procedure should specify definitions of non-conformance, observations and best practices, as well as detailing the mechanisms for issuance and follow up of Non-Conformance reports, including time periods for action and the implementation of corrective and/or preventative measures. The process to engage with the external independent lenders' auditors should also be listed and linked with the SEP as appropriate.
Environmental & Social Training Plan	Construction, Commissioning & Operation	To identify specific staff members for training and the type (i.e. classroom, practical, toolbox talks) how/when this is to be delivered, the frequency of training and whether follow up training provisions are required. The training should be linked to the specific content of the listed plans and procedures, or key risk activities that may be identified from on-site method statements.

9 ORGANISATIONAL CAPACITY

9.1 Roles and Responsibilities

The implementation of the ESMS requires competent personnel and sufficient allocation of resources.

9.1.1 Project Company

The Project Company will designate a staff member who will have overall accountability for environmental and social management, compliance and implementation of related Project Company Policies. The Project Company will ensure oversight of the EPC Contractor and O&M Company, including to ensure allocation of sufficient resources in the recruitment of competent personnel and in addressing E&S/HSSE related issues.

9.1.1.1 E&S Manager

The E&S Manager will be entrusted with the management of the Project Company's E&S department, which includes in-house Social Manager responsible for the implementation of the draft and final RAP.

- This duty involves, among other responsibilities, technical oversight and support for the implementation of social safeguards in line with the project E&S policy, ESIA, draft and final RAP and ESAP, as well as the coordination of E&S resources, throughout the Project's lifetime.
- Coordination with the Project Company's top management for the establishment of an E&S team within the Project Company, which will include CLOs who will be directly involved in the implementation of this plan.
- Coordination with the Project Company's top management for the recruitment of external experts required for the delivery of livelihood restoration initiatives for PAPs.
- Coordination with the Project Company's top management for the engagement of Lenders' E&S Advisor, for undertaking regular, independent monitoring of this plan including the completion audit.
- Institution of the project-level E&S Policy, which will include a commitment towards the management of livelihood impacts in line with legal requirements and compliance obligations.
- Development of the final RAP (i.e., through updates or addenda) over the course of the project implementation, if additional assessment and mitigation is required for additional impacts, or inadequately mitigated impacts.
- Coordination with the Project Company's financial department for the disbursement of tax-inclusive payments for monetary commitments specified in in

this plan (i.e., internal funding for compensation, transitional support, and livelihood restoration initiatives).

- Coordination with the Project Company's Human Resource (HR) Department and the EPC Contractor's E&S Manager to ensure the delivery of transitional support for PAPs through project employment.
- Review of compensation agreements, in coordination with the Project Company's legal department.
- Participation in site visits and stakeholder engagements integrating into internal and external E&S monitoring related to this plan.
- Review of regular internal E&S monitoring reports, which will include information relating to livelihood impacts and the progress of relevant mitigation.
- Maintaining an inventory of draft and final RAP documents, internal E&S monitoring reports and grievance registers.
- Review of external (community) grievances in relation to land access and livelihood impacts, and oversight of remedial action, in coordination with the Project's EPC Contractor.
- Management of Corrective Action Plans (CAPs) for any RAP-related non-conformances during the project implementation in coordination with the E&S Manager.

9.1.1.2 Social Manager

An experienced Social Manager will be employed by the Project Company and their role will involve among other responsibilities, implementing the requirements of this draft and the final RAP, SEP and the ESAP.

- Implement the requirements of this plan in coordination with the E&S Manager and the overall E&S team including the CLO.
- Build the capacity of the Project Company's CLO and the EPC Contractor's CLO so that they can perform their responsibilities under the requirements of this plan.
- Oversight the roles and responsibilities of the CLOs.
- Review of compensation agreements, in coordination with the E&S Manager and the legal team.
- Engagement with PAPs for the signature of bilateral compensation agreements between the PAPs and Project Company.
- Coordination with the Project Company's EPC Contractor to ensure the provision of construction updates, and timely construction notices and training to PAPs.
- Implementation of transitional support commitments and livelihood restoration initiatives, in collaboration with the EPC Contractor and expert consultants, as relevant.

- Undertake site visits and stakeholder engagements integrating into internal and external E&S monitoring of this plan in coordination with the E&S Manger and CLOs.
- Prepare internal monitoring reports in relation to livelihood impacts and the progress of relevant mitigations.
- Maintain an inventory of documents, draft and final RAP monitoring reports, MoMs, grievance log etc in coordination with the CLOs.
- Respond to grievances received in coordination with the E&S Manager and the CLOs and maintain a GRM log.
- Management of CAP for any non-conformances during the project implementation in coordination with the E&S management.
- Monitoring of compensation and transitional support payments, and follow-ups with PAPs to ensure compensation receipt, prior to displacement and/or site handover to the EPC Contractor.
- Chair the RAP Committee and undertake a capacity assessment to determine the required capacity building needs for the Committee to be able to perform their duties.
- Coordination with the Project Engineer in the implementation of the shadow & flicker mitigations.
- Development of the final RAP (i.e., through updates or addenda) over the course of the project implementation, if additional assessment and mitigation is required for additional impacts, or inadequately mitigated impacts.

9.1.1.3 Community Liaison Officer

Designated CLOs play a subordinate role in the execution of the draft and final RAP, under the oversight of the E&S Manager.

- Development of the draft and final RAP database, and the collection/ completion of contact and banking information for all PAPs registered in the RAP census.
- Preparation of any outstanding compensation agreements for PAPs.
- Ensuring that prior notice has been delivered to PAPs subject to physical and economic displacement involving the demolition of built assets.
- Engagement with PAPs for the signature of bilateral compensation agreements between the PAPs and Project Company.
- Monitoring of compensation and transitional support payments, and follow-up with PAPs to ensure compensation receipt, prior site handover to the EPC Contractor.
- Implementation of transitional support commitments and livelihood restoration initiatives, in collaboration with the EPC Contractor and expert consultants, as relevant.
- Registration and management of the draft and final RAP-related grievances, as well as related record-keeping via grievance forms and the grievance register.

- Preparation of internal E&S monitoring reports, which will include information pertaining to the draft and final RAP implementation.
- Implementation of CAP commitments.
- Take MoMs and keep records of the draft and final RAP Committee activities including those related to their training.

9.1.1.4 Biodiversity Specialist

The Project Company Biodiversity Specialist will be responsible for the following duties suring construction and operation:

- Ensuring the project E&S policy commitments pertaining to the conservation of biodiversity and ecosystem services are implemented by the EPC Contractor.
- Reviewing method statements from different task teams to ensure integration with relevant biodiversity safeguards, in advance of intrusive work (e.g., land clearing and grading).
- Supporting EPC Contractor in managing any incidents of chance finds (incidental encounters threatened wildlife) through coordination with local (district and regional) authorities under the Ministry of Ecology.
- Carrying out inspection or audit visits of construction sites to ensure early works and construction works are carried out in line with the required mitigations.
- Overseeing the implementation of the BMP/BMEP and BAP and the required resources are available for it.
- Reviewing the EPC Contractor's Ecologist's reports on the pre-construction surveys, relocation surveys, site rehabilitation, monitoring etc.
- Visiting the site during the rehabilitation of construction areas during demobilization to ensure the required measures are implemented.
- Contribution to Project Company monitoring reports, and wider reporting on biodiversity protection performance in relation to compliance obligations.
- Reviewing and updating the relevant management sub-plans and procedures, based on performance reviews and any Corrective Actions Plans (CAPs), and related documents controls.
- Coordination with competent authorities on the management of biodiversity chance finds, and compensatory replanting and relocation for floral species in line with mandatory requirements.
- Reporting to the Project Company E&S Manager on biodiversity conservation performance, and the management of significant incidents pertaining to threatened flora and fauna, and ecosystems.
- Coordinating with the O&M Contractor to ensure operational activities are undertaken in a manner that minimises biodiversity risks and aligns with the BMP.

- Reviewing and validating biodiversity operational phase monitoring data, maintaining records, and ensuring timely reporting to Lenders and relevant authorities in accordance with agreed reporting schedules.
- Leading investigations into any non-compliances or exceedance of biodiversity trigger thresholds during operation and developing corrective and preventive actions in coordination with the relevant stakeholders.
- Supporting periodic independent audits or reviews of biodiversity performance during operations and ensuring findings are addressed.
- Acting as the focal point for engagement with regulators, lenders, and specialist consultants on biodiversity matters during the operational phase.

9.1.2 EPC Contractor / O&M Company

The Project Company will contractually delegate responsibility for day-to-day elements of environmental & social management and compliance to the EPC Contractor/O&M Company for the respective project phases.

The EPC Contractor and O&M Company will allocate dedicated roles and responsibilities for ESMS implementation to Project staff, as outlined below.

9.1.2.1 Management Team

In order to effectively implement the Project ESMS, management of both the EPC Contractor and O&M Company will need to:

- Fully support the implementation of the E&S Policy and the internally developed ESMS;
- Ensure that the E&S Policy is included/referenced as part of sub-contractor agreements;
- Promote a positive environmental & social culture and good practices by personal example and leadership;
- Review and approve E&S management budgets, resourcing and staffing;
- Ensure resources (human and financial) are allocated appropriately to manage the ESMS;
- Conduct regular (weekly) site inspections that include a specific focus on E&S issues;
- Promote discussion of E&S issues at team meetings; and
- Monitor and report on environmental management and performance.

9.1.2.2 Responsible for Environmental & Social Management

The EPC Contractor and O&M Company will need to delegate responsibility for implementation of the ESMS and wider environmental and social management and compliance to a full-time member(s) of staff at the Project site.

The staff may be the HSE Manager or the Environmental and Safety Manager, a member of the HSSE Team or a specific Environmental & Safety Officer. Regardless of the 'title' of this role, this person will be the primary project contact beneath the Project Company to implement the ESMS and will report to management, who will further report to the Project Company.

EPC Contractor – E&S Roles & Responsibilities (LNTP and Construction Phase)

Figure 9-1 EPC Contractor Staff Roles and Responsibilities

ROLE	RESPONSIBILITIES
Project Manager	The Project Manager has the sole responsibility of Health, Safety, Environmental and Security (HSE) stewardship of the company. The PM shall lead the project execution team in formulating the best approach to environmental excellence performance. Generally, the Contractor's Project Manager will be responsible for: • Ensure effective implementation, conformance and adoption of the E&S policies, commitments and requirements and communicating the policies to all Project organizations and subcontractors. • All requirements relating to environmental protection including the legal and mandatory regulations of Uzbekistan and expectations; • Approve the project specific CESMP for submission to lenders; • Ensure implementation of the project specific CESMP and associated management plan; • Support and assist the site HSE Team in implementing ESIA, CESMP, and other environmental initiatives related to the Project development; • Assist in the management process of environmental protection and control through environmental safety audits and evaluations; • Develop general environmental protection awareness by promoting meetings and presentations; • Shall be fully responsible for the implementation of all environmental and social contractual requirements at the job site; • Manage environmental incident investigation and reporting; • Develop and ensure the implementation of a project specific Emergency Response Plan • Ensure that the HSE Manager provided adequate training to all site project personnel on environmental, ecological and social requirements. • Attend and lead external and internal environmental audits.
E&S Manager	• Ensure that any relevant permits from appropriate regulatory authorities are obtained prior to the commencement of construction works and updated as necessary throughout construction; • Ensure the availability of required resources for the effective implementation of the CESMP and associated management plans;

Role	Responsibilities
	• Responsible for ensuring that this CESMP is established, regularly reviewed and updated, and that the plan remains valid throughout the project construction duration; • Review and analyse environmental performance during the Project as reported by the HSE Manager; • Ensure personnel are competent and have the necessary skills to conduct their functions; • Hold regular coordination meetings with Project Engineers and supervisors to ensure that all tasks and activities are planned, coordinated and carried out safely with adequate labour and resources and without severe environmental impact; • Work with the HSE Department to identify training needs and develop training programmes accordingly; • Stop any unsafe activity which is not compliant with national legislation or project environmental requirements
HSE Manager	The HSE Manager shall be responsible for coordinating and implementing the CESMP. The HSE Manager shall support the Environmental Coordinator to facilitate full compliance in striving for environmental excellence. Generally, the HSE Manager is tasked to: • Understand all requirements relating to environmental protection for legal and mandatory regulations of Uzbekistan, and ensure that they are fully enforced on the project; • Determine the most appropriate method of performing activities and delegation of responsibilities for the Contractor's personnel and Sub-contractors by considering best industry practices on environmental and social safeguard; • Ensure that all foremen and supervisors are aware of the project specific ESIA and CESMP and ACWA HSE work requirements before commencing their work; • Keep Records of all incidents and environmental damage that has occurred at the site; • Keep a record of all weekly environmental safety meetings, toolbox talks and the like on site, complete with subject discussed and a signed list of attendees; • Determine cause of any environmental incident occurrence through incident investigation and recommend measures to prevent recurrences; • Conducts environmental training, toolbox talks and inductions in line with the ESIA and CESMP; • To stop work immediately in case of non-compliance observed and/or there are significant environmental effects including social worker welfare risks and associated incidents; • Maintain an environmental incident register, documenting all incidents of compliance/non-compliance with the and keep the Project Manager appropriately informed; • Maintain environmental document control, reporting, inductions and training; and • Participates in weekly and monthly environmental meetings, as required.
E&S Coordinator/ Assistant	• Prepare environmental induction training and awareness talks. • Conduct environmental training, toolbox talks and inductions in line with ESIA and CESMP.

ROLE	RESPONSIBILITIES
	• Undertake regular inspections across the site as required to ensure implementation of project ESIA and CESMP requirements • Keep a record of all weekly environmental safety meetings, toolbox talks and the like on site, complete with the subject discussed and a signed list of attendees. • Inspect the work site daily and correct methods and conditions which may endanger the environment and keep a record daily and report to HSE Manager when necessary; • Record and provide written reports to the HSE Manager of non-conformances or corrective actions with the CESMP; • Has overall responsibility of environmental governance and for implementation of construction contractor's environmental obligations; • Regular liaison with project team to ensure that all required environmental safeguards are being implemented and maintained as defined in CESMP. • Ensuring all corrective and preventative actions identified during inspections and audits are effectively addressed by the project team; • Responsible for preparing weekly toolbox talks on environmental issues for all related staff. • Implementation of the ESIA, CESMP and associated management plans and procedures. • Participate and provide guidance in the regular review of this CESMP and supporting documentation; • Conducts environmental inspections and prepare daily and weekly environmental reports; • Inform Construction Manager and HSE Manager of the need to stop work immediately in case of major non-compliance observed and/or there are significant environmental effects or risks of effects occurring; • Prepare weekly and monthly environmental reports and submit them to the HSE Manager for review and approval. • Review daily, weekly, and monthly checklists and maintaining all records. • Participate in weekly and monthly environmental meetings if arranged by ACWA • Determine cause of any environmental incident occurrence through incident investigation and recommend measures to prevent recurrences. • Maintain environmental document control, reporting, inductions and training;
Ecologist	The EPC Contractor's Site Ecologist will be responsible for the following duties: • Reporting to the EPC Contractor E&S manager and the Project Company Biodiversity Specialist. • Continual updates to the legal and permit registers, based on mandatory requirements set out in relevant legislation related to biodiversity. • Conducting site walkovers in advance of intrusive earthworks (during early works and main construction), to identify any species and microhabitats of conservation importance or ecological importance (e.g., threatened species requiring search, rescue and translocation, and protection of nesting sites for threatened bird species). • Providing refresher training of the Biodiversity Chance Find Procedure and managing any incidents of chance finds (incidental encounters threatened wildlife), in coordination with the Project Company Biodiversity Specialist.

ROLE	RESPONSIBILITIES

	• Carrying out routine monitoring of early works and construction sites to ensure:
	  o works are limited to delineated construction zones to minimize vegetation clearance.
	  o sanitary and flood buffers/ setbacks for waterbodies are strictly observed.
	  o the introduction of any alien and invasive species is eliminated using appropriate physical means.
	  o no harm to threatened fauna, due to entrapment in excavations, workers' fear of safety, and hunting.
	  o disturbed sites are rehabilitated following completion of construction works, in accordance with the approved Site Rehabilitation Plan.
	• Coordinate with the local expert botanist (hired by the EPC contractor) to ensure that all aspects of the reinstatement and restoration plans are adequate and implemented correctly.
	• Coordinate with the local reptile expert (hired by the EPC contractor) to ensure that all aspects of the reptile relocation plan are adequate and implemented correctly.
	• Conducting pre-clearance nest searches within any on-site habitats in the event that any site preparation and construction works are scheduled for the Spring season (i.e., March to May).
	• Carrying out watching briefs during land clearance and earthworks in and around habitats potentially suitable for threatened faunal species, for the duration of construction activities.
	• Identifying biodiversity chance finds (i.e., encounters with threatened faunal species that were not identified during baseline biodiversity surveys within the project sites) and implementing appropriate response measures for confirmed chance finds in coordination with relevant authorities.
	• Maintaining records of biodiversity chance finds and relevant reporting.
	• Maintaining records of roadkill and relevant reporting.
	• Ensuring excavated topsoil is stored separately for back-filling and rehabilitation (and revegetation).
	• Carrying out inspections to identify biodiversity-related observations and non-conformances, which relate to disturbance of natural habitats and management of biodiversity chance finds.
	• Record keeping for all site inspections, findings and remedial actions, to ensure timely close-out of biodiversity-related observations and non-conformances.
	• Supervising the rehabilitation of construction sites during demobilization.
	• Contribution to regular internal monitoring reports, and wider reporting on biodiversity protection performance in relation to compliance obligations.
	• Preparation of training materials relating to the avoidance and mitigation of impacts on local biodiversity, biodiversity training plan integrating into a broader E&S Training Plan, and support in the delivery of related training (i.e., i.e., induction and refresher training).
	• Participation in HSES committee/ management meetings in relation to pertinent performance reviews and any emergent significant biodiversity incidents.

Community Liaison Officer	The EPC Contractor's Community Liaison Officer (CLO) will be responsible for the following duties:

Role	Responsibilities
	• Implementing all project E&S policy commitments pertaining to community health and safety, as well as land access and resettlement planning. • Continual updates to the legal and permit registers, based on mandatory requirements set out in relevant legislation. • Carrying out routine engagement with project-affected communities for the purposes of publicizing updates on the progress of the Project, creating awareness around suitable employment opportunities, sensitizing communities to construction health and safety, and refresher sensitization to the Project's Grievance Redress Mechanism (GRM). • Carrying out regular engagement with the remainder of project stakeholders, including Local Government Authorities and local community leaders, in line with the Stakeholder Engagement Plan (SEP), for the purpose of providing updates on the project implementation and gathering any feedback, concerns and grievances. • Receiving community grievances submitted through grievance forms, phone calls, emails and in-person engagements, managing grievances and concerns via the external GRM, and coordinating remedial action or official feedback on lodged complaints. • Registering all community grievances received using the External Grievance Log, tracking the status of grievance resolution to ensure the closure of complaints in the shortest practicable timeframe (as specified in the SEP), and documenting the closure of grievances upon receipt of positive feedback from aggrieved parties. • Coordinating with the designated Environmental Engineer/ Supervisor and HSE Engineer/ Supervisor on the resolution of community grievances relating to waste management, noise emissions, air pollution, property damage, and traffic congestion. • Coordinating with the designated HR Manager for disclosure of accessible project employment opportunities within project-affected communities and marginalized community groupings in particular (i.e., women, youth, disabled etc.), and delivering guidance procedures for job applications to the communities. • Coordinating with local authorities and relevant departments within the EPC Contractor's organization to manage grievances related to labour influx, such as increased morbidity due to a radical shift in the prevalence of communicable diseases (attributed to labour influx), disruption of productive activities due to various project activities, encroachment of private property and resultant property damage, and adverse influence on local customs and intangible cultural heritage. • Contribution to regular internal monitoring reports, and wider reporting on social performance in relation to compliance obligations. • Participation in external monitoring (audits) by the Project Company and Lenders' Environmental Advisor (LEA). • Preparation of internal training materials relating to the avoidance and mitigation of impacts on community health and safety, livelihoods and social services, social training plan integrating into a broader E&S Training Plan, and support in the delivery of related training (i.e., i.e., induction and refresher training). • Preparation of training and communication materials for engagements with local communities (i.e., construction H&S awareness, GRM, employment). • Maintaining records of all stakeholder engagements, including engagements with local communities.

