KAZAKHSTAN - MIRNY 1GW WIND POWER PLANT

Environmental and Social Commitments Register
(Construction phase)

Sumitted to: Aktas Energy LLP
Submitted by: WSP ITALIA S.r.l.
Submission date: 05/02/2026

Unique ID	Component	Impact Factor	Mitigation hierarchy	Mitigation Measures	Project Phase				Project Location				Responsible Party				Performance Monitoring	Env Management Plans (MP)							Social Management Plans (MP)												Biodiversity MP	Decommissioning Management Plan
					Design	Construction	Operation	Decommissioning	WPP	OHTL	Sub-station	Access roads	PROJECT PROPONENT	BoP	Turbine Suppliers	BESS	Y / N	Air Emission, Noise and Vibration MP	Resource Efficiency MP	Soil MP	Water MP	Waste and Hazardous Material MP	Blasting MP	EPRP	SEP	Grievance Mechanism	Livelihood Restoration Plan	Traffic MP	Supply Chain MP	Influx MP	Labour MP	Accomodation MP	Community Health and Safety MP	Occupational Health, Safety and Security MP	Cultural Heritage MP	Biodiversity MP	Decommissioning Management Plan
PHY-01	Soil	Removal/degradation of soil and vegetation	Avoidance	The Contractor will plan in advance the soil and topsoil removal activities, and the site will be prepared prior to construction to clearly identify the areas to be protected (i.e., erosion-prone areas, areas with nests/burrows or of biodiversity value), haul roads, topsoil stripping areas, and soil/topsoil storage areas.		X			X	X	X	X		X			X			X																			
PHY-02	Soil	Removal/degradation of soil and vegetation	Avoidance	Only the strictly necessary topsoil and subsoil portions will be removed or affected and – consequently – only the strictly necessary buildings and facilities will be built, as per the design. The Contractor will forbid unnecessary soil excavations and vegetation clearance which can lead to a soil weakening and an excess of waste generation.		X			X	X	X	X		x			X			X																			
PHY-03	Soil	Removal/degradation of soil and vegetation	Avoidance	The Contractor will develop and implement appropriate method statements for soil stripping, storage, and placing.		X			X	X	X	X		x			X			X																	
PHY-04	Soil	Removal/degradation of soil and vegetation	Avoidance	All necessary local permits to dig and drill will be obtained from the competent public entity before construction works start.		X			X	X	X	X		X			X			X																	
PHY-05	Soil	Removal/degradation of soil and vegetation	Minimization	The Contractor will Implement soil erosion control measures, including temporary stabilization of disturbed areas, proper drainage, and progressive re-vegetation, with particular attention to WTG foundations, crane pads, and OHTL sections, especially during heavy rainfall events.		X			X	X	X	X		x			X			X																		
PHY-06	Soil	Removal/degradation of soil and vegetation	Minimization	Layers (e.g., geotextiles, tarpaulins) and barriers will be placed for protecting the excavation fronts and surfaces from weathering.		X			X	X	X	X		X			X			X																	
PHY-07	Soil	Removal/degradation of soil and vegetation	Minimization	Soil stripping, stockpiling or placing will be performed in the driest condition possible, with the use of tracked equipment where possible to reduce compaction.		X			X	X	X	X		X			X			X																	
PHY-08	Soil	Removal/degradation of soil and vegetation	Minimization	The movement of heavy vehicles and the storage of construction materials will be restricted to on-site service roads and laydown areas, to minimize the compaction of undisturbed soils.		X			X	X	X	X		X			X			X																	
PHY-09	Soil	Removal/degradation of soil and vegetation	Minimization	The excavated soil and topsoil will be properly stored and - when possible - used for backfilling or for landscaping at the end of construction.		X			X	X	X	X		X			X			X																	
PHY-10	Soil	Removal/degradation of soil and vegetation	Minimization	In case more material will be needed for backfilling, clean and certified material (commercial by-products will be used when natural materials are unavailable) will be purchased.		X			X	X	X	X		X			X			X																	
PHY-11	Soil	Removal/degradation of soil and vegetation	Minimization	Keep soil storage periods as short as possible. If soil needs to be stockpiled for more than 3 months prior to placement, the stockpiles will be temporary (preferably no longer than 6 months to avoid loss of quality), and will be covered with breathable material (geotextile fabric) to prevent soil loss and weeds infestation		X			X	X	X	X		X			X			X																		