Role	Responsibilities
	• Preparing updated versions of relevant management sub-plans including the Stakeholder Engagement Plan, based on performance reviews and any Corrective Actions Plans (CAPs), and related documents controls. • Participation in HSES committee/ management meetings in relation to pertinent performance reviews and any emergent significant social and community H&S incidents. • Coordination with the H&S Engineer, other designated internal specialists (e.g., EPC Contractor's medical team) local authorities on the investigation of significant H&S incidents (e.g., injuries and/or fatal accident or Gender Based Violence crime) involving third parties (i.e., members of local communities/ public) and significant social incidents (e.g., community strikes/ protests). • Provision of follow-up information to project-affected communities with regard to any significant H&S and social incidents involving community members. • Ad-hoc support to the delivery of any community development programs launched by the Project Developer/ Company, in collaboration with the Project Company's Social Expert. • Reporting to the EPC Contractor's E&S Manager on the progress and outcomes of continual stakeholder engagement, and the management of all grievances and significant incidents pertaining to local communities, livelihoods and social infrastructure.
Human Resource Specialist	The EPC Contractor's HR Specialist will be responsible for the following duties: • Implementing all project E&S policy commitments pertaining to labour, gender equality, and the protection of human rights in relation to employment and working conditions. • Continual updates to the legal and permit registers, based on mandatory requirements set out in relevant legislation. • Engaging in the recruitment of qualified job candidates on the basis of inherent and non-discriminatory qualification criteria, with special attention to inclusion of candidates from local communities and women. • Ensuring the establishment of comprehensive, translated and mutually available employment contract agreements for all workers, in line with mandatory requirements and lenders' compliance obligations. • Ensuring timely payment of remuneration for all workers, including social security deposits. • Communicating the internal (workers') Grievance Redress Mechanism (GRM) to all directly contracted project workers, through induction training and refresher training. • Receiving worker grievances submitted through grievance forms, phone calls, emails and in-person engagements, managing grievances and concerns via the internal GRM, and coordinating remedial action or official feedback on lodged complaints. • Registering any labour-related legal claims lodged by workers, and arranging for arbitration and/or legal proceedings, in collaboration with designated legal personnel under the EPC Contractor. • Registering all worker grievances received using the internal grievance log, tracking the status of grievance resolution to ensure the closure of complaints in the shortest practicable timeframe (as specified in the SEP), and documenting the closure of grievances upon receipt of positive feedback from aggrieved parties. • Mediating any conflicts between workers.

Role	Responsibilities
	• Conducting procedural investigation into violations of the Project's Code of Conduct (including Gender-Based Violence and harassment) and sanctioning disciplinary and penal action in coordination with relevant management units/ committees. • Engaging relevant authorities in any gross misconduct constituting unlawful offences, for official investigation and prosecution as appropriate. • Participating in initiatory and subsequent internal audits for any centralized accommodation facilities dedicated to construction labour, to ensure housing and welfare conditions are in line with the IFC and EBRD standards for labour accommodation. • Engaging in pre-qualification screening and appointment of EPC sub-contractors with regard to performance on key E&S criteria and standards enshrined in the Project's E&S policies, and management plans and procedures (i.e., track record in E&S performance, organizational capacity for E&S risk management). • Managing pre-qualification screening and appointment of independent recruitment agencies with regard to performance on key labour risk management criteria and standards enshrined in the Project's E&S policies, and management plans and procedures (i.e., track record in ethical and equitable recruitment, any implication in past human rights violations etc). • Incorporating E&S compliance obligations into contractual agreements with sub-contractors engaged for Project's primary activities. • Conducting regular internal audits on EPC sub-contractors and any engaged recruitment agencies, to ensure compliance with requirements related to the Project's Human resource, Human Rights policies and Code of Conduct (CoC), including management systems and safeguards for occupational health and safety, fair and equitable recruitment and employment terms, protection of workers' rights, and prohibition of forced and child labour. • Supporting the implementation of the Project's Supply Chain Management Plan (SCMP). • Conducting vetting (i.e., background checks) for security personnel hired for the project, to ensure recruits have no past implication in workplace incidents involving excessive use of force, and any other form of human rights violation. • Contribution to regular internal monitoring reports, and wider reporting on performance in labour rights, in relation to compliance obligations. • Participation in external monitoring (audits) by the Project Company and Lenders' Environmental Advisor (LEA). • Preparation of training materials relating to the avoidance and mitigation of labour risks and impacts, labour training plan integrating into a broader E&S Training Plan, and support in the delivery of related training (i.e., i.e., induction and refresher training). • Preparing updated versions of relevant management sub-plans and procedures, based on performance reviews and any Corrective Actions Plans (CAPs), and related documents controls. • Participation in HSES committee/ management meetings in relation to pertinent performance reviews and any emergent significant environmental incidents. • Coordination with competent authorities on registration of employees and social security payments.
Security Supervisor	The EPC Contractor's Security Supervisor will be responsible for the following duties:

Role	Responsibilities
	• Implementing all project E&S policy commitments pertaining to occupational health, safety and security, and human rights. • Ensuring the security of all project sites through the implementation of access controls at security checkpoints (i.e., entry gates), site-wide security patrols and CCTV surveillance as appropriate. • Responding to any security incidents within the project sites, in close coordination with local authorities (i.e., local police force) and security personnel stationed at the Project site), to ensure the safety of project workers, and security of project assets. • Aiding official investigation into any security incidents resulting in intrusion, theft and/or property damage, without notice and apprehension. • Maintaining a record of all security incidents and related response and investigation procedures. • Contribution to regular internal monitoring reports, with regard to the occurrence and management of security incidents, and any reported/ observed human rights abuses by the Project's security personnel. • Preparation of training materials relating to site security and the proportionate use of force, a security training plan integrating into a broader E&S Training Plan, and support in the delivery of related training (i.e., i.e., induction and refresher training). • Preparing updated versions of relevant management sub-plans and procedures, based on performance reviews, and related documents controls. • Participation in HSES committee/ management meetings in relation to pertinent performance reviews and any emergent significant security incidents.
Sub-contractors	• Implement the project environmental requirements included by the EPC contractor in the sub-contractors agreement; • All sub-contractors are required to work in accordance with the approved CESMP; • All sub-contractors are required to attend Project and/or site inductions where the requirements and obligations of the ESIA and CESMP are communicated. A record of all subcontractors inducted will be maintained as part of the Project induction and training register; • Sub-contractors, at a minimum, shall ensure that before commencing work that they are fully aware of the provisions applicable to their scope of work and in reference to the following: o Contractor's approved project specific CESMP & HSE Plans and Program; o Understand and comply with all relevant environmental requirements applicable to their scope of work; and o Ensure that all their personnel have the necessary skills, training and qualifications and experience to properly execute their contract scope of work within the provisions of the approved project specific CESMP.

In the event of a chance find of archaeology, this will initially be checked by the Ecologist and E&S Manager. Further, an Archaeologist from the Institute of Archaeology of Uzbekistan will be engaged by the CLO in line with the Chance Finds Procedure.

9.1.2.2.1.1 O&M Company – Roles & Responsibilities (Operations Phase)

It is noted that specific roles and responsibilities for the O&M Company have not been fully defined at this time. It is recommended that the following key roles and responsibilities are covered by the main E&S staff implementing the ESMS during operations.

HSSE / E&S Manager (or commensurate position)

- Fully support the implementation of the E&S Policy;
- Engage with the project management regularly in regard to E&S issues, risks and compliance management;
- Oversee and ensure execution of the environmental and social management programmes by other project parties (such as sub-contractors and key suppliers);
- Monitor the Project to ensure environmental and social compliance (including for sub-contractors - as per the scope of the ESMS);
- Advise management on matters pertaining to the environmental and/or social elements;
- Investigate environmental and social issues, incidents and non-conformances, implement corrective actions and report those to the management/relevant authorities;
- Maintain applicable environmental and social records as required by the ESMS (e.g. incident registers, NCR reports, corrective action reports, grievance register etc.);
- Ensure monitoring programmes are implemented by qualified personnel and report the results to the Project management for review and as a basis for continuous improvement;
- Display and monitor site bulletin boards to ensure they remain 'live' and 'up-to-date' with relevant environmental & social information;
- Coordinate, plan, formulate and/or deliver environmental and social induction training to all project personnel (including subcontractors) as well as regular toolbox talk environmental training sessions;
- Organise programmes and activities to promote environmentally responsible conduct in the prevention of injury, ill health and environmental impact throughout the workforce;
- Stop any unsafe activity which is not compliant with environmental legislation or lender requirements, and correct such work practice and/or conditions before allowing work to resume/commence;
- Act as point of contact for any sub-contractor with regard to environmental issues;
- Ensure that each sub-contractor is aware, compliant and implementing the requirements of the ESMPs;

- Review subcontractor's personnel, qualifications, competency and environmental performance; and
- Undertake regular internal ESMS audits to assess compliance and implement corrective & preventative actions – audits are to include all sub-contractors at the project.

9.2 Environmental & Social Awareness and Training

E&S implementation will not be effective unless the project workforce are aware of their specific responsibilities with regard to environmental protection and social safeguarding. It is therefore necessary for the EPC Contractor/O&M Company to ensure that the workforce are trained appropriately according to the relevant elements of the project ESMS.

Tailored training requirements relevant to elements of works will need to be developed and defined as part of the ESMS (e.g. personnel associated with waste management should require training on relevant components of the waste management plan).

9.2.1 Type of Training Sessions

The EPC Contractor/O&M Company (and as applicable, the sub-contractors) will deliver applicable elements of E&S training within:

- Induction Training
  - To the entire workforce, to include key environmental and social components linked to the E&S Policy and developed ESMS; that are applicable to all employees.
- Tool-Box Talks
  - Environmental & Social tool-box talk training sessions on regular basis to remind workers of E&S considerations when undertaking normal day-to-day activities; and
- Specific training sessions on ESMS and E&S Management Plans
  - To ensure staff are competent to implement the ESMS or undertake activities that may have inherent E&S risks or potential impacts to receptors. All staff with specific responsibilities and with authority to implement mitigation measures and monitoring/audit commitments should be trained in regard to such plans/procedures.

9.2.2 Planning of Training

In order to record identified training needs, the EPC Contractor/O&M Company will develop and maintain a project environmental training matrix (falling under wider HSE training) to identify the training type and frequency required for each staff role.

A training plan/programme will also be prepared to set out the frequency of training requirements.

All training material will be prepared in advance and documented. It will be prepared in English language and applicable local languages or those languages that apply to the engaged workforce. Where necessary translators may be required for specific sessions.

9.2.3 Content of Training Sessions

Induction Training

During project inductions, all project workforce and visitors will receive an element of Environmental and Social induction classroom training, which as a minimum will include an overview of:

- E&S Policy;
- Labour Management;
- Contact details for the EPC Contractor/O&M Company E&S Manager and E&S Engineer;
- Main topics of E&S risk/impact (which will include noise);
- Environmental incident response and internal reporting requirements including who shall be contacted in the instance of an incident;
- Duty of care, highlighting that all staff have a responsibility to carry out their duties in accordance with the E&S Policy and related ESMS and to report any and all environmental incidents.

The induction shall make it clear that interference with any wildlife or archaeological remains shall be strictly prohibited. The training session will also highlight the importance of maintaining environmental & social awareness; the seriousness of environmental & social requirements and that compliance is a condition of employment.

Toolbox Talk Environmental & Social Training Sessions

This will be varied depending on the risks, impacts, opportunities and compliance related to specific activities by construction/operational teams, but may include the following (provided as examples):

- Air quality emissions and control measures for vehicles, plant and equipment drivers/operators;
- Dust control and dust mitigation techniques for heavy vehicles' drivers and dust generating equipment operators;
- Erosion and sediment control for operators of earth moving equipment;

- Hazardous materials handling including handling, transportation and storage of hazardous materials as well as maintenance and refuelling of vehicles and machinery;
- Spill prevention and response for personnel involved in the storage of fuel and other hazardous materials;
- Ecologically significant fauna and mitigation measures for all construction personnel. This includes the actions to be implemented in case of trapped or injured fauna etc.
- Noise control and mitigation measures for vehicles, plant and equipment drivers/operators;
- Traffic control and mitigation techniques for vehicle drivers (e.g. cars, buses, heavy goods vehicles, etc.);
- Waste management and chemicals and hazardous materials management, including transportation and disposal for all construction personnel;
- Emergency management and incident response for all construction personnel;
- Grievance procedure including methods to submit a complaint, review and response period; and
- Gender Based Violence & Harassment (GBVH) including Sexual Exploitation & Abuse (SEA) reporting system and company/legal sanctions for such behaviour.

Specific training sessions on ESMS and E&S Management Plans

Training sessions on the ESMS or specific activities or plans/procedures will need to be tailored and delivered to staff based on their specific content and key considerations. As a minimum, training will be provided for the following management plans/procedures due to the specific risks associated with these aspects:

- All ecological plans & procedures;
- Archaeological Chance Find Procedure;
- SEA & SH Prevention & Response Action Plan; and
- Gender Based Violence & Harassment Policy.

9.2.4 Training Records

Further to the training being undertaken the environmental training records will identify as a minimum:

- Description and purpose of training;
- Date and location;
- Trainer and attendees (with attendance signatures);
- Photos or other documents as attachments to evidence the training.

A consolidated record of training undertaken by all workers will be maintained and will be comparable against the training matrix.

10 INSPECTION AND AUDIT

Monitoring of internal risks and compliance will be undertaken via site-based inspections and Project specific audits (vs. compliance obligations). Such processes are integral requirement of any management system and should be considered as a continual process to ensure the successful implementation of the ESMS.

10.1 Inspections

Various parties and project roles have responsibilities relating to inspection. Inspections will occur on an ongoing basis for the duration of the project lifetime. This will include the following:

- On-going observations made in Project areas that relate to E&S/HSSE risks, impacts and compliance.
  - Such observations can be made by any Project worker but are expected to be made mostly by the dedicated E&S/HSSE roles who have specific responsibilities and expertise to identify and manage such items. This includes HSE Officers present in working areas.
- Formal inspections made via:
  - Management walkdowns;
  - E&S/HSSE team walkdowns;
  - Periodic inspections of certain areas of the site and temporary facilities.

10.2 Internal Audits

The ESMS will establish, implement and maintain an internal audit programme that identifies the frequency, methods, responsibilities, planning requirements and reporting of audits.

The internal audits will be undertaken on a quarterly basis during the construction/commissioning phase and annually during the operational phase.

When undertaking internal audits the following will need to be established:

- Define the scope, audit criteria and the objectives of each audit;
- Select audit staff competent in the audit process and subject matter; and
- Ensure that audit results are reported to relevant senior management.

All internal audits will be documented as formal reports. Where observations and non-conformances are identified these will be recorded and corrective actions undertaken (as outlined in the following section).

10.3 ACWA Power Corporate Audits

It is expected that the ACWA Power corporate HSSE team will audit the Project's management system on an annual basis as a minimum.

10.4 Lenders Monitoring and Reporting

Monitoring is necessary for the lenders and is expected to be undertaken and reported by a competent independent third-party.

The requirements for such monitoring and reporting will be agreed with the lenders in the Project ESAP.

These reports are likely to be based upon site visits to evaluate the implementation of both the ESAP (a covenant to the loan), compliance with applicable E&S standards and the suitability & effective of the established ESMS in practice.

11 OBSERVATIONS, NON-CONFORMITY AND CORRECTIVE ACTION

11.1 Observations

The majority of observations made during inspections are expected to be corrected quickly and easily by the respective responsible parties. Documentation will not specifically be recorded in regard to such observations, although there may well be a record of communication in this regard.

Where observations are more significant or cannot be corrected immediately, these will need to be added to a formal tracking system, such as the Synergy Life system implemented by ACWA Power, or other systematic process, that will enable tracking of finding status and corrective action. It is necessary to include such findings on formal checking systems to ensure that effective corrective actions are taken.

11.2 Non-Conformances

Non-conformances are instances where Project compliance obligations (such as a legal requirement, or ESMS requirement) are not being fulfilled, or cannot be evidenced. Non-conformances will be issued in relation to:

- A breach of an E&S contractual obligations;
- A failure to comply with a Project E&S policy, or related E&S requirement/obligation (including E&S management plans);

Examples of non-conformity include, but are not limited to:

- Commencement of works without ensuring pre-clearance processes are undertaken in relation to PAP compensation, ecological surveys (and any required species translocations);
- Commencement of works without a permit, an approved risk assessment and method statement that covers environmental issues identified herein;
- No review of risk assessment and method statements following any significant changes in requirements that could adversely impact the environment;
- Appointment of a waste transport/disposal service provider that is not appropriately licensed;
- Failure to comply with waste storage/disposal requirements as identified by risk assessment and/or method statement;
- Failure to comply with chemical storage and/or handling requirements;

- Un-containable or uncontrollable spills of fuels or chemicals;
- Undertaken works outside the scope defined within the risk assessment and method statement; and,
- Discharge of untreated, contaminated wastewater to the environment.

All non-conformances identified during audits, inspections and monitoring activities will be recorded and followed up as non-conformity. Each non-conformance will be recorded utilising a developed reporting process. All non-conformances and near misses shall include the following information:

- Location and description of the non-conformance and the criteria/requirement that has been breached;
- The proposed corrective action including who holds responsibility for undertaking this action;
- The proposed preventative action to ensure against reoccurrence of the noncompliance;
- Any required monitoring and follow up; and
- Key performance indicators and a deadline for the successful completion of the corrective and preventive action.

The Project Company shall be made aware of all identified non-conformances immediately.

11.3 Corrective Action

Any situation or condition that is non-conforming or otherwise poses an imminent risk to the environment, or social welfare should be immediately resolved. If a situation or condition cannot be corrected immediately, temporary measures such as necessary for the protection of the environment should be implemented.

All formally recorded observations and non-conformance will require corrective actions to be undertaken. Where non-conformances are raised, a corrective action plan will be developed by the respective non-conforming party. The corrective action plan shall include determination of root cause, proposed corrective actions (to correct the situation and prevent reoccurrence), timelines, required resources and any changes needed to ESMS documentation. The corrective action plan should be approved by the E&S Manager.

Records of implemented corrective actions shall be maintained.

12 EMERGENCY PREPAREDNESS AND RESPONSE

The likelihood of an E&S emergency or incident can be minimised by effective risk management planning and development of applicable response plans as part of an ESMS.

All risk assessments and method statements will need to include consideration of the potential for environmental incidents. Suitable incident response equipment should be maintained at appropriate locations on site and Project staff be suitably trained to use such equipment and respond to such emergencies.

It is expected that the EPC Contractor and O&M Company will prepare and implement an Emergency Preparedness and Response Plan respective to construction and operations.

Note: *All reference to specific emergency response plans and procedures shall be made to the dedicated standalone Project 'Emergency Preparedness and Response Plan'.*

The plan will identify procedures for reasonably foreseeable emergency situations that may relate to the Project. This will include drills at the Project site and any relevant training to specifically involved personnel, as well as use of required equipment for such circumstances. The plan will include site-based actions to take, requirements for co-ordination with the applicable external agencies (i.e. emergency services), as well asl impacted stakeholders and statutory authorities in the instance that a pollution incident occurs.

When establishing the Emergency Preparedness and Response Plan, the following should be considered:

- What emergency situations are reasonably foreseeable related to the project type and project phase under consideration.
- The most appropriate method for responding to an emergency situation;
- Internal and external communication processes;
- The action required to prevent or mitigate environmental & social impacts;
- The need for post-emergency evaluation to determine and implement corrective and preventative actions;
- Periodic testing of planned emergency response actions and required equipment;
- Training on emergency response and emergency equipment use;
- A list of key personnel and emergency services, including contact details (such as fire department, spillage clean-up services);
- Evacuations routes and assembly points; and
- The possibility of the need for mutual assistance from neighbouring organisations/projects.

12.1 Incidents

Incident investigation and analysis will need to be undertaken in co-ordination with the provision of Element 10 established in the ACWA Power HSSE Management System Framework. In summary, this requires clear processes for incident reporting, response, investigation, analysis, follow up and documentation.

13 STAKEHOLDER ENGAGEMENT

13.1 Stakeholder Engagement Overview

Stakeholder engagement can be described as a systematic effort to understand and involve stakeholders and their concerns in the Project activities and decision-making processes. Stakeholders are defined as any group or individual who can affect, or can be affected by, the Project.

The main objectives for stakeholder engagement are:

- To inform the relevant stakeholders about the Project;
- To capture views and concerns of the relevant stakeholders with regard to the project;
- To enhance ownership of the project within the host community;
- To provide a basis for stakeholder participation in impact identification and mitigation.

Consultation is not a single conversation but a series of opportunities to create understanding about the Project among those that are likely to be affected or might have an interest in it, and to learn how these stakeholders view the project and its related risks, impacts, opportunities, and mitigation measures. Listening to stakeholder concerns and feedback can be a valuable source of information to help identify environmental and social risks (real and perceived) and improve project management.

13.2 Stakeholder Engagement Plan (SEP)

A standalone SEP has been prepared, which will be implemented by the Project Company during construction and operations. This should be implemented by the Project Company as the project owner and main public face of the Project; however, certain elements may be delegated to other project parties such as the EPC Contractor and O&M Company.

As a live document this will need to be updated as and when is necessary to ensure the document remains valid with respect to the Project and the applicable stakeholders. The SEP includes a suitable grievance mechanism to allow local community complaints to be raised in a clear process.

Note: *All processes relating to Stakeholder Engagement should refer to the Project Specific SEP.*

13.3 Grievance Mechanism

Note: *All processes relating to Grievance Redress should refer to the Project Specific SEP.*

13.3.1 Worker Grievances

The SEP includes a grievance procedure for workers to raise workplace concerns. The procedure includes an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism allows for anonymous complaints to be raised and addressed.

The grievance mechanism must not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

All staff will need to be informed of the grievance procedure during their induction to the project and the procedure will be made readily available and easily accessible.

13.3.2 External-Party Grievances

The SEP also includes a procedure for external party grievances that establishes methods to receive and register communications (e.g. form Project Affected and Interest based stakeholders). This includes:

- A method to screen and assess the issues raised and determine how to address them;
- A method to provide, track, and document responses, if any; and
- A method to adjust the ESMS management program, as appropriate, in response to external grievances.

The grievance procedure shall be reviewed and updated (as applicable) to ensure it remains scaled to the risks and adverse impacts of the project and include consideration of any affected stakeholders.

It must seek to resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate and readily accessible, and at no cost and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies.

14 COMMUNICATION

The ESMS' will establish, implement and maintain processes needed for internal and external communication relevant to environmental and social performance of the Project, relevant to the phase of the project and the allocated responsibilities.

Lines of communication relevant to the construction phase will be clearly defined within the CESMP whilst lines of communication relevant to the operational phase will be clearly defined within the OESMP.

Associated processes will establish:

- What will be communicated;
- When it will be communicated;
- With whom to communicate;
- How to communicate; and
- By whom.

  When establishing communication processes relevant to the ESMS, particular note will be made to

- Compliance obligations, including any reporting requirements to the environmental regulatory authorities; and
- Reporting requirements required by the Project lenders (i.e. as per ESAP or facility agreement).

15 DATA MANAGEMENT AND RECORD KEEPING

The implementation of the ESMS will generate data, that will be required to be managed. The appropriate management of records is a requirement of any successful ESMS and can be used to track progress, review effectiveness and demonstrate compliance.

The ESMS relevant to both the construction and operational phases should include the collation of the records including (but not limited to) the following:

- Environmental and Social Induction and training records;
- Relevant records of competence/qualifications of E&S/HSSE staff;
- Records related to the implementation of specific management plans, such as the SEP, GRM, RAP etc.
- Grievance register and grievance records;
- Site observations record and tracker;
- Internal Audits reports;
- Third-party Environmental & Social Audit Reports;
- Non-Conformance Reports (including corrective action reports);
- Incident & Incident Investigation Reports;
- Environmental & Social Monitoring Results;
- Biodiversity Monitoring and Mitigation results;
- Waste & Wastewater Management Company Licenses;
- Waste & Wastewater Manifest Forms and Chain of Custodies;
- Environmental & Social Risk Assessments and Method statements;
- Equipment Inspections/Certifications (such as calibration certificates);
- Record of emergency events.

Such records will need to be included in an ESMS register and updated as applicable. Where applicable, records and data are segregated by gender.

16 ESMS REVIEW

Project ESMS documentation will be 'living' and will need to be reviewed and updated in relation to changes in project circumstances, activities, environmental sensitivities and future requirements.

Examples of changes in project circumstances that may necessitate ESMS review and revisions include:

- Project design changes, modifications, expansions;
- New E&S regulation or standards that apply to the Project;
- New/renewal permit conditions/conclusions of the national and local regulatory authorities;
- Updates to Project Lender requirements that apply to the financing agreement, or Project ESAP updates;
- Changes in construction methods, commissioning or operational activities, which may change the type and level of impact on new or existing receptors and hence may necessitate an adaptive mitigation/management approach;
- Identification of new sensitivities in the Projects Area of Influence (AOI), requiring new or adaptive mitigation/management; and
- Corrective actions that are undertaken in response to results from monitoring, audits and inspection, which may require updates to ESMS documentation.

As a minimum, the ESMS will be reviewed on an annual basis (i.e. once a year) to ensure applicability to the risks, impacts and compliance obligations relating to the specific project stage. It is expected that where audit or incident corrective actions result in required updates, these will be made as and when they are identified.

ANNEX A – NATIONAL EIA CONCLUSIONS

O‘ZBEKISTON RESPUBLIKASI EKOLOGIYA, ATROF-MUHITNI MUHOFAZA QILISH VA IQLIM O‘ZGARISHI VAZIRLIGI
DAVLAT EKOLOGIK EKSPERTIZASI MARKAZI

Manzil: 10017, Toshkent sh, Mirzo Ulug`bek tumani, Sayram kuchasi, 15-uy,
Tel: 71-203-00-22

DAVLAT EKOLOGIK EKSPERTIZASI XULOSASI

TARTIB RAQAM **01-02/01-1286**
HUJJAT TURI Atrof-muhitga ta'sir to'g'risidagi ariza loyihasi

Davlat ekologik ekspertizasi buyurtmachisi: JURU ENERGY CONSULTING MCHJga berildi.
STIR: 303454532
Obyekt nomi: Строительство ветряной электрической станции (ВЭС) «Гиждуван 300 МВт» мощностью 300 МВт и ВЛ 500кВ в Гиждуванском и Шофирконском районах Бухарской области (проект ЗВОС)
Loyihalarini ishlab chiquvchi nomi: JURU ENERGY CONSULTING MCHJ
STIR: 303454532
Davlat ekologik ekspertizasi mas’ul eksperti: KADIROV FARRUX BATIROVICH

O‘zbekiston Respublikasi Vazirlar Mahkamasining 2020-yil 7-sentabrdagi 541-son qarori bilan tasdiqlangan 1-ilovaga muvofiq, ushbu davlat ekologik ekspertizasi obyekti **atrof-muhitga ta’sir ko‘rsatishning** I toifa **toifasining** 32–**bandiga mansub.**

O‘tkazilgan davlat ekologik ekspertizasi natijasi: Ijobiy xulosa
Davlat ekologik ekspertizasi xulosasi: Ilovasiz huquqiy hujjat hisoblanmaydi
Berilgan sana: 24.07.2024
Amal qilish muddati: 24.07.2027

Ekologik ekspertiza obyektining ekologik talablarga muvofiqligi, joylashuv nuqtalari koordinatalari, atrof-muhitni muhofaza qilish chora-tadbirlari, bajarilishi shart bo‘lgan talablar va boshqalar to‘g‘risida ilovada keltirilgan O‘zbekiston Respublikasi ekologiya, atrof-muhitni muhofaza qilish va iqlim o‘zgarishi vazirligining Davlat ekologik ekspertiza markazi va filiallarining ekspert xulosasi ushbu davlat ekologik ekspertizasi xulosasining ***ajralmas qismi hamda unda belgilangan talablar*** *bajarilishi shart hisoblanadi.*

Izoh: ***Buyurtmachi tomonidan davlat ekologik ekspertizasi xulosasida nazarda tutilgan ekologik talablarga rioya etilmaganda, davlat ekologik ekspertizasi xulosasi qonunchilikda belgilangan tartibda bekor qilinadi.***

Bosh direktor **G‘.Muxamedov**

Davlat ekologik ekspertizasining
2024-yil 24 iyuldagi 01-02/01-1286-son
xulosasiga ilova

Davlat ekologik ekspertizasi natijalari bo‘yicha
Ekspert xulosasi talablari

Компании «ACWAPower», ООО «JURU ENERGY CONSULTING» следует обеспечить:

- до ввода объекта в эксплуатацию разработать заключительный этап процедуры ОВОС – Заявление об экологических последствиях и представить на государственную экологическую экспертизу в установленном законодательством порядке;

- в материалах ЗЭП предоставить акт обследования предприятия, Управлением экологии Бухарской области, о выполнении природоохранных мероприятий и проектных решений, предусмотренных проектом ЗВОС;

- в соответствии с Законом Республики Узбекистан «Об охране и использовании животного мира», ст. 11. 30. 31. 35. разработать, утвердить, согласовать с региональной инспекцией по контролю за охраной н использованием биоразнообразия и охраняемых природных территорий мероприятия, обеспечивающие сохранение путей миграции, мест обитания и размножения птиц до начала строительства объекта и предусмотреть учет краснокнижных видов животных, растений и мероприятия по их сохранению;

- обеспечить выполнение требований постановления Президента РУз «О мерах но дальнейшему совершенствованию системы управления деятельностью в сфере обращения с бытовыми и строительными отходами» №4845 от 29.09.2020 г., п.5 и постановления Кабинета Министров за №40 от 28.01.2021 г. «О мерах по дальнейшему совершенствованию порядка проведения работ со строительными отходами» (приложения за №№3-7);

- составить и представить соответствующие договора, связанные с вывозом отходов и стоков в течение определенного времени из мест их скопления;

- принять соответствующее решение по утилизации лопастей ветрогенераторов;

- обеспечить проведение рекультивации нарушенного почвенно-растительного покрова, а также временных дорог после завершения строительных работ;

- обеспечить выполнение рекомендаций проекта ЗВОС по снижению неблагоприятного воздействия рассматриваемого объекта на все аспекты окружающей среды на этапе строительства;

- обеспечить очистку хозяйственно-бытовые сточных вод, образующихся при эксплуатации ВЭС, на установке «биосептик» с последующим использованием очищенных стоков на полив территории и зеленых насаждений;

- обеспечить выполнение Плана управления охраной окружающей среды (ПУОС), **Плана мониторинга окружающей среды, а также** мер смягчения негативных воздействий на окружающую среду в период строительства и эксплуатации ВЭС и ВЛ, предусмотренных проектом ЗВОС;

- учесть, что при проектировании строительства новых зданий и сооружений высотой более 12 метров от поверхности земли и (или) общей площадью более 500 квадратных метров не допускается отведение площади для озеленения (деревьев, кустарников, иных растений и саженцев) на прилегающих к ним территориях менее 25 процентов от общей площади земельных участков);

- создать «зеленые пояса» на своей и прилегающей территории (основание: Указ Президента РУз от 31 мая 2023 года №УП81 «О мерах по трансформации сферы экологии и охраны окружающей среды и организации деятельности уполномоченного государственного органа», п. 13д.

Управлению экологии, охраны окружающей среди и изменения климата Бухарской области необходимо предусмотреть контроль за:

- выполнением требований природоохранного законодательства в период строительства ветровой электростанции;

- выполнением рекомендуемых организационно технических природоохранных мероприятий, направленных на снижения негативного воздействия намечаемого объекта на окружающую среду в период строительства ВЭС и ВЛ, предусмотренных проектом ЗВОС и Плана ПУОС, а также требований, указанных в настоящем заключении.

Не следует допускать ввода данного объекта в эксплуатацию без положительного заключения государственной экологической экспертизы на Заявление об экологических последствиях.

Ma’sul ekspert: KADIROV FARRUX BATIROVICH

Obyekt haqida qisqacha ma’lumot

Директору

ООО «JURU ENERGY CONSULTING»

Исмаилову Ж.Ш.

Управлению экологии, охраны окружающей среды и изменения климата

Бухарской области

На государственную экологическую экспертизу представлены материалы первого этапа оценки воздействия на окружающую среду по объекту строительство ветряной электрической станции «Гиждуван 300 МВт» мощностью 300 МВт и воздушной линии электропередач (ВЛ) 500кВ в Гиждуванском и Шофирконском районах Бухарской области.

Согласно проекта ООО «Juru Energy Consulting» является консультантом, работающим по контракту, в объемах работ которого является разработка ПЗВОС и его подача на рассмотрение ГЭЭ. Реализация проекта и соблюдение природоохранного законодательства осуществляется компанией «ACWA Power». Основанием для строительства ВЭС «Гиждуван 300 МВт» является Соглашение о государственно-частном партнерстве и ряд других нормативных и законодательных актов. Проектом рассматривается выдача электроэнергии в сеть Узбекистана от проектируемой ветровой электростанции Гиждуван 300 МВт мощностью 300 МВт, используя энергию ветра района с высоким ветровым потенциалом. Местоположение площадки проекта определено Правительством РУз.

Общая выделенная площадь под строительство ВЭС «Гиждуван 300 МВт» составляет 12626,0 га. Протяженность двухцепной ВЛ составляет 1,5 км. Проектируемая ВЛ проходит в границах территории площадки ВЭС «Гиждуван 300 МВт» и подключается к ЛЭП 500 кВ, пересекающей площадку ВЭС. Строительство ВЭС Гиждуван 300 МВт планируется на незаселенных землях в юго-восточной части Аякагитминской впадины, в Гиждуванском и Шофирконском районах Бухарской области. Поверхность участка реализации проекта покрыта Южно-Кызылкумскими песчаными равнинами с сохранившимися невысокими горами (Тамдытау, Ауминьзатау, Кулджуктау). Сельскохозяйственная структура минимальна, лишь весной и летом происходит выпас скота на пастбищах. Отведенная по строительство ВЭС площадка расположена на пустующих землях, свободна от зданий и сооружений. Древесные насаждения не имеются.

Координаты расположения площадки ВЭС «Гиждуван 300 МВт»:

1.40°39'09.36"СШ,64°61'06.87"ВД; 11.40°50'48.43"СШ,64°50'48.43"ВД;
2.40°41'48.70"СШ,64°58'55.63"ВД; 12.40°53'11.03"СШ,64°72'18.02"ВД;
3.40°41'50.54"СШ,64°56'00.43"ВД; 13.40°52'76.27"СШ,64°74'50.28"ВД;
4.40°42'74.19"СШ,64°54'03.41"ВД; 14.40°49'84.85"СШ,64°71'27.95"ВД;
5.40°41'91.13"СШ,64°52'79.71"ВД; 15.40°49'16.82"СШ,64°64'25.85"ВД;

6.40°49'67.70"СШ,64°49'84.80"ВД; 16.40°46'92.65"СШ,64°63'14.68"ВД;
7.40°51'51.59"СШ,64°57'79.59"ВД; 17.40°43'27.81"СШ,64°64'42.12"ВД;
8.40°50'99.82"СШ,64°58'24.62"ВД; 18.40°41'52.75"СШ,64°66'49.49"ВД;
9.40°49'53.37"СШ,64°62'48.47"ВД; 19.40°39'71.22"СШ,64°63'82.16"ВД.
10.40°50'03.14"СШ,64°67'51.16"ВД;

Границами территорию ВЭС «Гиждуван 300 МВт» являются: с севера, запада, востока – пустующие земли; с южной стороны – пахотные поля с/х угодий. Озеро Аякагитма расположено к северу от границы участка строительства ВЭС, на расстоянии 6,1 км. От крайней ветроустановки, расположенной на юге от озера Аякагитма расстояние составляет – 7,148 км. Озеро является важной орнитологической территорией.

В проекте ЗВОС представлена достаточная информация по климатической характеристике района реализации проекта, по существующим источникам воздействия на окружающую среду, анализ которой показал, что участок строительства ВЭС располагается в зоне с допустимой экологической ситуацией по состоянию атмосферного воздуха, поверхностных и подземных вод, почв, грунтов и растительности.

К проекту ЗВОС приложено справка экспертов по биоразнообразию о результатах исследований по биоразнообразию, проведенных экспертами компании «Juru», на проектной территории «ВЭС «Гиждуван 300 МВт» мощностью 300МВт в Гиждуванском районе Бухарской области и ВЛ 500 кВ протяженностью 1,5 км в Шофирконском районе (№JEC-OUT – 24-578 от 8.07.2024 г.). Проектная территория была обследована в марте и апреле 2024 года специалистами по ботанике, по герпетологии, по орнитологии и териологии, по биоразнообразию. Результаты исследования показали присутствие таких редких видов, включенных в национальную и международную Красные книги, как длинноиглый еж (Paraechinus hypomelas), джейран (Gazella subgutturosa), среднеазиатская черепаха (Testudo horsfieldi), серый варан (Varanus griseus), кудрявый пеликан (Pelecanus crispus), черный гриф (Aegupius monachus), степной лунь (Circus macrourus) и другие, с выводом, что в рамках Проекта будут предприняты меры по снижению угроз и сохранению этих видов.

Ближайшими жилой зоной является – поселок Коклам, расположенный на северо-востоке от площадки ВЭС, на расстоянии 540 м от границы ВЭС и на расстоянии 1900 м от ближайшего крайнего ветрогенератора, соответствует требованиям СанПиН-0350-17 санитарно-защитной зоне для рассматриваемой ВЭС, ширина которой определена 250 м *(письмо Службы СЭБ и ОЗ приложено к проекту ЗВОС).*

К проекту ЗВОС приложены протокол общественных слушаний, проведенный под председательством заместителя хокима Шофирконского района от 27.06.2024 г, с участием жителей махалли, всех служб хокимията, в ходе которых обсуждены с вопросы реализации намечаемого проекта и воздействия его деятельности на окружающую среду, на что со стороны жителей получена поддержка *(Акты с фотоматериалами приложены к проекту ЗВОС)*.

К проекту также приложен Протокол общественных слушаний от 26.06.2024 г., проведенного под председательством заместителя Хокима Гиждуванского района, с участием представителей заинтересованных сторон - председателей и жителей махалли Куклам, всех служб хокимията, Заказчика и других заинтересованных сторон, согласно которому со стороны жителей получена поддержка *(Акты с фотоматериалами приложены к проекту ЗВОС)*. По итогам

общественных слушаний было принято решение об общественной поддержке намечаемой деятельности «ACWAPower» на рассматриваемой территории.

Также площадку ВЭС с западной, восточной и северо-восточной сторон пересекают ветки сбросных дренажных коллекторов, которые объединясь, одним руслом направляются на озеро Аякагитма. Расстояние от ближайшей башни ветрогенератора до коллектора в западной части ВЭС составляет – 300,0 м, в северо-восточной части – 369,0 м, в восточной части – 267,0 м. В соответствии с письмом от Министерства Водных ресурсов, при соблюдении изложенных технических условий, возражений на пересечения Аму-Бухарской ирригационной системы возражений не имеется. Территория строительства ВЭС пересекается несколькими инфраструктурными элементами: ВЛ 35-110 кВ, ВЛ 500 кВ, магистральный газопровод «Газли-Шимкент» и сеть газопроводов, диаметром 1220 мм. В соответствии с письмом от «Зирабулакского управления магистральных газопроводов» сообщается, что Магистральный газопровод «Газли-Шимкент» проходит по территории Бухарской и Навоийской областей, начиная от города Газли и заканчивая пустынной местностью Конимех Навоийской области, направлен в сторону Р-ки Казахстан. Газопровод представляет собой одновеетвой газопровод, соединяющий Бухарскую область (Шофирканский и Гиждуванский районы), Конимех Навоийской области, Навоийский металлургический комбинат. В зимний период поставляет природный газ металлургическому комбинату и соседнему Казахстану, а также экспортирует природный газ в Республику.

В соответствии с письмом от Управления культурного наследия Бухарской области, в радиусе 2 км от площадки ВЭС нет объектов культурного наследия, находящихся под охраной государства. В соответствии с письмом от «Худудгаз Бухоро» подземных и надземных газовых сетей, принадлежащих «Худудгаз Бухара» на территории ВЭС не имеется. В соответствии с письмом от компании «Узтелеком», что в районе планируемой ВЭС 300 МВт в Гиждуванском районе Бухарской области, отсутствуют кабели и средства связи компании «Узтелеком». Все согласующие материалы и письма соответствующих ведомств представлены в проекте. Предлагаемая ветряная электростанция является наиболее перспективным в энергетике и отличается от традиционной ТЭС отсутствием потреблением углеводородного сырья, высокой эффективностью, а также значительно низким воздействием на окружающую среду.

Проектируемая ВЛ 500кВ проходит в границах территории площадки ВЭС «Гиждуван 300 МВт» и подключается к ЛЭП 500 кВ, пересекающей площадку ВЭС. Протяженность проектируемой двухцепной ВЛ составляет – 1,5 км, площадь 75206 м^2, из них: в постоянное пользование (под опоры и охранную полосу) – 3206,0 м^2; во временное пользование (на время строительства) – 72000,0 м^2. Предполагается установка 12 ед. опор. Проектируемая ВЛ не проходит через растительные массивы, ценность которых определяется запасами лекарственных растений, охотопромысловых животных. Трасса не затронула земель, занятых ценными сельскохозяйственными культурами, заповедниками и заказниками. Основным типом земель, по которым проходит трасса – пустынные необрабатываемые земли. Пересечений с водными объектами, железнодорожными переездами, автомагистралями, дорожной сетью не имеется. *Пересечение линий электропередач*. Тупиковые вышки/угловые вышки/вышки специального типа будут использоваться для пересечения существующей ЛЭП, чтобы избежать длительного отключения существующей ЛЭП во время строительства. Помимо этого, эти вышки будут использоваться с удлинением корпуса для обеспечения необходимого вертикального расстояния от верха существующей линии. Высота башни и высота удлинителя корпуса, зависит от высоты существующих линии электропередач.