PHY-12	Soil	Removal/degradation of soil and vegetation	Minimization	If soil quality requirements are met (i.e., if the soil is not polluted during excavation process or other activities), the soil will be re-used during construction activities whenever viable.		X			X	X	X	X		X			X			X																		
PHY-13	Soil	Removal/degradation of soil and vegetation	Minimization	The excavated soil waste not re-used will be properly managed, stored and then conferred to a licensed company for its disposal according to local and international standards.		X			X	X	X	X		X			X			X																		
PHY-14	Soil	Removal/degradation of soil and vegetation	Minimization	The mitigation measures identified in the Waste Management Plan to avoid or minimize soil pollution will be strictly followed.		X			X	X	X	X		X			X			X																		
PHY-15	Soil	Removal/degradation of soil and vegetation	Minimization	The over consolidation of soils and the vegetation disruption will be prevented - or at least limited - by keeping the moving vehicles (e.g., dumper trucks, concrete mixers, bulldozers) on predefined paths and roads to be well identified prior starting the construction activities.		X			X	X	X	X		X			X			X																		
PHY-16	Soil	Removal/degradation of soil and vegetation	Restoration	Site rehabilitation will be implemented following the completion of construction activities, with complete backfilling of on-site excavations, removal of remnant soil stockpiles and re-establishment of vegetative cover in residual areas within the Project sites.		X			X	X	X	X		X			X			X																		
PHY-17	Soil	Removal/degradation of soil and vegetation	Restoration	The excavation surfaces will be restored and re-vegetated as soon as possible. The revegetation will be carried out following the provisions of the Biodiversity Management Plan.		X			X	X	X	X		X			X			X																		
PHY-18	Soil	Existence of new buildings/infrastructures	Avoidance	Storage of chemical hazardous materials at the WPP site will be done exclusively in designated facilities with roofing, impervious flooring, temperature control, light protection, and fire detection and suppression. These facilities will be protected to prevent exposure of chemical/waste stock to direct sunlight, precipitation, wet outdoor conditions, and wind. These storage places will be well ventilated and locked up so that exclusively authorized and properly trained employees will be able to access. Sufficient and readily accessible spill kits will be provided for on-site hazardous material/ waste storage facilities.		X			X					X	X	X	X			X																			
PHY-19	Soil	Existence of new buildings/infrastructures	Avoidance	All chemical substances and products used at the WPP site (both hazardous and non-hazardous) will be registered in an Material Safety Data Sheet ("MSDS"), showing the productor name, the chemical formula/the components, the hazard pictograms, the warnings and the danger indications, the safety advice on the proper personal or collective protection equipment to be used for the handling, their types, quantity, supplier details, and transportation routes information. The inventory will be periodically updated as necessary and kept at the site office.		X			X					X	X	X	X			X																			
PHY-20	Soil	Existence of new buildings/infrastructures	Avoidance	All containers, bins or vessels used for temporary on-site storage of hazardous construction materials (both liquid or solid) will be appropriately labelled, with signs and descriptions in Kazakh, Russian, Chinese and English. In addition, safety and precautionary signs with multilingual descriptions will be included on labels and posters.		X			X	X	X	X		X	X	X	X			X																			
PHY-21	Soil	Existence of new buildings/infrastructures	Avoidance	Chemical substances will be handled by properly trained and qualified personnel, with the adequate use of proper PPE.		X			X	X	X	X		X	X	X	X			X																		
PHY-22	Soil	Existence of new buildings/infrastructures	Avoidance	Explosives and chemical substances that have potential to explode will be stored in adequate warehouses that adhere to the requirements for preventing fires and industrial safety, in accordance with Kazakh and international provisions.		X			X					X	X	X	X			X																		