Для пересечения трубопровода не требуются специальные башни. Все трубопроводы пересекаются под углом 90 градусов. Требуемые горизонтальные и вертикальные расстояния будут обеспечены во время установки вышки. СЗЗ может устанавливаться на основании возможного акустического (шумового) воздействия. Для определения размера зоны воздействия намечаемого проекта на ближайший населенный пункт, проведен расчет акустического воздействия от устанавливаемых ветровых турбин и определено его соответствие установленным нормативам по шуму согласно СанПиНу №0267-09 «По обеспечению допустимого шума в помещениях жилых, общественных зданий и на территории жилой застройки». В результате проведенных расчетов акустического воздействия от устанавливаемых ветрогенераторов, установлено, что при расстоянии от наиболее крайней ветровой турбины до ближайших жилых домов поселка Агитма, расположенных к северу от территории ВЭС (18,5 км) соответствует требованиям согласно СанПиН № 0267-09. СЗЗ для ВЛЭП напряжением 500 кВ составляет 30 м по обе стороны от проекции на землю крайних фазных проводов в направлении, перпендикулярном к ВЛЭП. По всему маршруту проектируемой ВЛ в полосе отвода и за ее пределами, также не имеется жилой застройки.

Настоящим проектом предусматривается строительство ветровой электростанции мощностью 300 МВт в составе 38-ми единиц ветрогенераторов со всеми вспомогательными сооружениями и зданиями. Согласно проекту ЗВОС продолжительность строительного периода рассматриваемой ВЭС составляет 1 год, Оборудование ВЭС, преобразующее ветровую энергию в электрическую, включает в себя: турбину (ротор), осуществляющий превращение энергии ветрового потока прямолинейного движения; генератор, осуществляющий преобразование механической энергии в электрическую; мачту; систему управления турбиной; мультипликатор; хвост или систему азимутального привода; выпрямитель, который необходим при использовании генераторов переменного тока. В проекте ЗВОС представлена достаточная информация по принципу работы ВЭС, заключающемуся в использовании кинетической энергии ветра для вращения подвижной части ветряка, соединенной с ротором генератора энергии. Находящийся внутри редуктор увеличивает скорость движения вала. Вследствие этой работы создается трехфазный переменный ток. Благодаря наличию статорной обмотки ветрогенератора механическая энергия превращается в электрический ток. Предусмотренные на территории ВЭС помещения и сооружения, как для временного использования, так и основного, будут установлены уже в готовом исполнении, т.е. помещения контейнерного типа, доставляются в уже собранном виде. (центр управления, АБК, жилые помещения). Для выезда непосредственно на участки расположения ВЭУ для визуальных инспекций и при ремонтных работах, предусматривается собственный автопарк на две выездные бригады – две машины. Для стоянки машин будет организован гараж, представляющий собой бетонированную площадку под навесом. Заправка и обслуживание автотранспорта на территории ВЭС не предусматривается и будет производиться в специализированных организациях. Аварийный дизель-генератор, мощностью 10 кВт устанавливается на бетонированной площадке со сливной ямой для сбора разливов под навесом.

Выбросы загрязняющих веществ в атмосферу. В рамках проекта ЗВОС произведены расчеты загрязняющих веществ, выделяющихся **в процессе строительства** ветровой электростанции. Согласно произведенным расчетам, ожидаемые выбросы временных загрязняющих веществ в период строительства ВЭС и ВЛ составят 48,6861 т. Наибольший вклад в загрязнение привносят оксид углерода (48,4%); пыль неорганическая (16%); диоксид азота (15,5%). Анализ расчетов полей рассеивания приземных концентраций загрязняющих веществ показал, что максимальные концентрации всех загрязняющих веществ за границами площадки ВЭС в период

строительства не превышают установленных квот для Бухарской области. Выбросы загрязняющих веществ **при эксплуатации** ветровой электростанции при выработке электроэнергии с использованием лишь энергию ветра **отсутствуют,** что является основным преимуществом предлагаемого ВЭС с позиции охраны окружающей среды. Незначительный выброс загрязняющих веществ в атмосферу возможно будет происходить от следующего оборудования: через неплотности - силовых трансформаторов, наполненных маслом, выбросы от которых представлены в виде незначительных углеводородов масла в количестве 0,0028 т/год; от резервного (аварийного) источника питания для подстанции – дизель-генератора, используемого исключительно в аварийных ситуациях, при работе которого в атмосферный воздух будут поступать загрязняющие вещества 7 наименований в общем количестве - 0,0004 т/год. Выбросы на следовых уровнях.

При проведении строительных работ на площадке вода используется для приготовления строительного раствора, полива территории с целью снижения пыления, а также на хозяйственно-бытовые нужды строителей (до 700 человек). Водоснабжение при проведении строительных работ привозное. На питьевые нужды строителей частично используется привозная бутилированная вода, приобретаемая самостоятельно строительным подрядчиком (расход воды 6387,5 м^3/год). Водоотведение стоков на временных строительных площадках предусматривается в специально оборудованные места с герметичными емкостями (биотуалеты). Содержимое биотуалетов подлежит вывозу на ближайшие очистные сооружения. Для приготовления строительного раствора, полива территории с целью снижения пыления вода будет привозиться водовозами из ближайшего ирригационного коллектора в количестве 5241,0 м^3/год. Расход воды относится к безвозвратным потерям. Производственные стоки отсутствуют. Общий расход воды составит 11640,45 м^3/год.

В процессе эксплуатации рассматриваемой ВЭС вода на площадке используется на хозяйственно бытовые нужды. Источником водоснабжения для хозяйственно-бытовых нужд работающих в количестве 20 человек на ВЭС, будет привозная вода с ближайшего поселка. Общее водопотребление хозяйственно-бытовых стоков при эксплуатации ВЭС составит 5,22 м^3/сутки или 1630,3 м^3/год. Стоки намечается по внутриканализационным системам направлять в биологический септик наземного исполнения, расположенного на открытой площадке территории ВЭС, в той части территории, где расположены административные и функционально-вспомогательные участки. Биосептик соединяет в себе механическую и биологическую очистку сточных вод. Очищенную воду, согласно проекту ЗВОС, можно использовать повторно для полива участка, а ил в качестве удобрения для растений.

Образование отходов. На проектируемой ветровой электростанции, мощностью 300 МВт в ходе строительства и после ввода в эксплуатацию будут образовываться отходы, как производственного, так и бытового характера. *В процессе строительства ВЭС* ожидается образование 8075,0 т/год следующих отходов: отходы бетона и железобетона - 5 класс опасности; отходы песка - 5 класс опасности; строительный щебень, потерявший потребительские свойства - 5 класс опасности; отходы стальных электродов (огарки и остатки стальных сварочных электродов - 5 класс опасности; отходы растворителей, красок - 3 класс опасности; отходы смеси разнородных затвердевших пластмасс (тара из-под краски) - 3 класс опасности; обтирочный материал, загрязненный маслами (содержание масел менее 15 %) - 4 класс опасности; строительный мусор - 4 класс опасности; ТБО (мусор от временных бытовых помещений несортированный, исключая крупногабаритный) - 4 класс опасности. 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. Вывоз строительных отходов с площадки строительства осуществляется силами строительной организации согласно договорам с организациями по утилизации отходов.

Анализ проектного решения показал, что ***при эксплуатации ВЭС*** основных и вспомогательных участков, а также при ремонтных работах, ориентировочно будет образовываться 11 видов отходов в количестве 163,976 т/год: отработанные лопасти ветрогенераторов – 136,8 т, 4 класс опасности; отработанное трансформаторное масло – 11,675 т/год, 2 класс опасности; отработанный силикагель – 1,15 т/год, 4 класс опасности; лом черного металла – 0,5 т/год, 5 класс опасности; лом цветного металла – 0,2 т/год, 4 класс опасности; промасленная ветошь с содержанием масла более 15% – 0,05 т/год, 3 класс опасности; отработанные светодиодные лампы - 0,0265 т/год, 4 класс опасности; отходы бумаги (макулатура) – 0,035 т/год, 4 класс опасности; ; пищевые отходы столовой – 1,54 т/год, 5 класс опасности; твердые бытовые отходы от жизнедеятельности работающих – 1,0 т/год, смет от уборки территории – 11,0 т/год, 4 класс опасности. Все отходы будут утилизированы в установленном порядке. В настоящее время утилизация лопастей ветрогенераторов из композитных материалов, образующихся по истечению времени эксплуатации либо ликвидации объекта, является существенной проблемой ветроэнергетики. Предлагаемые методы утилизации лопастей генераторов находятся в стадии разработки, а применяемые методы (такие как механическое измельчение, сжигание и пиролиз) обладают рядом недостатков, что не позволило рассматриваемым проектом ЗВОС заявить о решении проблемы переработки лопастей в полной мере. **При последующем проектировании необходимо принять соответствующее решение по утилизации лопастей ветрогенераторов.**

Образуемые отходы в процессе эксплуатации ВЭС в установленном порядке планируется вывозить специализированным организациям для утилизации, а бытовые и строительные отходы будут вывозиться согласно заключенным договорам.

По рассмотренному ряду возможных аварийных рисков на ветровой электрической станции мощностью 300 МВт после реализации проекта, в проекте даны рекомендации по их предотвращению, исключению и минимизации.

В проекте ЗВОС разработаны рекомендации по снижению неблагоприятного воздействия рассматриваемого объекта на все аспекты окружающей среды как на этапе строительства так на этапе и эксплуатации.

В проекте ЗВОС представлены План управления Окружающей Средой с мерами смягчения негативных воздействий на окружающую среду и План мониторинга Окружающей Средой в период строительства и эксплуатации рассматриваемой ВЭС.

Государственная экологическая экспертиза проекта показала, что представленные материалы соответствует требованиям природоохранного законодательства к первому этапу оценки воздействия на окружающую среду.

Центр по государственной экологической экспертизы при Министерстве экологии, охраны окружающей среды и изменения климата **согласовывает** материалы первого этапа оценки воздействия на окружающую среду по объекту строительство ветряной электрической станции «Гиждуван 300 МВт» мощностью 300 МВт и

воздушной линии электропередач 500 кВ в Гиждуванском и Шофирконском районах Бухарской области.

Ma’sul ekspert: KADIROV FARRUX BATIROVICH

MINISTRY OF ECOLOGY, ENVIRONMENTAL PROTECTION AND CLIMATE CHANGE OF THE REPUBLIC OF UZBEKISTAN
STATE ENVIRONMENTAL EXPERTISE CENTER
Address: 10017, Tashkent, Mirzo Ulugbek district, Sayram street, 15, Tel: 71-203-00-22

STATE ENVIRONMENTAL EXPERTISE
EXPERT CONCLUSION

NUMBER: 01-02/01-1286
DOCUMENT TYPE: Draft Environmental Impact Statement (draft EIS)

Issued to the Client of the State Environmental Expertise: JURU ENERGY CONSULTING LLC
TIN: 303454532
Subject name: Environmental impact assessment for the project: "Construction of the wind power plant (WPP) "Gijduvan 300 MW" with a capacity of 300 MW and the 500 kV OHL in the Gijduvan and Shofirkon districts of the Bukhara region" (draft EIS)
Name of the project developer: JURU ENERGY CONSULTING LLC
TIN: 303454532
Responsible expert of the State Environmental expertise: KADIROV FARRUKH BATIROVICH

According to Attachment 1, approved by Decree of the Cabinet of Ministers of the Republic of Uzbekistan No. 541 dd. September 7, 2020, this subject of the State Environmental expertise qualifies for p**.32 of Category 1 of the environmental impact.**

Result of the State Environmental expertise: Positive conclusion

The state environmental expertise conclusion: This document is considered invalid unless accompanied by the attachment.

Issue date: 24.07.2024
Validity period: 24.07.2027

The attached expert conclusion of the State Environmental expertise Center of the Ministry of ecology, environmental protection and climate change of the Republic of Uzbekistan and its branches on compliance of the subject of environmental expertise with ecological requirements, coordinates of location points, environment protection measures, requirements that must be fulfilled, etc. is ***an integral part of this conclusion of the State Environmental expertise and it is mandatory to fulfill requirements specified therein.***

Note: If the Client does not comply with environmental requirements stipulated in the conclusion of the State Environmental expertise, the conclusion of the State Environmental expertise shall be canceled in accordance with the procedure established by the laws.

General Director **G. Mukhamedov**

Attachment to the conclusion

of the State Environmental Expertise

dd. July 24, 2024 No. 01-02/01-1286

Requirements of the expert conclusion on results of the state environmental expertise

ACWA Power and JURU ENERGY CONSULTING LLC should:

- **Before commissioning the facility, develop the final stage of the EIA procedure, a Statement of Environmental Effects (SEE), and submit it for the State Environmental Expertise in accordance with the procedure established by law.**

- **In the SEE materials, provide the enterprise inspection report of the Ecology Department of the Bukhara region, on implementation of environmental measures and design solutions provided for by the draft EIS.**

- **In accordance with Articles 11, 30, 31, and 35 of the Law of the Republic of Uzbekistan "On Protection and Use of Wildlife", develop, approve, and agree upon with the regional inspectorate for control over protection and use of biodiversity and protected natural areas the measures to ensure preservation of migration routes, habitats, and breeding grounds of birds before the start of the facility construction, and provide for registration of the Red Book species of animals and plants, and measures for their conservation.**

- **Ensure compliance with requirements of p. 5 of Decree of the President of the Republic of Uzbekistan No. 4845 dd. September 29, 2020 “On measures for further improvement of the management system for household and construction waste management”, and Decree of the Cabinet of Ministers No. 40 dd. January 28, 2021 “On measures for further improvement of procedure for handling construction waste” (Appendices No. 3-7).**

- **Draw up and submit relevant agreements related to removal of waste and wastewater within a specified timeframe from the places of their accumulation.**

- **Make appropriate decision on disposal of wind turbine blades.**

- **Ensure reclamation of disturbed soil and vegetation cover, as well as temporary roads after the construction completion.**

- **Ensure implementation of the EIS project recommendations to reduce adverse impact of the facility under consideration on all aspects of the environment during the construction stage.**

- **Ensure treatment of domestic wastewater generated during operation of the WPP in a bioseptic unit with the subsequent use of the treated wastewater for watering the territory and green spaces.**

- **Ensure implementation of the Environmental Protection Management Plan (EPMP), the Environmental Monitoring Plan, as well as** measures to mitigate adverse environmental impacts during the WPP and OHL construction and operation, provided for by the draft EIS.

- **Take into consideration that when designing construction of new buildings and structures exceeding a height of 12 meters from the ground level and/or with a total area exceeding 500 square meters, an area for landscaping (trees, shrubs, and other plants) in adjacent territories must not be less than 25 percent of the total land area;**

- **Establish "green belts" on both its own and adjacent territories (Basis: Ordinance of the President of the Republic of Uzbekistan dd. May 31, 2023, No. UP81 “On measures to transform the sphere of ecology and environmental protection and organize activities of the authorized state body,” p. 13e).**

The Department of Ecology, Environmental Protection and Climate Change of the Bukhara region should ensure control over:

- **compliance with requirements of environmental legislation during the WPP construction;**

- **implementation of the recommended organizational and technical environmental protection measures aimed at reducing the adverse environment impact of the planned facility during the WPP and OHL construction, as provided for in the draft EIS and EPMP Plan, as well as requirements specified in this conclusion.**

The operation stage of the facility should not be allowed without a positive conclusion from the State Environmental Expertise regarding the Statement of Environmental Effects (final stage of the EIA procedure).

Responsible expert: KADIROV FARRUKH BATIROVICH

Summary of the facility

To: Ismailov J.Sh.

Director of JURU ENERGY CONSULTING LLC

Department of Ecology, Environmental Protection

and Climate Change of Bukhara Region

Materials for the first stage of environmental impact assessment have been submitted for the project: “Construction of the wind power plant (WPP) “Gijduvan 300 MW" with a capacity of 300 MW and the 500 kV OHL in the Gijduvan and Shofirkon districts of the Bukhara region”

According to the project, Juru Energy Consulting LLC is a contracted consultant, with the scope of works including development of the Draft Environmental Impact Assessment and submitting it to the State Environmental Expertise. The project implementation and compliance with environmental legislation are managed by ACWA Power. The basis for constructing the Gijduvan 300 MW WPP is the Public-Private Partnership Agreement, along with other regulatory and legislative documents.

The project aims to distribute electricity to Uzbekistan's grid from the Gijduvan 300 MW wind power plant, utilizing wind energy in an area with high wind potential. The project site location is determined by the Government of the Republic of Uzbekistan.

The total area allocated for construction of the Gijduvan 300 MW WPP is 12,626.0 ha. The double-circuit OHL extends for 1.5 km, running within the boundaries of the Gijduvan 300 MW WPP site and connecting to the 500 kV transmission line crossing the site.

Construction of the Gijduvan 300 MW WPP is planned on uninhabited lands in the southeastern part of the Ayakagitma depression, within the Gijduvan and Shofirkon districts of the Bukhara region. The surface of the project site is covered by the South Kyzylkum sandy plains, with preserved low mountains such as Tamdytau, Auminzatau, and Kuldzhuktau. The agricultural activity in the area is minimal, with cattle grazing observed only in spring and summer. The site allocated for the WPP construction is on empty land, without buildings and structures, and has no tree plantations.

The coordinates of the Gijduvan 300 MW WPP are as follows:

1. 40°39'09.36"N, 64°61'06.87"E
2. 40°41'48.70"N, 64°58'55.63"E
3. 40°41'50.54"N, 64°56'00.43"E
4. 40°42'74.19"N, 64°54'03.41"E
5. 40°41'91.13"N, 64°52'79.71"E
6. 40°49'67.70"N, 64°49'84.80"E
7. 40°51'51.59"N, 64°57'79.59"E
11. 40°50'48.43"N, 64°50'48.43"E
12. 40°53'11.03"N, 64°72'18.02"E
13. 40°52'76.27"N, 64°74'50.28"E
14. 40°49'84.85"N, 64°71'27.95"E
15. 40°49'16.82"N, 64°64'25.85"E
16. 40°46'92.65"N, 64°63'14.68"E
17. 40°43'27.81"N, 64°64'42.12"E

8. 40°50'99.82"N, 64°58'24.62"E

9. 40°49'53.37"N, 64°62'48.47"E

10. 40°50'03.14"N, 64°67'51.16"E

18. 40°41'52.75"N, 64°66'49.49"E

19. 40°39'71.22"N, 64°63'82.16"E

The boundaries of the Gijduvan 300 MW WPP are surrounded by empty lands to the north, west, and east, while the south borders arable fields of agricultural lands. Lake Ayakagitma is located 6.1 km north of the WPP construction site boundary. The distance from the outermost wind turbine, located to the south of Lake Ayakagitma, is 7.148 km. The lake is an important ornithological territory.

The draft EIS provides detailed information on the climatic characteristics of the project area and existing sources of environmental impact. Analysis shows that the WPP construction site is situated in a zone with an acceptable environmental situation in terms of atmospheric air, surface and ground water, soils, grounds, and vegetation.

Attached to the draft EIS is a certificate from biodiversity experts on results of biodiversity serveysconducted by Juru specialists in the project area of the Gijduvan 300 MW WPP in the Gijduvan district of the Bukhara region, and the 500 kV OHL in the Shofirkon district (No. JEC-OUT-24-578 dated July 8, 2024). The project area was surveyed in March and April 2024 by botany, herpetology, ornithology, theriology, and biodiversity experts. The survey revealed the presence of several rare species included in the national and international Red Books, such as: Brandt's hedgehog (Paraechinus hypomelas); Goitered gazelle (Gazella subgutturosa); Russian tortoise (Testudo horsfieldi); Desert monitor (Varanus griseus); Dalmatian pelican (Pelecanus crispus); Griffon vulture (Aegypius monachus); Pallid harrier (Circus macrourus) and others, with the conclusion that the Project will take measures to reduce threats and conserve these species.

The nearest residential area is the Koklam settlement, located to the northeast of the WPP site, 540 m from the WPP boundary and 1900 m from the nearest wind generator. This meets the requirements of SanPiN-0350-17 for sanitary protection zone for the WPP, which is defined as 250 m in width (*A letter from the the Service of Sanitary-Epidemiological Welfare and Public Health is attached to the draft EIS*).

The draft EIS includes the Minutes of the public hearings held under the chairmanship of the Deputy Khokim of the Shofirkon district on 27.06.2024, with the participation of mahalla residents, all services of the khokimiyat, where the issues of the proposed project implementation and environmental impact of its activities were discussed, and the residents agreed to support the project (*Reports with photo materials are attached to the draft EIS*).

Additionally, the draft EIS includes the Minutes of the public hearings dated 26.06.2024, held under the chairmanship of the Deputy Khokim of the Gijduvan district, with the participation of representatives of stakeholders - the chairmen and residents of the Kuklam mahalla, all services of the khokimiyat, the Client and other stakeholders, where residents agreed to support the project (*Reports with photo materials are attached to the draft EIS*). Based on results of the public hearings, a decision was made on public support for the planned activities of ACWAPower in the territory under consideration.

Additionally, the WPP site is intersected on the western, eastern, and northeastern sides by branches of discharge drainage collectors, which merge and flow towards Lake Ayakagitma in a single channel. The distances from the nearest wind towers to the collectors are as follows: 300.0 meters in the western part, 369.0 meters in the northeastern part, and 267.0 meters in the

eastern part. According to a letter from the Ministry of Water Resources, there are no objections to the intersection of the Amu-Bukhara irrigation system, provided that the stated technical conditions are met.

The WPP construction area is also intersected by several infrastructure elements: the 35-110 kV power transmission line, the 500 kV power transmission line, the Gazli-Shymkent Main Gas Pipeline, and a network of gas pipelines with a diameter of 1220 mm. According to a letter from the Zirabulak Main Gas Pipeline Administration, the Gazli-Shymkent Main Gas Pipeline passes through the Bukhara and Navoi regions, starting from the town of Gazli and ending in the desert area of Konimekh in the Navoi region, extending towards the Republic of Kazakhstan. This gas pipeline is a single-branch line that connects the Bukhara region (Shofirkon and Gijduvan districts), Konimekh in the Navoi region, and the Navoi Metallurgical Plant. In winter, it supplies natural gas to the metallurgical plant and neighboring Kazakhstan, as well as exports natural gas to the Republic.

According to the letter of the Department of Cultural Heritage of the Bukhara Region, there are no cultural heritage sites under state protection within a radius of 2 km from the WPP site. Additionally, a letter of Khududgaz Bukhoro confirms that there are no underground or aboveground gas networks belonging to Khududgaz Bukhoro in the WPP territory. Furthermore, a letter from Uztelecom states that there are no cables or communication facilities of Uztelecom in the area of the planned 300 MW WPP in the Gijduvan district of the Bukhara region.

All approval materials and letters from the relevant departments are included in the project documentation. The planned wind power plant is extremely promising in the energy industry since it does not use hydrocarbons, is highly efficient, and has a significantly lower environmental effect.

The designed 500 kV OHL extends within the boundaries of the Gijduvan 300 MW WPP site and is connected to the existing 500 kV power transmission line crossing the WPP site. The designed double-circuit OHL spans about.5 km, covering an area of 75,206 m2, of which:

- for permanent use (for supports and a protective strip) - 3,206.0 m2
- for temporary use (during construction) - 72,000.0 m2

It is planned to install 12 supports. The designed OHL does not pass through areas with vegetation valued for medicinal plants or hunting and commercially sold animals. The route avoids lands occupied by valuable agricultural crops, reservations, and wildlife sanctuaries. The majority of the land that the route goes through is uncultivated, abandoned land.
The route does not intersect water bodies, railway crossings, highways, or road networks.

Crossing of electrical lines
To avoid long-term shutdowns of the existing power transmission line during construction, dead-end towers, corner towers, and special type towers will be used to cross the existing power transmission line. These towers will include body extensions to ensure the necessary vertical clearance from the top of the existing power line. The tower and body extension height will depend on the height of the existing power transmission lines.

No special towers are required to intersect the pipeline, as all pipelines cross at a 90-degree angle. The required horizontal and vertical distances will be ensured during tower installation. The buffer zone can be established based on the possible acoustic (noise) impact.

To determine the size of the impact zone of the planned project on the nearest settlement, the acoustic impact from the installed wind turbines was calculated, and its compliance with the

established noise standards according to SanPiN No. 0267-09 "On ensuring permissible noise in the premises of residential and public buildings and on the territory of residential development" was identified.

As a result of calculations of acoustic impact from the installed wind generators, it was found that the distance from the outermost wind turbine to the nearest residential buildings of Agitma settlement, located to the north of the WPP territory (18.5 km), meets requirements of SanPiN No. 0267-09.

The buffer zone for the 500 kV OHL is 30 meters on both sides of the footprint of the outer phase wires in the direction perpendicular to the OHL. There are also no residential buildings along the entire route of the designed overhead power line in the right-of-way and beyond it.

This project provides for construction of the 300 MW WPP, comprising 38 wind generators along with all auxiliary structures and buildings. According to the draft EIS, the construction period for the wind power plant is 1 year.

The WPP equipment that converts wind energy into electrical energy includes: a turbine (rotor) that converts the energy of a rectilinear wind flow; a generator that converts mechanical energy into electrical energy; a mast; a turbine control system; a multiplier; a tail or azimuthal drive system; a rectifier, required when using alternating current generators.

The EIS project provides detailed information on the WPP operating principle, which involves using the kinetic energy of the wind to rotate the moving part of the wind turbine, connected to the rotor of the energy generator. The gearbox inside the system increases the shaft speed, resulting in three-phase alternating current generation. The stator winding of the wind generator converts mechanical energy into electric current.

The premises and structures at the WPP site, both for temporary and basic use, will be installed in a finished version, meaning they will be container-type premises delivered already assembled (these include the control center, administration and amenity building, and accommodation buildings).

For visiting directly the wind turbine location sites for visual inspections and pre-repair works, a private vehicle fleet is provided for two mobile teams comprising two cars. There will be a concrete space under shelter designated for parking cars in a garage. Refueling and servicing of vehicles on the territory of the WPP is not provided and will be carried out in specialized organizations. A 10 kW emergency diesel generator will be installed on a concrete area with a drain pit for collecting spills under shelter.

Emissions of pollutants into the atmosphere. Pollutant emission estimations were done under the draft EIS for the WPP **construction**. According to the estimates, the expected emissions of temporary pollutants during the construction of the WPP and OHL will total 48.6861 tons. The largest contribution to pollution is made by carbon monoxide (48.4%); inorganic dust (16%); nitrogen dioxide (15.5%). Analysis of calculations of dispersion fields of ground concentrations of pollutants showed that the maximum concentrations of all pollutants outside the boundaries of the WPP site during the construction do not exceed the established quotas for the Bukhara region. There are no emissions of pollutants during **operation** of the WPP when electricity will be generated using only wind energy, which is the main advantage of the proposed WPP from the standpoint of environmental protection.

Minor emissions of pollutants into the atmosphere may arise from the following sources: through leaks - Power transformers filled with oil, may emit minor amounts of oil hydrocarbons totaling 0.0028 tons per year; from the backup (emergency) power source for the substation - diesel generator used exclusively during emergencies and emitting pollutants (seven types)

totaling 0.0004 tons per year. These emissions are at trace levels.

During construction activities, water is used for mixing mortar, irrigating the area for dust suppression, and the household needs of up to 700 builders. Water during the construction is supplied via delivery. For drinking needs of the builders, imported bottled water is partially used, purchased independently by the construction contractor (water consumption 6387.5 m3/year).

Drainage of wastewater at temporary construction sites is provided for in specially equipped places with sealed containers (biotoilets), with the contents transported to nearby treatment facilities. Additionally, water trucks will deliver water from the nearest irrigation collector for mortar preparation and dust control, amounting to 5,241.0 m3 per year. This water consumption is classified as non-recoverable losses. There will be no industrial effluents. The total water consumption will total 11,640.45 m3 per year.

During the WPP **operation**, water will be used for domestic purposes by the 20 employees on site. The water will be supplied from the nearest village. The total volume of domestic wastewater generated will be 5.22 m³ per day, or 1630.3 m³ per year.

The wastewater will be routed through internal sewer systems to an above-ground biological septic tank located on an open site of the WPP territory, in the part of the territory where the administrative and functional auxiliary areas are located. This septic tank will provide both mechanical and biological treatment of the wastewater. According to the draft EIS, the treated water can be reused for site irrigation, while the sludge can be used as plant fertilizer.

Waste generation. At the designed 300 MW wind power plant, both industrial and household waste will be generated during construction and after commissioning. During the *construction of the wind power plant*, generation of the following waste totaling 8,075.0 t/year is expected: concrete and reinforced concrete waste - hazard class 5; sand waste - hazard class 5; crushed stone that has lost its consumer properties - hazard class 5; steel electrode waste (burnt and remains of steel welding electrodes - hazard class 5); waste solvents, paints - hazard class 3; waste mixture of different hardened plastics (paint containers) - hazard class 3; oil-contaminated wiping material (oil content less than 15%) - hazard class 4; construction waste - hazard class 4; MSW (unsorted waste from temporary utility rooms, excluding large-sized waste) - hazard class 4. Waste from operation of special equipment and vehicles will not be generated directly at the site.

Maintenance and repair of special equipment used in construction is carried out at the premises of the contracting organization. Under a contract for construction and installation work, the construction organization - general contractor collects and temporarily stores MSW and industrial waste generated during construction in specially equipped facilities before removing it for disposal to specialized organizations.

The general contractor bears full responsibility for sanitary-epidemiological and environmental situation before the Client and inspection authorities. The construction company removes construction waste from the construction site through contracts with waste disposal companies.

Analysis of the design solution indicates that ***operation of the WPP*** and main and auxiliary sections, as well as during maintenance activities, will generate approximately 163.976 tons of waste annually, consisting of 11 different types: spent wind turbine blades: 136.8 tons/year, hazard class 4; spent transformer oil: 11.675 tons/year, hazard class 2; spent silica gel: 1.15 tons/year, hazard class 4; ferrous scrap metal: 0.5 tons/year, hazard class 5; non-ferrous scrap metal: 0.2 tons/year, hazard class 4; oily rags (oil content > 15%): 0.05 tons/year, hazard class 3; spent led lamps: 0.0265 tons/year, hazard class 4; paper waste (waste paper): 0.035 tons/year, hazard class 4; canteen food waste: 1.54 tons/year, hazard class 5; solid municipal waste from

workers: 1.0 tons/year; sweepings from cleaning the territory: 11.0 tons/year, hazard class 4.

All waste will be managed and disposed of according to the established procedures. However, the disposal of wind generator blades made from composite materials remains a significant challenge within the wind energy sector. The proposed methods for disposal of generator blades are at the development stage, and the current disposal methods, including mechanical grinding, incineration, and pyrolysis, have shortcomings that prevent a complete solution to the blade recycling issue from being declared in the draft EIS. **Therefore, disposal of wind turbine blades must be addressed in future designs.**

The waste generated during the WPP operation will be handled by specialized organizations for disposal, following established procedures, while household and construction waste will be managed according to existing agreements.

The draft EIS developed recommendations for reducing the adverse impact of the facility on all environmental aspects at the construction and operation stages.

The draft EIS provides the Environmental Management Plan with measures to mitigate adverse environmental impacts and the Environmental Monitoring Plan for construction and operation stages of the WPP.

The state environmental expertise of the project showed that the presented materials meet requirements of environmental legislation for the first stage of the environmental impact assessment.

The Center for State Environmental Expertise under the Ministry of Ecology, Environmental Protection and Climate Change **agrees upon** the materials of the first stage of the environmental impact assessment for construction of the 300 MW Gijduvan wind power plant and the 500 kV overhead power line in the Gijduvan and Shofirkon districts of the Bukhara region.

Responsible expert: KADIROV FARRUKH BATIROVICH

ANNEX B – PROJECT'S LEGAL FRAMEWORK

International Conventions/Protocol

The proposed Project must comply with the environmental requirements of the following protocols and conventions listed in the Table below of which the Uzbekistan is a signatory:

International Protocols and Conventions

NAME OF INTERNATIONAL PROTOCOL /CONVENTION	SIGNED/ RATIFIED	RELEVANCE TO THE PROJECT
UN Framework Convention on Climate Change	Accession: 20 June 1993	The Project will comply contribute to Uzbekistan's GHG emission reduction targets.
Kyoto Protocol to UNFCCC	Ratified: 12th October 1999	
Paris Agreement to UNFCCC	Signed: 19th April 2017	
Montreal Protocol on Substances that Deplete the Ozone Layer (with London, Copenhagen, Montreal amendments)	Accession: 10th June 1998	The Project will support Uzbekistan's contribution towards the protection of the ozone layer by refraining from use of ozone depleting substances.
Vienna Convention on the Protection of Ozone Layer	Accession: 18 May 1993	
UN (Rio) Convention on Biological Diversity	Accession: 19th July 1995	The Project will implement mitigation and management measures to ensure the conservation and protection of terrestrial ecology during the Project lifecycle.
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Accession: 10th July 1997	The Project staff and workers will be strictly forbidden from trading in any wild flora and fauna found in the Project site or outside the Project boundaries.
Convention on Migratory Species of Wild Animals	1 May 1998	The project will implement mitigation and management measures to ensure conservation of terrestrial and avian migratory species especially because the Wind Farm will be located along the Asian bird migration route and IBA site.
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal	Accession: 7th February 1996	The Project will be required to adhere to all national and international standards for hazardous waste generation and management.
United Nations Convention to Combat Desertification	Ratified: 31 August 1995	The Project will not result in accelerated desertification

Name of International Protocol /Convention	Signed/ Ratified	Relevance to the Project
		through sourcing of its materials and will contribute to sustainable development.
Paris Convention on Protection of the World Cultural and Natural Heritage	Succession: 13th January 1993	The Project will implement mitigation and management measures where items/sites/monuments of cultural or natural heritage are identified within or near the Project boundaries and notify the relevant authorities immediately.
Stockholm Convention on Persistent Organic Pollutants	Accession: 28th June 2019	The Project will implement control measures to eliminate any use of chemicals under Annex A and B and reduce the unintentional release of those under Annex C.

In addition to the national labour requirements, the Republic of Uzbekistan has also ratified the following ILO conventions.

ILO Conventions Ratified by Uzbekistan

ILO Conventions	Ratified
Convention No 29 on Forced Labour adopted in 1930	13th July 1992
Convention No 87 on Freedom of Association and Protection of the Right to Organise, adopted on 17th of June 1948	12th December 2016
Convention No 98 on the Right to Organise and Collective Bargaining adopted on 8th of June 1949	13th July 1992
Convention No 100 on Equal Remuneration adopted 6th of June 1951	13th July 1992
Convention 111 on Discrimination (Employment and Occupation) adopted 4th of June 1958	13th July 1992
Convention 138 on Minimum Age adopted 6th of June 1973	6th March 2009
Convention 182 on the Worst Forms of Child Labour adopted 17th June 1999	24th June 2008
Convention C105 on the Abolition of Forced Labour Convention, 1957	15th Dec 1997
C187 Promotional Framework for Occupational Safety & Health Convention, 2006	14th September 2021
C081 Labour Inspection Convention 1947	19th Nov 2019
Protocol 29 – to the Forced Labour Convention	16th September 2019

Institutional Framework

Key organisations with responsibility for environmental management in Uzbekistan are:

- Cabinet of Ministers of the Republic of Uzbekistan (COM).
- Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC).

- The Centre for State Ecological Expertise, which is under the MEEPCC.
- The Cabinet of Ministers of the Republic of Uzbekistan governs the executive body in the Republic of Uzbekistan following the Constitution of the Republic of Uzbekistan (Article 98), and the Law of the Republic of Uzbekistan "On the Cabinet of Ministers of the Republic of Uzbekistan" (new edition of 2019). The COM exercises the following main functions.

The Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC) is the main regulating body of state administration on environmental protection issues. The primary responsibilities of the MEEPCC include ensuring the implementation of a unified state policy on environmental safety, environmental protection, and the use and reproduction of natural resources; and enforcing state control over the compliance of ministries, state committees, departments, enterprises, institutions, and organisations, as well as individuals, with respect to the use and protection of land, mineral resources, water, forests, flora and fauna, and atmospheric resources. Structurally, the MEEPCC consists of the central unit (located in Tashkent), regional units (oblast) and local (district) units.

The Centre for State Ecological Expertise: The Centre for State Ecological Expertise's activities are directly related to the evaluation of materials for EIA and the issuance of documents determining compliance with environmental requirements for planned or executed business and other activities, as well as determining the admissibility of the implementation of the object of environmental expertise.

Due to the cross-cutting nature of sustainable development and the environment, virtually all other state bodies have some responsibility towards them. Other Ministries, Departments and Agencies (MDAs) related to E&S impact management in the context of the Project include (but are not limited to) those presented in the following figure.

Main National Institutions and Roles

Name of Institution	Main Role
Ministry of Energy of the Republic of Uzbekistan (MoE)	The Ministry of Energy of the Republic of Uzbekistan is the authorised state body for: (i) implementation of production sharing agreements on issues related to the main areas of its activities; (ii) implementation of a unified state policy in the field of the use of renewable energy sources; (iii) development of a unified state policy and strategic directions in the development and use of nuclear energy; (iv) introduction of modern energy-efficient and energy-saving technologies in state bodies and organizations, as well as monitoring the efficiency of energy consumption.
Ministry of Ecology and Environmental Protection and Climate Change	Ministry is responsible for managing environmental monitoring for industrial facilities. It reviews and issues technical conditions for construction and operation of facilities, both planned and existing.
State Committee for Veterinary and	Committee owns pastural lands across Uzbekistan, including Project site. It will allocate land for permanent acquisition for installation of wind turbines.

Name of Institution	Main Role
Livestock Development[1]	
Ministry of Transportation	Responsible for development of domestic and international transport corridors, improvement of the logistics system and amelioration of traffic safety. Important for the Project considering the use of public roads during construction and operation.
Sanitary and Epidemiological Welfare and Public Health Service of The Republic of Uzbekistan	Responsible for determining the Health Protection Zone (HPZ) under the Ministry of Health. The HPZ applicable for the Project is determined this government organisation.
JSC National Electric Grid of Uzbekistan (NEGU)	NEGU is entrusted with the following key functions: (a) transmission system operation and development; (b) dispatch management of the power system; (c) transmission of electricity within the country; (d) regional connectivity and electricity trade (export and import); and (e) single purchaser of electricity from generation companies, including IPPs, as well as the sale of electricity to distribution companies.

Lender E&S Requirements

The Project developer is pursuing an amount of project finance from a number of Financial Institutions (FIs), which seek to mainstream environmentally and socioeconomically sustainable development planning through the evaluation and management of E&S risks associated with investment projects, in step with:

- Internal E&S policies, standards, and guidelines
- Industry-wide, voluntary E&S risk assessment and management frameworks drawing on well-developed and internationally accredited E&S performance standards

The E&S policies, frameworks, and performance standards applicable to the Project based on its prospective lenders Asian Development Bank (ADB), Asian Infrastructure Investment Bank (AIIB), as well as the requirements of the International Financial Corporation (IFC) and Equator Principles Financial Institutions (EPFIs) are outlined in the following sub-sections.

Asian Development Bank (ADB)

The E&S policies, principles and objectives adopted by the ADB are enshrined in the Safeguard Policy Statement (SPS 2009). The main focal areas of the Policy are (i) environmental safeguards, (ii) involuntary resettlement, and (iii) Indigenous Peoples (IP) safeguards. The key objectives of the SPS include:

[1] The previous stakeholder responsible was Sericulture and Wool Industry Development Committee (SWID) Bukhara Regional Department until its abolishment and transfer of responsibilities under UP No. 15 dated January 30,2025 "On measures to introduce modern mechanisms for the protection and rational use of pastures".

- To avoid adverse impacts of projects on the environment and affected people, where possible.
- To minimise, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is impossible.
- To help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

ADB's SPS sets out the policy objectives, scope and triggers, and principles for three key safeguard areas:

- Environmental safeguards;
- Involuntary resettlement safeguards; and
- Indigenous Peoples safeguards.

ADB's Indigenous People's Safeguard is not applicable to this Project. This is because as per the ADB's requirement on Indigenous Peoples, there are no indigenous peoples within the project area of influence.

The Project is required to comply with the following policies and associated 'operations manuals' and guidelines:

- ADB Safeguard Policy Statement (2009);
- ADB Social Protection Strategy (2001) (national laws and key ILO standards);
- ADB Gender and Development Policy (1998); and
- ADB Access to Information Policy (2018).
- Accountability mechanism (2012)

Asian Infrastructure Investment Bank (AIIB)

As stated in the AIIB Environmental and Social Framework (ESF), 2024), the Bank has established an Environmental and Social Policy (ESP), which sets forth mandatory environmental and social requirements applicable to all Projects. The Policy underlies the AIIB Environmental and Social Standards (ESSs) and Environmental and Social Exclusion List (ESEL). The ESSs that govern E&S performance on AIIB-funded project include:

- ESS 1: Environmental and Social Assessment and Management (ESS 1);
- ESS 2: Land Acquisition and Involuntary Resettlement (ESS 2);
- ESS 3: Indigenous Peoples (ESS 3); and.
- Project-affected People's Mechanism (PPM).

For the screening, assessment and management of E&S risks pertaining to pollution control and environmental health and safety, the ESF stipulates conformance to the World Bank Group Environmental Health and Safety Guidelines (EHSGs).

Equator Principles

The Equator Principles (EP) is a risk assessment framework used by financial institutions to determine, assess and manage the environmental and social risk in Project's financing. Currently, over seventy-five major financial institutions from around the world have adopted the EPs. These financial institutions operate in more than 100 countries worldwide.