PHY-23	Soil	Existence of new buildings/infrastructures	Avoidance	Specific areas must be allocated to provide for loading, unloading and transportation processes of hazardous substances (impermeable ground).		X			X					X	X	X	X			X																		
PHY-24	Soil	Existence of new buildings/infrastructures	Avoidance	Since different concrete batching plants will be installed on-site, the structures for containing water from washing the concrete will be designed with sufficient capacity for its operation, in addition to being located at a safe distance from the stormwater		X			X					X			X			X																		
PHY-25	Soil	Existence of new buildings/infrastructures	Avoidance	The aggregates for the batching plants at the WPP site will be stored on clean protected hard standing area, separated by granulometry.		X			X					X			X			X																		
PHY-26	Soil	Existence of new buildings/infrastructures	Avoidance	Any type of soil contamination caused by Project activities and/or originated within the construction site will be contained and then remedied to avoid further releases and associated adverse impacts. Contaminated soil will be handled as hazardous special waste.		X			X	X	X	X		X	X	X	X			X																		

PHY-27	Soil	Existence of new buildings/infrastructures	Avoidance	Any discharges of pollutants or potentially pollutants substances into soil will be forbidden.		X			X	X	X	X		X	X	X	X			X																				
PHY-28	Soil	Existence of new buildings/infrastructures	Avoidance	Periodical and adequate maintenance and control on equipment, machines and moving vehicles will be carried out for avoiding oil and fuel spills and leaks. Maintenance and repair will be performed within designated workshops, over floor having barriers against leakages. Tanks, pumps, pipes and other vehicle components must be fit for purpose, with no signs of leakage. Vehicles with any identified defects will be removed from service for immediate repairment.		X			X	X	X	X		X	X	X	X		X																						
PHY-29	Soil	Existence of new buildings/infrastructures	Avoidance	The equipment, the machines and the vehicles will be kept clean for avoiding runoffs of sludge and pollutants during rainy events.		X			X	X	X	X		X	X	X	X	X																						
PHY-30	Soil	Existence of new buildings/infrastructures	Avoidance	Both washing and refuelling of any equipment, machinery and vehicles will be exclusively carried out in designated areas, with impermeable surfaces and isolated drainage systems leading to dedicated reservoirs and treatment facilities, including for example oil/water separators and/or lined evaporation ponds.		X			X					X	X	X	X			X																				
PHY-31	Soil	Existence of new buildings/infrastructures	Avoidance	Avoid the over consolidation of soils generated by the moving vehicles.		X			X	X	X	X		X	X	X	X			X																				
PHY-32	Soil	Existence of new buildings/infrastructures	Avoidance	Integrity of tanks and containers will be ensured at the WPP site, and they will always be stored in areas with flood control.		X			X					X			X			X																				
PHY-33	Soil	Existence of new buildings/infrastructures	Minimization	In the event of any pollutant leaks, spills and/or contamination events on soil, groundwater and/or surface water, the procedures identified in the EPRP will be strictly followed. Remedial measures will primarily involve efforts to stop or minimize the spread of contamination, recover products accidentally released into the environment and apply specialized treatment and/or disposal.		X			X	X	X	X		X	X	X	X			X																					
PHY-34	Soil	Existence of new buildings/infrastructures	Minimization	Workers must be informed and trained about practices for soil contamination prevention and soil management and reinstatement.		X			X	X	X	X		X	X	X	X			X																				
PHY-35	Soil	Existence of new buildings/infrastructures	Minimization	A spill response plan must be communicated to concerned personnel and training to respond emergency must be conducted.		X			X	X	X	X		X	X	X	X			X																				
PHY-36	Soil	Existence of new buildings/infrastructures	Minimization	Concrete production will be kept under strict control.		X			X					X			X			X																				
PHY-37	Soil	Existence of new buildings/infrastructures	Minimization	Minimize the soil waterproofing by limiting the expansion of low permeable and impermeable areas.		X			X	X	X	X		X			X			X																				