The Equator Principles were updated in 2006 (EPII), 2013 (EPIII) and a further update EPIV came into effect in October 2020. The EPs currently include provisions for the following:

- Principle 1: Review and Categorisation;
- Principle 2: Environmental and Social Assessment;
- Principle 3: Applicable Environmental and Social Standards;
- Principle 4: Environmental and Social Management System and Equator Principles Action Plan;
- Principle 5: Stakeholder Engagement;
- Principle 6: Grievance Mechanism;
- Principle 7: Independent Review;
- Principle 8: Covenants;
- Principle 9: Independent Monitoring and Reporting; and
- Principle 10: Reporting and Transparency.

EPIV establishes the minimum E&S standards to be adopted by EP Financial Institution (EPFIs) as those from IFC Performance Standards on Environmental and Social Sustainability (Performance Standards), the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines) and/or the relevant host country laws, regulations and permits that pertain to environmental and social issues.

IFC Performance Standards

The IFC Performance Standards are a key component of the IFC's Sustainability Framework and directed towards clients (i.e. party responsible for implementing and operating the project that is being financed), providing guidance on how to identify risks and impacts. The IFC Performance Standards are designed to help avoid, mitigate, and manage risks and impacts throughout the life of a project as a way of doing business in a sustainable way, including

stakeholder engagement and disclosure obligations of the client in relation to project-level activities.

The IFC Performance Standards (2012) are listed below:

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
- Performance Standard 2: Labour and Working Conditions
- Including International Labour Organisation (ILO) Conventions
- Performance Standard 3: Resource Efficiency and Pollution Prevention
- Performance Standard 4: Community Health, Safety, and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- Performance Standard 7: Indigenous Peoples
- Performance Standard 8: Cultural Heritage

WBG EHS Guidelines (2007)

The World Bank Group International Finance Corporation (IFC), Environmental, Health and Safety (EHS) General Guidelines of April 2007 superseded the World Bank Handbook issue of 1998.

In terms of specific guidelines to control environmental externalities (e.g. wastewater quality etc.), EHS guidelines have been set out by IFC and the World Bank Group to provide general guidelines for its members when involved in a project or when providing financial support to a project. These guidelines contain general and industry-specific examples of Good International Industry Practice (GIIP). In summary, it should be noted that the following IFC EHS Guidelines are relevant to this project:

- General EHS Guidelines, Environmental:
  - Air Emissions and Ambient Air Quality;
  - Energy Conservation;
  - Wastewater and Ambient Water Quality;
  - Water Conservation;
  - Hazardous Materials Management;
  - Waste Management;
  - Noise; and,
  - Contaminated Land.
- General EHS Guidelines, Occupational Health & Safety:

  - General Facility Design and Operation;
  - Communication and Training;
  - Physical Hazards;
  - Chemical Hazards;
  - Radiological Hazards;
  - Personal Protective Equipment;
  - Special Hazard Environment; and,
  - Monitoring.

- Community Health & Safety:
  - Water Quality and Availability;
  - Structural Safety of Project Infrastructure;
  - Life and Fire Safety;
  - Traffic Safety;
  - Transport of Hazardous Materials;
  - Disease prevention; and,
  - Emergency Preparedness and Response
- Industry Sector Guidelines, Power:
  - Electric Power Transmission and Distribution (2007)
  - Wind Energy (2015)

Applicable Environmental Standards

Applicable standards required for Project compliance are included to the respective environmental parameter sections of this report. This includes national standards and those expected for the lenders.

Air Quality - Applicable Requirements & Standards

National Regulations

The Law of the Republic of Uzbekistan "On Atmospheric Air Protection" (1996, amended on 13.03.2020)

This regulation specifies standards, quality and harmful effects norms, requirements on fuels, lubricants, production and operation of vehicles and other transport means and equipment, ozone layer protection requirements, obligations of enterprises, institutions and organisations toward atmospheric protection, and compensations of damages from atmospheric pollutions.

SanPiN № 0293-11 "Hygienic regulations. List of maximum permissible concentrations (MPC) of contaminants in the atmospheric air of inhabitant areas in the territory of the Republic of Uzbekistan"

Ambient Air Quality MPC (mg/m³)

Pollutant	(MPC mg/m³)			
	One-time	24-hour	Monthly	Annual
NO_2	0.085	0.06	0.05	0.04
NO	0.6	0.25	0.12	0.06
CO	5	4	3.5	3
SO_2	0.5	0.2	0.1	0.05
NH_3	0.2	0.12	0.06	0.04

Note: Maximum one-time concentration - the highest concentration detected at 20-30-minute sampling.

- Average daily concentration is the average of the one-time concentrations detected during the day or obtained with continuous 24-hour sampling.
- Monthly average concentration is the average of the average daily concentration detected during the month.
- Average annual concentration is the average of the number of average monthly concentrations revealed during a year in the course of one-time sampling.

Lenders Requirements

ADB, AIIB and EPFIs require adherence to the World Health Organisation (WHO) Ambient Air Quality Guidelines (2021).

WHO Ambient Air Quality Standards (µg/m³)

PARAMETER	24-HOUR	ANNUAL
PM_{10}	150 (Interim target 1)	70 (Interim target 1)
	100 (Interim target 2)	50 (Interim target 2)
	75 (Interim target 3)	30 (Interim target 3)
	50 (Interim target 4)	20 (Interim target 4)
	45 (guideline)	15 (guideline)
$PM_{2.5}$	75 (Interim target 1)	35 (Interim target 1)
	50 (Interim target 2)	25 (Interim target 2)
	37.5 (Interim target 3)	15 (Interim target 3)
	25 (Interim target 4)	10 (Interim target 4)
	15 (guideline)	5 (guideline)
NO_2	120 (Interim target 1) 50 (Interim target 2) 25 (guideline	40 (Interim target 1) 30 (Interim target 2) 20 (Interim target 3) 10 (guideline)
SO_2	125 (Interim target 1)	500 (10-minute guideline)
	50 (Interim target 2)	
	40 (guideline)	
O_3	100 (interim target 1) (8-hour daily maximum)	
	70 (interim target 2) (8-hour daily maximum)	
	60 (8-hour daily maximum guideline)	

Noise & Vibration - Applicable Requirements & Standards

NATIONAL REGULATIONS

SANPIN NO. 0267-09 relating to rules on acceptable levels for habitable areas in Uzbekistan sets out the acceptable noise levels for habitable areas both inside and outside of buildings in Uzbekistan as shown in the table below.

Noise Limits under SanPiN No.0267-09

LOCATION	TIME	SANPIN NO. 0267-09
Noise levels in premises of residential, public buildings and on the territory of residential areas	7am to 11pm	55dB(A)
	11pm to 7am	45dB(A)

SANPIN NO. NO 03225-16 sanitary standards for permissible noise levels in the workplace aims to protect the health of the staff and workers in the workplace. The law represents noise levels for a variety of internal and external application as shown in the table below:

Work Environment Noise Limits

TYPE OF WORK, WORKPLACE	REQUIREMENT
Performing all types of work on the permanent workplaces in industrial premises and in the enterprises	80db(A)

LENDERS REQUIREMENTS

ADB, AIIB and EPFIs require adherence to WHO noise standards as detailed in World Bank EHS Guidelines (2007), as shown in the following figure.

World Bank Ambient Noise Level Guidelines

RECEPTOR	ONE HOUR LAEQ DB(A)	
	DAYTIME (07:00 – 22:00)	NIGHT (22:00 – 07:00)
Residential, Institutional, Educational	55	45
Industrial, Commercial	70	70

These relates to receptors and not the plant boundary. Noise impacts should not exceed the levels presented above or result in a maximum increase in background levels of 3 dB(A) at the nearest sensitive receptor location off-site.

Furthermore, the following requirements have also been specified in the WBG EHS noise guidelines:

- No employee should be exposed to a noise level greater than 85 dB(A) for duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).
- The use of hearing protection should be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound level reaches 140 dB(C), or the average maximum sound level reaches 110 dB(A). Hearing protective devices provided should be capable of reducing sound level at the ear to at least 85 dB(A).
- For every 3 dB(A) increase in sound levels, the allowed exposure period or duration should be reduced by 50%.
- Where feasible, use of acoustic insulating materials isolations of the noise source and other engineering controls should be investigated and implemented prior to the issuance of hearing protection devices as the final control mechanism.
- Medical hearing checks on workers exposed to high noise levels should be performed periodically.

NOISE REQUIREMENTS FOR WIND PROJECTS

The World Bank/IFC EHS Guidelines for Wind Projects include information relevant to the EHS aspects of onshore and offshore wind energy facilities.

For operational phase noise, the IFC Guideline for Wind Energy include principles for the assessment of sound from wind turbines, which include the following (WBG/IFC, 2015):

- Receptors should be chosen according to their environmental sensitivity (human, livestock or wildlife);

- Preliminary modelling should be carried out to determine whether more detailed investigation is warranted. The preliminary modelling can be as simple as assuming hemispherical propagation (i.e., the radiation of sound, in all directions, from a source point). Preliminary modelling should focus on sensitive receptors within 2,000 meters (m) of any of the turbines in a wind energy facility;
- If the preliminary model suggests that turbine noise at all sensitive receptors is likely to be below an LA90 to 35 dB(A) at a wind speed of 10 meters/second (m/s) at 10m height during day and night times, then this preliminary modelling is likely to be sufficient to assess noise impact; otherwise, it is recommended that more detailed modelling be carried out, which may include background ambient noise measurements;
- All modelling should take account of the cumulative noise from all wind energy facilities in the vicinity having the potential to increase noise levels;
- If noise criteria based on ambient noise are to be used, it is necessary to measure the background noise in the absence of any wind turbines. This should be done at one or more noise-sensitive receptors. Often the critical receptors will be those closest to the wind energy facility, but if the nearest is also close to other significant noise sources, an alternative receptor may need to be chosen; and
- The background noise should be measured over a series of 10-minute intervals using appropriate wind screens. At least five of these 10-minute measurements should be taken for each integer wind speed from cut-in speed to 12 m/s.

The above principles are referenced from the following key guidance documents:

- ETSU, Report ETSU-R-97 "The Assessment & Rating of Noise from Wind Farms" 1997.
- Institute of Acoustics (IOA) "A Good Practice Guide to the Application of ETSU-R-97 for the Assessment & Rating of Wind Turbine Noise" 2013.
- D. McLaughlin "Wind Shear and its Effect on Wind Turbine Noise Assessment" Acoustic Bulletin, July/August 2012, 39-42.

VIBRATION GOOD PRACTICE GUIDELINE

Good practice vibration exposure limits and action values are stated in guidance issued by the American Conference of Governmental Industrial Hygienists (ACGIH), which advises threshold limit values for both hand-arm vibration and whole-body vibration.

Geology, Soil & Groundwater - Applicable Requirements & Standards

NATIONAL REGULATIONS

The protection of geological formations, soil and water resources in Uzbekistan is regulated by the following laws and regulations:

SOIL QUALITY

- SanPiN No.0272-09 Sanitary rules and norms for compiling hygienic justifications for soil protection schemes from pollution in Uzbekistan": The Sanitary Rules and Norms include the basic requirements for development of hygienic justification for the soil

protection schemes against pollution, duties and functions of state sanitary supervision bodies in this area.

- SanPiN No.0191-05 Maximum permissible concentrations (MPC) and Approximate allowable concentrations (AAC) of exogenous harmful substances in soil: This defines MPC values of chemicals and pesticides polluting the soil. MPCs and AACs are designed to ensure that there is no negative direct or indirect impact on human health, its future generations and public health through soil contact.
- SanPiN No.0212-06 Sanitary rules and norms for the hygienic assessment of soil contamination of different types of land use: This document provides a unified methodology for hygienic assessment of soil pollution using a nomenclature of indicators of soil hygienic condition, which should be used both in the development of regulatory and technical documentation on the hygiene of soils, and in assessing the degree of its pollution.

WATER RESOURCES

Water resource management, allocation and use in Uzbekistan falls under the Ministry of Agriculture and Water Resources (MAWR), which oversees national authorities I.e. provisional and district departments of agriculture and water resources and inter provincial and inter district river management authority.

Constitution of the Republic of Uzbekistan: Article 55 states "Land, depths, water, flora and fauna and other natural resources are national wealth, should be rationally used and are under state protection."

The Law of the Republic of Uzbekistan "On water and water use" (1993 as amended on 01.12.2021) enshrines the key objectives for water legislation in Uzbekistan setting the following requirements:

- Article 1 requires "Regulation of water relations; effective use of water; protection of water from pollution, littering and exhaustion; prevention and liquidation of harmful impact on water resources; improvement of state water objects; and protection of the rights of enterprises, organisations, farms and citizens in the field of water relations."
- Article 3 stipulates that "Water resources are the state property and wealth of the Republic of Uzbekistan, should be rationally used and is protected by the state."

The law authorises the State through authorized agencies to carry out management and control of water use and protection.

Other key legislations and standards relevant to the Project include:

- SanPiN No 0255-08 which provides the criteria for hygienic assessment of the level water bodies contamination for health risks to the population in Uzbekistan.
- Decree of the Cabinet of Ministers No.255 of 31.03.2018 On the approval of some administrative regulations of the provision of public services in the field of nature use (scheme for issuing permits for special water use or water consumption) as amended on 15.01.2020.

- SanPiN RUz No. 0318-15. Hygienic and anti-epidemic requirements for the protection of water in reservoirs on the territory of the Republic of Uzbekistan.

The Decree № 981 of December 11, 2019 "Regulation on procedure of establishing water protection zones and sanitary protection zones for water bodies on the territory of the Republic of Uzbekistan".

LENDERS REQUIREMENTS

ADB

ADB Safeguard Requirements for Environment includes specific requirements to prevent pollution and to minimise or control the intensity or loads of pollutant emissions and discharge. This includes effective management of hazardous materials and wastes, which can all have an influence on soil and/or groundwater quality.

AIIB

ESS1 – Environmental and Social Assessment and Management: Point 38 relates to pollution prevention and references international good practice and internationally recognised standards such as the WBG EHS Guidelines.

EPFIs

IFC Performance Standard 3 on 'Resource Efficiency and Pollution Prevention' requires the client and/or the Project to:

- Avoid or minimise adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities; and
- Prevent the release of pollutants to water and land due to routine, non-routine, and accidental circumstances, or when not feasible, minimize and/or control the intensity and mass flow of their release.

GIIP

The Dutch Standards are environmental pollutant reference values (i.e., concentrations in environmental medium) used in environmental remediation, investigation and clean-up. The standards identify maximum allowable concentrations for contaminants in soil and groundwater. The soil intervention values indicate when the functional properties of the soil for humans, plants and animals is seriously impaired or threatened. They are representative of the level of contamination above which a serious case of soil contamination is deemed to exist. Groundwater target values provide an indication of the benchmark for environmental quality in the long term, assuming that there are negligible risks for the ecosystem.

The Dutch Standards for the most significant pollutants are presented in the table below. Where a parameter is not covered by the Dutch Standards, other appropriate international standards shall be used.

Dutch Soil and Groundwater Standards

Contaminant	Soil/Sediment (mg/kg dry weight)		Groundwater (µg/l)	
	Target	Intervention	Target	Intervention
1. Metals				
Antimony	3	15	-	20
Arsenic	29	55	10	60
Barium	200	625	50	625
Cadmium	0.8	12	0.4	6
Chromium	100	380	1	30
Chromium III	-	180	-	-
Chromium VI	-	78	-	-
Cobalt	9	240	20	100
Copper	36	190	15	75
Mercury	0.3	10	0.05	0.3
Mercury (inorganic)	-	36	-	-
Mercury (Organic)	-	4	-	-
Lead	85	530	15	75
Molybdenum	3	200	5	300
Nickel	35	210	15	75
Zinc	140	720	65	800
2. Other inorganic substances				
Chloride (mg Cl/l)	-	-	100	-
Cyanide (free)	1	20	5	1500
Cyanide (complex)	5	50	10	1500
Thiocyanate	1	20	-	1500

- **Note**: The soil values are calculated for a 'Standard Soil' with 10% organic matter and 25% clay. A case of environmental contamination is defined as 'serious' if >25 m^3 soil or >100 m^3 groundwater is contaminated above the intervention value.
- **Source**: Soil Remediation Circular 2009, Annex 1: Groundwater target values and soil and groundwater intervention values. (*Target values for soil refer to 2000 version as they are not present in the 2009)
- Where contaminants are found to exceed 'intervention' levels, this is considered to be a case of soil contamination, which is dangerous to the health of humans and the natural environment. Such a level of contamination should prompt a need for remediation, appropriate treatment and disposal.

Terrestrial Ecology & Avifauna - Applicable Requirements & Standards

NATIONAL REGULATIONS

The Law of the Republic of Uzbekistan "On Nature Protection" (1992) as amended in 2021

This law is the key national environmental law for the protection of the environment and the sustainable use of resources and the right for the population to a clean healthy environment. This law states legal, economic, and organisational basis for the conservation of the environment and the rational use of natural resources. Article 25 of this law states that the State Environmental Expertise (SEE) is a mandatory measure for environmental protection, preceded to decision making process. In addition, the law prohibits the implementation of any Project without approval from SEE.

The Law of the Republic of Uzbekistan "On Protected Natural Reserves" (2004) as amended in 2020

This law regulates the use and protection of protected natural territories. The main aim is to ensure preservation of typical, unique, genetic banks of plants and animals, prevent negative impact of human activities on nature, promote the study of natural processes and monitoring of the environment including promotion of environmental education.

The Law of the Republic of Uzbekistan "On Protection and Use of the Wildlife" (1997) as amended in 2016

This law regulates the use, protection, reproduction and restoration of wildlife in order to promote conservation and ensure diversity of species in their natural habitat.

Other laws and regulations include:

- The Law of the Republic of Uzbekistan "On Protection and Use of Vegetation" (1997) as amended in 2021.
- Decree of the Cabinet of Ministers "Regulation on the procedure for using plant world objects and passing licensing procedures in the field of using plant world objects" No. 290 of 10.10.2014 as amended in 2020. The law sets out the requirements to obtain permission to cut wood and shrub plantations that are in the zone of the construction site.

Decree of The President of The Republic of Uzbekistan, Dated December 30, 2021, No. UP-46 on Measures to Accelerate Greening Works and Further Effective Organization of Tree Protection in the Republic

The Decree prohibits the following:

- Acceptance of applications for tree cutting through centers of state services and the Unified Portal of Interactive Government Services.

- Issuance of conclusions on tree and shrub cutting by territorial environmental protection authorities.
- Issuance of permits by district and city administrations for the cutting of trees and shrubs not included in the state forest fund, for which a moratorium has been introduced.
- Pruning and cutting of trees and shrubs damaged by natural factors, plant diseases, and those posing a threat to human life and health, according to the document, can only be carried out by the landscaping authorities.
- Where trees not included in the forest fund have to be cleared for development and construction purposes, compensatory replanting must be carried out at a ratio of 10 young trees for one tree cut.

LENDERS REQUIREMENTS

ADB

An element of the ADB Safeguard Requirement 1: Environment includes 'Biodiversity Conservation and Sustainable Natural Resource Management'.

It is stated that, *'The borrower/client will assess the significance of project impacts and risks on biodiversity and natural resources as an integral part of the environmental assessment process... The assessment will focus on the major threats to biodiversity, which include destruction of habitat'*… Further, *'The borrower/client will need to identify measures to avoid, minimize, or mitigate potentially adverse impacts and risks*…

Concerning the proposed Project site, as the land has been used for agriculture, *'the borrower/client will exercise care to minimize any further conversion or degradation of such habitat, and will, depending on the nature and scale of the project, identify opportunities to enhance habitat and protect and conserve biodiversity as part of project operations.*

AIIB

As outlined in AIIB's ESF, the Bank "*recognises that protecting and conserving biodiversity, sustainably managing terrestrial and aquatic natural resources and maintaining core ecological functions and services are fundamental to sustainable development. The objective of biodiversity conservation and sustainable management of natural resources should be balanced with a commitment to sustainable use of the multiple economic, social and cultural values of biodiversity and natural resources in an optimized manner. Through the Projects it finances, the Bank seeks, where applicable, to: (a) avoid adverse impacts on biodiversity and ecosystem services; and (b) assist its Clients in protecting and conserving biodiversity and promoting the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities*."

EPFI's

The assessment of impacts upon terrestrial ecology is required with due consideration to IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Natural Resource Management. PS6 establishes requirements for protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources. When avoidance of impacts is not possible, measures to minimise impacts and restore biodiversity and ecosystem services should be implemented. Specifically, it is necessary to determine baseline conditions and categorise the projects habitats as 'critical', 'modified' or 'natural' to undertake the necessary assessment. The Performance Standard defines the different habitats as follows:

- Natural Habitat: "Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition";
- Critical Habitat: "Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes"; and
- Modified Habitat: "Modified habitats are areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition. Modified habitats may include areas managed for agriculture, forest plantations, reclaimed6 coastal zones, and reclaimed wetlands".

Landscape and Visual Impacts - Applicable Requirements & Standards

There are no regulations or standards in Uzbekistan that provide requirements for assessing landscape character, visual impacts and shadow flicker from wind turbines.

The EHS Guidelines for Wind Energy (2015) outline that *'preparing zones of visual influence maps and preparing wire-frame images and photomontages from key viewpoints is recommended to inform both the assessment and the consultation processes.'*

'Consideration should also be given to the proximity of turbines to settlements, residential areas, and other visual receptors to minimize visual impacts and impacts on residential amenity, where possible. All relevant viewing angles should be considered when considering turbine locations, including viewpoints from nearby settlements.'

Solid Waste & Wastewater Management - Applicable Requirements & Standards

NATIONAL REGULATIONS

THE LAW OF THE REPUBLIC OF UZBEKISTAN "ON WASTES" (2002) AMENDED IN 2019

The principal objective of this law is to prevent the negative impacts of solid wastes on human lives and health as well as the environment, reduce waste generation and encourage rational use of waste reduction techniques.

Article 19 Provided generated waste is subject to export and import operations, or hazardous waste is subject to transportation, an environmental certification procedure shall be completed by the Project to confirm compliance with sanitary and environmental norms and standards associated with waste management.

Article 20 states that transportation of hazardous waste shall be in specially designated types of vehicles with a waste certificate and permit. The responsibility for safe transportation of hazardous waste shall be with the transporting organisation.

Article 22 of the Law on Wastes specifies the general requirements for waste storage and disposal. Waste disposal of recyclable waste is prohibited in Uzbekistan. In addition, storage and disposal of waste in the environment including in nature conservation and protected areas, settlements, health and recreational areas or historical and cultural facilities is prohibited.

SANPIN NO 0127-02 – "SANITARY PROCEDURES FOR INVENTORY, CLASSIFICATION, STORAGE AND DISPOSAL OF INDUSTRIAL WASTE"

This regulation and norm ensure optimal hygienic accounting and inventory of industrial wastes, determination of toxicity index and classification of industrial waste by hazard classes with optimal selection of ways to neutralise and utilise them.

SanPiN of the Republic of Uzbekistan dated 29/7/2002 No 0128-02 – "Hygienic classifier of toxic industrial wastes in the Republic of Uzbekistan. Hazardous waste is classified into four groups known as "hazard classes". Waste hazards are assessed based on this law. Hygienic classifier of industrial hazardous waste and SanPiN No 0127-02-Sanitary procedures for industrial waste inventory, classification, storage and disposal. Waste hazard classes include:

- Class I: Extremely hazardous waste;
- Class II: Highly hazardous waste;
- Class III: Moderately hazardous waste;
- Class IV: Low hazardous waste; and

Other relevant regulations and standards include:

- SanPiN № 0157-04 "Sanitary requirements to the storage and neutralization of solid domestic waste on special grounds in Uzbekistan"

- SanPiN of the Republic of Uzbekistan dated 16/11/2011 No 0300-11 "Sanitary Rules and Standards for managing collection, inventory, classification, treatment, storage and disposal of industrial waste in the context of Uzbekistan
- Regulation "On the Procedure for the Disposal, Collection, Pay Settlement, Storage and Removal of Waste Industrial Oils" annexed to the Decree of the Cabinet of Ministers dated 04/09/2012 No.258
- Regulation on the Procedure for Handling Coloured and Black Metal Scrap" annexed to the Decree of Cabinet of Ministers dated 06/06/2018 No. 425
- SanPiN No. 0158-04 - Sanitarian Rules and Norms on collection, transportation and disposal of wastes containing asbestos in Uzbekistan

LENDERS REQUIREMENTS

SOLID WASTE

ADB

The Environmental Safeguard requires the borrower/client to avoid, or where avoidance is not possible, to minimise or control the generation of hazardous and non-hazardous wastes and the release of hazardous materials resulting from project activities. Where waste cannot be recovered or reused, it will be treated, destroyed, and disposed of in an environmentally sound manner.

Where the waste disposal is conducted by third parties, the borrower/client is required to use reputable and legitimate enterprises licensed by the relevant regulatory agencies.

AIIB

ESS1 – Environmental and Social Assessment and Management: Point 38 states the need to '*Minimize and manage waste generation, including through waste reduction and recycling, and release of hazardous materials from production, transportation, handling and storage*.'

AIIB

ESS1 – Environmental and Social Assessment and Management: Point 38 states the need to '*Minimize and manage waste generation, including through waste reduction and recycling, and release of hazardous materials from production, transportation, handling and storage*.'

EPFIs

Section 1.6 of "the IFC General EHS Guidelines" is entitled Waste Management and is applicable to all projects that generate, store or handle any quantity of waste; whilst Section 1.5 of the IFC EHS Guidelines covers Hazardous Materials Management. The waste management guidelines state that facilities that generate and store wastes should practice the following:

- Establish waste management priorities at the outset of activities;

- Identify EHS risks and impacts and consider waste generation and its consequences;
- Establish a waste management hierarchy that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of wastes;
- Avoid or minimize the generation of waste materials, as far as practicable;
- Identify where waste generation cannot be avoided but can be minimized or where opportunities exist for, recovering and reusing waste; and
- Where waste cannot be recovered or reused, identify means of treating, destroying, and disposing of it in an environmentally sound manner.

WASTEWATER

EPFIs

The IFC/WBG General EHS Guidelines (2007) establish general requirements for direct or indirect discharge of wastewater from utility operations or storm water to the environment.

'Projects with the potential to generate process wastewater, sanitary (domestic) sewage, or storm water should incorporate the necessary precautions to avoid, minimize, and control adverse impacts to human health, safety, or the environment'.

However, wastewater effluent pollutant limits are only established for sanitary wastewater for discharge to the sanitary sewer systems. World Bank General EHS Guidelines (2007) (ref. Table 1.3.1 of IFC EHS Guidelines), provides indicative values for treated sanitary wastewater effluent.

Traffic & Transportation – Applicable Requirements and Standards

NATIONAL REGULATIONS

The Ministry of Transportation is responsible for all transport related activities and their requirements should be fully complied with in terms of routing of HGVs and site vehicles, licensing, road diversions, heavy/wide loads etc. Some of the relevant national requirements for the Project include:

- Law "About traffic safety" of the Republic of Uzbekistan August 19, 1999 No. 818-I (as amended on 29-12-2015): The main objective of this law is to ensure protection of life and health of citizens and their protection.
- Regulations on road safety during transportation of large and heavy loads by road transport (Annex No.2 to the Decree of Cabinet of Ministers No. 342 of December 26, 2011): This law determines the requirements of ensuring and coordinating traffic safety during the transportation of large size and heavy loads on public roads on the territory of Uzbekistan. It also details the basic requirements for the technical condition equipment and furnishing of vehicles used for the transport of large and heavy loads as well as safety.
- Criteria and Procedure for Determining International Road Transportation of Loads (approved by the Decree of Ministry of Transport of the Republic of Uzbekistan and

State Customs Committee of the Republic of Uzbekistan dated October 31, 2019, No. 6).

- Regulations on transport of loads by road in the Republic of Uzbekistan (Annex to Decree of Cabinet of Ministers No. 213 of 01.08.2014)

LENDERS REQUIREMENTS

The assessment will be undertaken with due consideration of the recommendations set out within the IFC/World Bank General EHS Guidelines (2007) Section 3.4 Traffic Safety, within Section 3: Community Health and Safety.

Separate considerations regarding Community Health and Safety are also provided in the IFC EHS Guideline for Wind Energy (2015). This includes relevant items for 'Abnormal Load Transportation'.

Archaeology & Cultural Heritage – Applicable Requirements and Standards

NATIONAL REGULATIONS

Relevant legislation in Uzbekistan relating to archaeology and cultural heritage include:

- Law No. LRU-229 "On protection and use of the objects of archaeological heritage" (13 October 2009).
- Law No. 269-II "On the Protection and Use of Cultural Heritage Sites (30 August 2001, as amended).
- Presidential Decree No. R-5181 "On improving the protection and use of objects of tangible cultural and archaeological heritage" (16 January 2018).
- Resolution of the President of the Republic of Uzbekistan № RP-4068 dated December 19, 2018 "On measures for improving actions for protection of material cultural heritage objects".
- Resolution of the Cabinet of Ministers of the Republic of Uzbekistan № 846 dated October 4, 2019 "On approval of the national list of real state sites and objects of material cultural heritage".

The above laws seek to protect and sites and objects of cultural heritage which are considered as part of the national heritage for all the people in Uzbekistan.

In addition, the Criminal Code of the Republic of Uzbekistan includes provisions that prohibit the intentional destruction or damage of objects of tangible cultural heritage under state protection, with further protections in place to protect cultural property in PAs, in particular protected historical and cultural territories, without first obtaining permission.

LENDERS REQUIREMENTS

ADB

ADB's Safeguard Policy Statement and related Safeguards, include various requirements for cultural resources of importance locally, provincially, nationally, and internationally. Where such resources are identified the ADB safeguards highlight the importance of consulting with the communities who use such facilities, as well as the regulatory agencies entrusted with protecting such resources.

When a project is located in areas where physical cultural resources are expected, the ADB Safeguard Policy Statement requires the use of "chance find" procedures that include a pre-approved management and conservation approach for materials that may be discovered during project implementation.

AIIB

AIIB's ESF outlines the requirement to conserve and avoid impacts on cultural resources. The Framework further states "*when avoidance of impacts on cultural resources is not feasible, prepare a cultural resources management plan to mitigate and monitor these impacts*."

EPFI's

In accordance with the Equator Principles, the assessment will refer to applicable IFC Performance Standards on Social and Environmental Sustainability, specifically with due consideration of Performance Standard 8 – Cultural Heritage. PS8 aims to protect the adverse impacts of project activities and support its preservation and to promote equitable sharing of benefits from the use of cultural heritage. Cultural heritage in this standard refers to:

- Tangible forms of cultural heritage, such as tangible moveable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values;
- Unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls; and
- Certain instances of intangible forms of culture that are proposed to be used for commercial purposes, such as cultural knowledge, innovations, and practices of communities embodying traditional lifestyles.

Socio-Economics – Applicable Requirements and Standards

NATIONAL REGULATIONS

CONSTITUTION OF UZBEKISTAN (1992, AS AMENDED IN 2023)

The Constitution of Uzbekistan guarantees fundamental rights and freedoms in various domains:

SOCIAL INFRASTRUCTURE:

- Articles 48, 49, and 50 ensure:
- The right to health care and education.
- The right to a favourable environment and access to reliable environmental information.

LAND TENURE:

- Article 41 affirms the right to property ownership.
- Article 47 guarantees the right to housing and compensation in case of deprivation.
- Article 65 protects private property and ensures its legal equality.

LIVELIHOODS AND POVERTY ALLEVIATION:

- Article 43 mandates government measures for employment, protection against unemployment, and poverty reduction.
- Article 57 directs improvements in the quality of life for vulnerable groups to enhance their social participation and self-sufficiency.
- Article 67 grants entrepreneurs the right to conduct business activities independently.

HUMAN RIGHTS:

- Article 4 promotes respect for languages, customs, and traditions of all ethnic groups.
- Article 19 ensures equal rights and freedoms for all citizens without discrimination.
- Articles 25 and 26 protect the right to life and prohibit torture and cruel treatment.
- Article 27 specifies conditions for lawful restriction of freedom.
- Article 34 guarantees access to information related to rights and legitimate interests.
- Article 55 guarantees access to a competent, independent court.
- Article 58 mandates gender equality.

These provisions establish a comprehensive framework for rights, liberties, and duties in Uzbekistan.

THE LAND CODE (1998, AMENDED IN 2022)

The Land Code outlines land classification, allocation, use, and protection in Uzbekistan, including individual and collective land tenure and various land categories.

Key Provisions:

- Article 16: States all land is a national treasure and must be managed sustainably to support life, economy, and welfare.

- Article 19: Grants lifelong inheritable rights for dekhan/peasant farms, individual residences, and collective gardening.
- Article 24: Allows short-term and long-term (up to 50 years) leaseholds for agricultural and foreign investment enterprises, prohibiting sub-leases.
- Article 28: Requires initial and annual rent payments for leased land, based on its quality, location, and water supply.
- Article 33: Identifies legal tenure documents as state certificates and land-use agreements.
- Articles 59 & 60: Categorize land use for urban building, common use, agriculture, forestry, industry, transport, military, restricted use (wildlife, hazardous, cultural, recreational), water supply, and reserves.

Land administration framework

In addition, the Land Code establishes the institutional framework for the administration of land in Uzbekistan. The main governmental entities involved in the management of land resources include (but are not limited to):

- The Cabinet of Ministers of the Republic of Uzbekistan (as relevant)
- Council of Ministers of the Republic of Karakalpakstan (as relevant)
- State Assets Management Agency
- State Tax Committee
- Chamber of State Cadastres of the Cadastre Agency
- Regional Khokimiyats

THE CIVIL CODE (1996, AMENDED IN 2022)

The Civil Code comprehensively addresses civil relations, property rights, and contractual obligations in Uzbekistan:

- It defines the legal status of participants in civil relations, outlines procedures for property rights, and regulates contractual obligations.
- The code establishes rules for property withdrawal, value determination, compensation rights, and conditions for rights deprivation.
- It ensures full compensation for losses incurred due to rights violations, covering expenses to restore rights, property damage (real damage), and lost profits from normal civil activity.
- Article 8 stipulates that property rights subject to state registration arise upon registration, unless specified otherwise by law.
- Article 14 allows for compensation, including lost profits, if rights are violated and income is lost as a result.
- Article 83 defines immovable property as land, subsoil, buildings, and other fixtures firmly connected to the land.

- Article 84 mandates state registration for ownership and real property rights, making them legally effective only upon registration.
- Presidential Decree № DP-6243, dated June 8, 2021 "On measures to ensure equality and transparency in land relations, reliable protection of rights to land and their transformation into market assets"

Changes in procedure of land allocation were made on June 8th, 2021 through the Presidential Decree "On measures to ensure equality and transparency in land relations, reliable protection of rights to land and their transformation into market assets". Based on this PD, the authority of district governors to allocate land directly is abolished. It is also prohibited to seize, reserve, or transfer land with any document. This means, from August 1, 2021, some rights on land of local governors were restricted, and such restrictions will also affect the process of purchasing and leasing land. This is now forbidden for local governors to transfer land to citizens, businesses, organizations through immediate decision.

Instead, all types of land, including agricultural, commercial as well as for residential purposes will be allocated through an open electronic tender to winning bidder granting lease or ownership rights (depending on type of land and tender conditions).

The "E-AUCTION" is the platform that uses a software for online auctions, allowing participation via the internet and ensuring no interference during processing and the selection process of the winner. Initially, from September 1, 2017, it was used for property sales related to court documents. Due to its success, the platform was expanded to other sectors by government decisions.

The platform enables citizens to participate in fair and transparent auctions for a range of assets, including state properties, real estate, vehicles, land plots, mineral extraction rights, cleaning services, advertising installation rights, and more.

The aim is to ensure legality, transparency, and fairness in auctions, prevent price manipulation, and protect the integrity and confidentiality of information. The organization of these auctions is managed by JSC "Organization of electronic online auctions" for individuals and legal entities. All land acquisition for private leasehold is managed through State Asset Management Agency via an online auction process. Locally these auctions are managed by regional/district departments of cadastral agencies.

The process of obtaining Land Lease Agreement is as follows:

- UZSAMA posts notification on e-auction website indicating tender with details on the size, location, leasehold or freehold allocation, rent and/or initial prices of the plots.
- Candidates select and submit application suitable lot with type of land needed published at e-auction. Application must be submitted before the deadline indicted for selected lot/tender.

- Summitted applications are reviewed separately before auction take place. Selected candidates for auction process make pre-payment established for biding tender.
- Winning bidder is selected at auction process with a participation of selected candidates.
- Once auction is completed, winning bidder is awarded with certificate which will be a basis for issuing and signing LLA with relevant local municipalities (depending on location of land plot).
- Pre-payment done for tender is returned to all unsuccessful candidates.

These auctions are open to public bidders nationwide and are highly competitive, with land awarded based on the best price and performance on income-related criteria (e.g., agricultural performance and liabilities history). There is no fixed auction schedule, and land parcels of various sizes are auctioned as they become available, making it difficult to predict the availability and location of land. To participate, bidders must pay a bidding fee equivalent to 15% of the starting price, and depending on the leasehold type, the full cost of the land may need to be settled upfront.

LAW NO 781 ON PROCEDURES FOR THE WITHDRAWAL OF LAND PLOTS FOR PUBLIC NEEDS WITH COMPENSATION (2022)

This law outlines the expropriation of private land for public purposes, specifying conditions, procedures, and compensation for legally registered landholders.

Land Withdrawal Provisions:

- Article 4: Defines 'public need' developments justifying land withdrawal, including infrastructure projects like roads, railways, airports, bridges, energy lines, and irrigation systems.
- Article 13: Requires project initiators to identify the most suitable land with minimal pre-existing priority assets and present documentation to the Regional Khokimiyat.
- Article 14: Stipulates that land expropriation initiatives and supporting materials must be reviewed by the Cabinet of Ministers, resulting in a resolution for the project. The relevant khokimiyat is responsible for fulfilling obligations related to land withdrawal as per the resolution.

Compensation Provisions:

- Article 23: Specifies compensation for legal landholders, including market value for immovable property, compensation for lifelong/inheritable ownership, perennial plantations, and transitional expenses.
- Articles 24 & 25: Legalize monetary and in-kind compensation, requiring replacement assets of equal value and compensation for immovable assets within 24 months of eviction.
- Article 25: States that compensation for common property must be distributed according to ownership shares and paid within six months of the agreement or one month if monetary. Compensation amounts are subject to inflation indexation.

OTHER LEGISLATION

The following legislation provides for relevant socioeconomic aspects, including land access:

- Law of the Republic of Uzbekistan on State Land Cadastre No.666-I of 28.08.1998
- Urban Planning Code of the Republic of Uzbekistan (2021)
- Presidential Decree No. UP-5495 on measures on cardinal improvement of investment climate in the republic of Uzbekistan
- Resolution of the Cabinet of Ministers No.146 (2011), Appendix No. 2 to the regulation on the procedure for compensation for losses of landowners, users, tenants, and owners, as well as losses of agricultural and forestry production
- Resolution No. 911 of the Cabinet of Ministers (2019) on the procedure for withdrawal of land plots and compensation to owners of immovable property located on the land plot
- Law on Guarantees with Respect to Equal Rights and Opportunities for Women and Men (2019).

LENDERS REQUIREMENTS

ADB

The ADB Environmental Safeguards include the need to assess socio-economic project impacts in ESIA (including impacts on livelihood through environmental media, health and safety, vulnerable groups, and gender issues).

Specifically, 'The borrower/client will identify and assess the risks to, and potential impacts on, the safety of affected communities during the design, construction, operation, and decommissioning of the project, and will establish preventive measures and plans to address them in a manner commensurate with the identified risks and impacts.'

ADB's Safeguard Requirement 2 on Involuntary Resettlement safeguard requires socio-economic surveys and census to be undertaken to identify all persons who will be displaced by the project and to assess the project's socioeconomic impacts on them.

ADB SPS Safeguard Requirement on Involuntary Resettlement requires meaningful consultation to be undertaken with affected persons, their host communities and civil society for every project with the potential for involuntary resettlement impacts. Consultation should be undertaken in a manner commensurate with the impacts on affected communities paying particular attention to the need of disadvantaged or vulnerable groups. This Safeguard Requirement also requires the establishment of a grievance redress mechanism to receive and facilitate the resolution of concerns and grievances from affected persons about physical and economic displacement and other project impacts, paying particular attention to the impacts on vulnerable groups.

ADB's SR2 also aims to avoid involuntary resettlement where possible; to minimise involuntary resettlement by exploring project and design alternatives; to enhance at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and to improve the standards of living of the displaced poor and other vulnerable groups.

The safeguard also requires adverse economic, social, or environmental impacts from project activities other than land acquisition such as loss of access to assets or resources or restrictions on land use to be avoided, or at least minimized, mitigated or compensated for through the environmental assessment process. Where such impacts are found to be adverse, the borrower/client is required to develop and implement a management plan to restore the livelihood of affected persons to at least pre-project level or better.

AIIB

ESS2 addresses impacts of Project-related land acquisition, including restrictions on land use and access to assets and natural resources, which may cause physical displacement (relocation, loss of land or shelter), and/or economic displacement (loss of land or assets, or restrictions on land use, assets and natural resources leading to loss of income sources or other means of livelihood).

Section D 'Social Coverage' outlines the requirement for social assessment, including, but not limited to, vulnerable groups and discrimination, gender, gender-based violence, land and natural resource access, loss of access to assets or resources or restrictions on land use.

EPFI's

Several of the IFC Performance Standards have elements that relate to socio-economics. Key requirements for the assessment of socio-economic impacts are outlined in PS1, whilst PS5 on Land Acquisition and Involuntary Resettlement has important requirements relating to projects that acquire land or will necessitate physical or economic displacement to PAPs, including compensatory measures.

Community, Health, Safety & Security – Applicable Requirements and Standards

NATIONAL REGULATIONS

Constitution of the Republic of Uzbekistan (1992, as amended in 2023)

The constitution of the Republic of Uzbekistan lays out an array of constitutional rights, entitlements and duties pertaining to public health and safety, and access to judicial remedies for criminal offences. Key articles in this connection include the following:

- Article 25 states "The right to life is an inalienable right of every human being and shall be protected by law".

- Article 26 states "Human honour and dignity are inviolable. Nothing may be a basis for their derogation. No one shall be subjected to torture, violence or other cruel, inhumane, or degrading treatment or punishment.
- Article 27 states "Arrest, commitment, and confinement are allowed only by a court decision. Without a court decision, a person may not be detained for more than forty-eight hours".
- Article 40 states "Everyone shall have the right to a favourable environment, reliable information about its condition.
- Article 48 states "Everyone shall have the right to health and qualified medical care".
- Article 55 states "Everyone shall be entitled to legally defend his/her rights and freedoms and shall have the right to appeal any unlawful decisions, acts and omissions of State bodies and other organizations, their officials".

Resolution of Cabinet of Ministers of Republic of Uzbekistan No.95 on the approval of general technical regulations of environmental safety (2020)

Provides for the establishment of health protection zones and isolation measures for energized national grid components, including electrical sub-stations and powerlines. These exclusion zones and safeguards are intended to prevent negative impacts on human health and ecological receptors, including exposure to hazardous levels of electromagnetic radiation, electrocution, and collision-related avian mortality.

Decree of the Cabinet of Ministers of the Republic of Uzbekistan No.1050 on approval of rules for protection of power grid facilities (2018)

This decree establishes the procedure for mandating Grid Security Zones (GSZ) for power grid facilities, as well as special conditions for using land located within these exclusion zones, to ensure sustainable operation of the said facilities, with minimum risk to public health and safety, as well as vulnerable wildlife.

Grid Security Zones for power grid facilities shall be established on both sides of the power transmission line from the outermost wires and along the perimeter of substations at the following distances for voltages:

- 110kV – 20 meters from each outer-most conductor
- 220kV – 25 meters from each outer-most conductor
- 500kV – 30 meters from each outer-most conductor

The Health Protection Zone for the WTGs has been established by the Agency for Sanitary and Epidemiology as 250 meters and for the OHTL as 30 meters.

San Rules & Norms No. 0236-07 – Sanitary norms and rules to ensure safety for people living near high voltage power transmission lines (2007)

This regulation prescribes the Health Protection Zone (HPZ) for overhead transmission lines planned within areas including human settlements and establishments. The extent of mandatory HPZ is commensurate with the voltage rating of overhead powerlines. The HPZ serves to safeguard the public from hazardous exposure to electromagnetic fields radiating from high-voltage powerlines.

The lateral extent of the HPZ is measures from the outermost conductors along a given overhead transmission line alignment, as follows:

- Up to 110kV/m – 10 meters from each outer-most conductor
- Up to 220kV/m – 15 meters from each outer-most conductor
- Up to 330kV/m – 20 meters from each outer-most conductor
- Up to 500kV/m – 30 meters from each outer-most conductor
- Up to 570kV/m – 40 meters from each outer-most conductor

Law on protection of women from harassment and abuse (2019)

The national law provides for the protection of women from all forms of harassment and abuse. While violence against women is recognized in the Criminal Code of Uzbekistan, provisions for the registration, investigation, and prosecution of GBV are not prescribed in the Code.

In furtherance of the Code, the Act established specific procedures for the management of GBV cases for relevant law enforcement authorities and mandates the provision of medical, psychological, legal, economic, and humanitarian support to victims of GBV. In 2020, systems for the issuance of protection orders for victims of GBV were fully instituted across the country.

Resolution on measures to improve the system of social rehabilitation and adaptation, and the prevention of domestic violence (2018)

The Resolution No. PP-3827 of the Head of the State dated 07.02.2018 "On measures to improve the system of social rehabilitation and adaptation, as well as the prevention of domestic violence" identifies priority areas for improving the system of social rehabilitation and adaptation, prevention of family and domestic violence, and approved the program of practical measures to improve the system of social rehabilitation and adaptation, as well as the prevention of domestic violence.

The Resolution provides for the following key measures:

- Priority areas include improving the social system of rehabilitation, adaptation and preventative measures against domestic violence.
- A program of practical measures to improve the system of social rehabilitation, adaptation and prevention of domestic violence.

- A Center for Rehabilitation and Adaptation for victims of violence, as well as the prevention of suicides in territorial divisions of the Women's Committee of Uzbekistan.
- Public "hot line" on number "1146", for provision of emergency psychological, psycho-therapeutic and legal support and information about organizations that may provide additional assistance.

Other relevant legislation

The list of laws and decrees with broad provisions for the protection of public health, safety and security, and other human rights in the context of public wellbeing, includes:

- Decree No. 964 of 5 December 2017 on measures for improvement of the activity of self-government bodies aimed at ensuring employment, firstly for the youth and women
- The National Human Rights Strategy was approved by Presidential Decree on 22 June 2020. No. PD-6012
- Law on guaranteeing equal rights and opportunities for women and men (2019)
- The Law on mediation (2018)
- Law on public control (2018)
- Law on administrative procedures (2018)

Human Rights

As a member of the United Nations, Uzbekistan supports and implements all the main international instruments of the United Nations relating to the protection of human rights and freedoms, including UN Universal Declaration of Human Rights, Human Rights Council Resolution No. 30/15 on human rights and preventing and countering violent extremism, Convention on the Elimination of all Forms of Discrimination against Women among others.

Uzbekistan's State Policy on human rights is aimed at preventing violations or any restriction on human rights and freedoms and at establishing the necessary organizational, legal, social, economic, spiritual and moral foundations for the protection of human rights.

Gender-based violence, harassment, and exploitation

Over the past decade, the Government of Uzbekistan has implemented a number of legal reforms and interventions geared towards the protection of women's rights and the elimination of GBV. An overview of the key executed initiatives to this end is provided in the table below.

Reforms and Initiatives for Protection of Women's Rights and Support for GBV Victims

intervention	objectives
Establishment of the Law on Protection of Women from Harassment and Abuse (2019)	The national law provides for the protection of women from all forms of harassment and abuse. While violence against women is recognized in the Criminal Code of Uzbekistan, provisions for the registration, investigation, and prosecution of GBV are not prescribed in the Code. In furtherance of the Code, the Act established specific procedures for the management of GBV cases for relevant law enforcement authorities and mandates the provision of medical, psychological, legal, economic, and humanitarian support to victims of GBV. In 2020, systems for the issuance of protection orders for victims of GBV were fully instituted across the country.
Establishment of the Resolution on Measures to Improve the System of Social Rehabilitation and Adaptation, and the Prevention of Domestic Violence (2018)	The Resolution No. PP-3827 of the Head of the State dated 07.02.2018 "On measures to improve the system of social rehabilitation and adaptation, as well as the prevention of domestic violence" identifies priority areas for improving the system of social rehabilitation and adaptation, prevention of family and domestic violence, and approved the program of practical measures to improve the system of social rehabilitation and adaptation, as well as the prevention of domestic violence. The Resolution provides for the following key measures: • Priority areas include improving the social system of rehabilitation, adaptation and preventative measures against domestic violence. • A program of practical measures to improve the system of social rehabilitation, adaptation and prevention of domestic violence. • A Centre for Rehabilitation and Adaptation for victims of violence, as well as the prevention of suicides in territorial divisions of the Women's Committee of Uzbekistan. • Public "hot line" on number "1146", for provision of emergency psychological, psycho-therapeutic and legal support and information about organizations that may provide additional assistance.

LENDERS REQUIREMENTS

ADB

Under ADB Safeguard Requirement 1: Environment, the assessment of community health and safety is required in ESIA.

Specifically, 'The borrower/client will identify and assess the risks to, and potential impacts on, the safety of affected communities during the design, construction, operation, and decommissioning of the project, and will establish preventive measures and plans to address them in a manner commensurate with the identified risks and impacts.'

This includes reasonably foreseeable incidents, accidents, and natural impacts (due to the Project) and requires affected communities to be informed. Appropriate provisions must be in place to plan for such events.

AIIB

ESS1 – Environmental and Social Assessment and Management: Point 8.1 outlines the need to consider community health and safety in the impact assessment, further stating "*this would include, as appropriate, risks related to pandemics and other forms of transmission of communicable diseases.*"

Section D 'Social Coverage' outlines the requirement for social assessment, including, but not limited to, vulnerable groups and discrimination, gender, gender-based violence, etc.

EPFIs

IFC Performance Standard 4 establishes requirements to safeguard local communities from potential risks associated with the Project including impacts associated with introduction of communicable disease, site access and operation, material use etc. The key objectives of PS4 are:

- To anticipate and avoid adverse impacts on the health and safety of the Affected Community during the project life from both routine and non-routine circumstances.
- To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities.

In regard to human rights:

- In line with EP IV requirements, the United Nations Human Rights Guiding Principles apply to the Project. HRGP II on "The corporate responsibility to respect human rights" recognises that it is the responsibility of businesses and corporations to respect human rights. It is a global standard of expected conduct for all business enterprises wherever they operate. It exists independently of a States' ability and/or willingness to fulfil their human rights obligations and does not diminish those obligations.

Human Rights, Labour & Working Conditions – Applicable Standards & Requirements

NATIONAL REGULATIONS

Constitution of the Republic of Uzbekistan (1992, as amended in 2023)

Key constitutional provisions in regard to labour rights include:

- Everyone shall have the right to decent work, to free choice of profession and occupation, favourable working conditions that meet the requirements of safety and hygiene, to fair remuneration for work without any discrimination and not

below the established minimum wage, as well as the right to unemployment protection in the manner prescribed by law.

- The minimum wage shall be determined considering the need to ensure a decent standard of living for a person.
- It shall be prohibited to refuse to hire women, dismiss them from work and reduce their wages on the basis of pregnancy or having a child.
- Any forced labour shall be prohibited, except as punishment under the court decision, or in some other Instances specified by law.
- Any form of child labour that poses a threat to the health, safety, morality, mental and physical development of the child, including those that prevent him or her from getting an education, shall be prohibited.
- The amount of pensions, allowances and other types of social welfare established by law, may not be set lower than the officially fixed minimum consumer expenditure.
- Trade unions express and protect the social and economic rights and interests of workers.
- Membership in trade unions is voluntary.

With regards to human rights, the constitution asserts that "democracy in the Republic of Uzbekistan shall be based upon common human principles, according to which the highest values shall be the human being, his life, freedom, honour, dignity and other inalienable rights."

Labour Code of the Republic of Uzbekistan (1995, amended in 2021)

The principal law on labour rights and welfare in Uzbekistan sets out the following requirements:

The main health and safety provisions in the labour law include H&S requirements, employees' obligation to comply with H&S standards, procedures and use of PPE, additional H&S measures for disabled employees, reporting and investigating accidents etc.

The labour code also specifies collective bargaining through collective contracts and agreements as a way of regulating labour relations and harmonising social and economic interests of both the employer and the employees.

Occupational Health and Safety (OHS) legislation

The legislation comprises the Labor Code, the Law on Occupational Health and Safety, the decrees of the President of the Republic of Uzbekistan, Occupational Health and Safety standards, decisions of executive government agencies taken within their competence in the form of decrees, executive orders, regulations, directives, rules, etc.

The Law on Occupational Safety in Hazardous Production Facilities (2006)

The Law stipulates the legal, economic and social terms of ensuring safe exploitation of hazardous production facilities, with the aim of building enterprise capacity and preventing accidents.

In addition to the main legislation, the Republic also has national normative documents addressing the issues of occupational health and safety. These include (i) Sanitary Rules and Norms (SanR&N), (ii) State Occupational Safety Standards (GOST, SSBT), (iii) Construction Norms and Rules (CR&N (SNiPs)), (iv) standards of the content of harmful substances (maximum allowable concentrations and levels), and (v) normative methodological documents on individual issues setting forth requirements for occupational safety in hazardous facilities, when manufacturing or applying various products. In addition to state normative documents, various sectors of industry enforce departmental and interdepartmental norms, requirements and rules of occupational safety and health.

The main state bodies responsible for the implementation of OHS policy are:

- Ministry of Employment and Labor Relations of the Republic of Uzbekistan, including the State Labor Inspection under the Ministry with territorial branches distributed throughout the Republic;
- State Committee for Industrial Safety of the Republic of Uzbekistan (Goskomprombez);
- Sanitary and Epidemiological Welfare and Public Health Committee of the Republic of Uzbekistan under the Ministry of Health of the Republic of Uzbekistan.

The Ministry of Employment and Poverty Reduction has an OHS directorate and the State Labor Inspection and its regional branches in the Republic of Karakalpakstan, viloyats (provinces), and the Tashkent city and district directorates and branches on labor, employment and social security. They constitute a single system of supervision and monitoring compliance with OHS requirements for ministries and agencies, institutions, organizations, and industrial and agricultural enterprises, with the exception of hazardous facilities that are under the jurisdiction of the State Inspection on Safety in Industry, Mining and the Housing and Utilities Sector.

OTHER PERTINENT LEGISLATION

The list of other laws and regulations providing for fair and safe working conditions and benefits include the following:

- Law "On the Employment of the Population" No. 642 of 20.10.2020
- Joint Decree of the Ministry of Labour and Social Protection of the Population (No. 7) and the Ministry of Healthcare (No. 13) "On approval of the list of jobs with unfavorable working conditions, where the employment of persons under 18 years is prohibited" registered by the Ministry of Justice of the Republic Uzbekistan, dated July 29 2009, No. 1990
- Decree of the Cabinet No. 133 of 11 March 1997 to approve normative acts necessary for the realization of the Labour Code of the Republic of Uzbekistan.

- Decree of the Cabinet of the Ministers No. 1011 of 22 December 2017 "On Perfection of the Methodology of Definition of Number of People in Need of Job Placement, including the Methodology for Observing Households with Regard to Employment Issues, also for the Development of Balance of Labour Resources, Employment and Job Placement of Population".
- Decree of the Cabinet of the Ministers No. 965 of 5 December 2017 "On the Measures for Further Perfection of the Procedure of Establishment and Reservation of Minimum Number of Job Places for the Job Placement of Persons who are in need of Social Protection and Face Difficulties in Searching Employment and Incapable of Competing in Labour Market with Equal Conditions".
- Decree No. 964 of 5 December 2017 "On the measures for Improvement of the Activity of Self-Government Bodies Aimed at Ensuring Employment, firstly for the Youth and Women".
- The Protection of Women Against Harassment and Violence Act (2019).
- The National Human Rights Strategy was approved by Presidential Decree on 22 June 2020. No. PD-6012.
- Law on guaranteeing equal rights and opportunities for women and men (2019).
- The Law on Mediation (2018).
- Law on Public Control (2018).
- Law on Administrative Procedures (2018).

HUMAN RIGHTS

As a member of the United Nations, Uzbekistan supports and implements all the main international instruments of the United Nations relating to the protection of human rights and freedoms, including UN Universal Declaration of Human Rights, Human Rights Council Resolution No. 30/15 on human rights and preventing and countering violent extremism, Convention on the Elimination of all Forms of Discrimination against Women among others.

Uzbekistan's State Policy on human rights is aimed at preventing violations or any restriction on human rights and freedoms and at establishing the necessary organizational, legal, social, economic, spiritual and moral foundations for the protection of human rights.

In 1995-1996, two independent and effective institutions for the protection of human rights were established in Uzbekistan: The Human Rights Commissioner (Ombudsman) of the Oliy Majlis of the Republic of Uzbekistan and the National Centre for Human Rights. In subsequent years, special structures for the protection of human rights were established in various ministries and departments of the Republic of Uzbekistan.

THE PROTECTION OF WOMEN AGAINST HARASSMENT AND VIOLENCE ACT (2019)

The Act defines the various forms of violence - sexual, physical, economic, psychological against women. Protection from harassment and violence is defined as a system of urgent measures of economic, social, legal, organizational, psychological and other nature in order

to eliminate the danger to women's life and health, to ensure their safety and to prevent repeated illegal actions against them.

Other relevant legislations include:

- The National Human Rights Strategy was approved by Presidential Decree on 22 June 2020. No. PD-6012;
- Law on guaranteeing equal rights and opportunities for women and men (2019);
- The Law on Mediation (2018);
- Law on Public Control (2018); and
- Law on Administrative Procedures (2018)

LENDERS REQUIREMENTS

ADB

The Environmental Safeguard requirements necessitate the Borrower/client to, '*provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.*'

The ADB Social Protection Strategy requires client to promote efficient labour markets, diminish people's exposure to risks and comply with core labour standards which includes: (a) freedom of association and the effective recognition of the right to collective bargaining, (b) the abolition of all forms of forced or compulsory labour, (c) the elimination of discrimination in respect of employment and occupation and (d) the elimination of child labour.

AIIB

ESS1 – Environmental and Social Assessment and Management: Point 8.1 outlines the need to consider worker health and safety in the impact assessment. Section F covers Labour and Working Conditions, including labour management relationships, child and forced labour.

EPFIs

The following applicable IFC Performance Standards aim to identify and ensure that social and economic impacts of a project are addressed in the relevant areas, in particular:

- Performance Standard 2: Labour and Working Conditions;

- In accordance with IFC Performance Standard 2 (Labor and Working Conditions) there is a requirement to align with the following conventions:
- ILO Convention 29 on Forced Labor;
- ILO Convention 87 on Freedom of Association and Protection of the Right to Organize;
- ILO Convention 98 on the Right to Organize and Collective Bargaining;
- ILO Convention 100 on Equal Remuneration;
- ILO Convention 105 on the Abolition of Forced Labor;
- ILO Convention 138 on Minimum Age (of Employment);
- ILO Convention 182 on the Worst Forms of Child Labor;
- ILO Convention 111 on Discrimination (Employment and Occupation);
- UN Convention on the Rights of the Child, Article 32.1; and
- UN Convention on the Protection of the Rights of all Migrant Workers and Members of their Families.
- In addition, the Project will also be required to adhere to the United Nations Guiding Principles on Business and Human Rights to ensure that it complies with all applicable laws and to respect human rights.

In regard to human rights:

- In line with EP IV requirements, the United Nations Human Rights Guiding Principles (HRGP) apply to the Project. HRGP II on "The corporate responsibility to respect human rights" recognises that it is the responsibility of businesses and corporations to respect human rights. It is a global standard of expected conduct for all business enterprises wherever they operate. It exists independently of a States' ability and/or willingness to fulfil their human rights obligations and does not diminish those obligations.

IFC

Concerning dedicated accommodation, compliance is required with:

- IFC & EBRD Workers Accommodation: Processes and Standards (2009).

The IFC Guidance on GBVH in the Construction Sector is also relevant to Labour and Working Conditions.

<u>IFC Guidance on Gender Based Violence and Harassment (GBVH) in the Construction Sector</u>

The assessment, prevention, monitoring and response measures in regard to GBVH should be underpinned by the following principles:

- Survivor Centered: The rights of GBVH survivors need to be consistently prioritised and used as the starting point for all decisions on efforts to assess, prevent, monitor and respond to GBVH.

- Safe: Survivors, witnesses and those who report and seek to address GBVH can be at risk of retaliation, including threatening and violent behaviour, often from those who do not like their position of power being challenged. Companies should prioritise the safety of those who have experienced, witnessed and reported GBVH.
- Context specific: All measures need to be rooted in a thorough understanding of the local context. Investors and companies should understand the legal and social context and identify the support mechanisms that are in place.
- Collaborative: Companies should seek inputs from a range of internal and external stakeholders to increase the likelihood of broader buy-in and make GBVH prevention more effective.
- Inclusive: Companies should recognise the heightened risks of GBVH faced by certain groups who are subject to discrimination and marginalisation. High risk groups often include people with disabilities, single parents, migrants and ethnic minorities and sexual and gender minorities. The system should also account for illiterate or non-literate people who may not be able to access written information on GBVH reporting mechanisms.
- Integrated: Processes, efforts to assess, prevent, monitor and respond to GBVH needs to be integrated as much as possible into existing processes and management systems, such as occupational health safety, security management systems, environmental and social management systems (ESMS) and human resources (HR) policies and procedures.
- Non-discriminatory: All survivors need to be listened to and treated equally and promote diversity in the workplace.
- Well-informed: Companies should draw on relevant expertise when developing prevention and response measures. The grievances mechanism and investigation procedures should be set up to ensure they are appropriate, relevant and safe in the local context.