PHY-38	Soil	Existence of new buildings/infrastructures	Minimization	Limit artificial lighting to essential night-time activities and for security purposes only, using shielded and directional fixtures to minimize spillover and disturbance to surrounding communities and wildlife		X			X	X	X	X		X	X	X	X			X																				
PHY-39	Soil	Existence of new buildings/infrastructures	Restoration	At the end of construction, as storage and temporary deposits areas will be restored, cleaned and destinated to other purposes or vegetated.		X			X	X	X	X		X			X			X																				
PHY-40	Soil	Demand for raw materials and goods/supply chain	Avoidance	All construction raw materials, products and equipment will be exclusively sourced from verified suppliers, which are compliant with minimum environmental standards. The Contractor will – throughout the whole construction phase – assess the existence, the adequacy and the effectiveness of the suppliers' environmental management systems and processes.		X			X	X	X	X		X	X	X	X			X																					
PHY-41	Soil	Demand for raw materials and goods/supply chain	Avoidance	The use of suppliers whose activities are associated to high environmental impacts will be avoided. Preference will be given to responsibly sourced raw materials.		X			X	X	X	X		X	X	X	X			X																				
PHY-42	Soil	Demand for raw materials and goods/supply chain	Avoidance	Soils and aggregates for on-site construction works will be supplied from quarries that are accredited and licensed to conduct their operations.		X			X	X	X	X		X			X			X																				
PHY-43	Geomorphology and topography	Change in the local morphology and topography	Avoidance	The Contractor will ensure that unnecessary levelling and excavations will be avoided. The excavation rates will follow the Project design specifications, which will be defined based on the site-specific characteristics and on the natural state of the landscape.		X			X	X	X	X		X			X						X																	
PHY-44	Geomorphology and topography	Change in the local morphology and topography	Avoidance	Since blasting will be required for breaking rock for excavation, the Contractor will develop and implement appropriate measures to be applied before, during and after blasting operations, including the selection of explosives and their safe transportation, blasting patterns, initiation systems to optimize blast efficiency and minimize dust, fumes, and noise, etc.		X			X					X			X						X																	
PHY-45	Geomorphology and topography	Change in the local morphology and topography	Avoidance	On-site personnel, local land users, and any other potential affected parties will be communicated of blasting activities by advance notice.		X			X					X			X						X																	
PHY-46	Geomorphology and topography	Change in the local morphology and topography	Avoidance	The blasting area will have access control and warning signs will be visibly placed in the vicinities.		X			X					X			X						X																	
PHY-47	Geomorphology and topography	Change in the local morphology and topography	Avoidance	Erosion-prone locations within all the Project sites (WPP, OHTL, BESS, accommodation camp, etc.) will be identified prior to commencement of land clearing and earthworks. Construction in these locations will be avoided to the extent possible. Where prevention is not feasible, erosion control methods will be undertaken.		X			X	X	X	X		X			X			X																					
PHY-48	Geomorphology and topography	Change in the local morphology and topography	Avoidance	Before conducting activities that affect the ground, the Contractor will map all the main elements that can affect drainage and plan accordingly for the occurrence of potential soil erosion events. The mapping will consider the natural morphology and topography of the site and the patterns of the water flow and the infiltration rates.		X			X	X	X	X		X			X			X																					
PHY-49	Geomorphology and topography	Change in the local morphology and topography	Minimization	The Contractor will ensure that no excessive changes of the local morphology and topography will be generated and that – where possible – the general slope of site will be preserved.		X			X	X	X	X		X			X			X																				
PHY-50	Geomorphology and topography	Change in the local morphology and topography	Minimization	Minimize the potential instability of permanent/temporary deposit areas by means of geotechnical design, stability assessment and stormwater drainage and management.	X				X					X			X			X																				
PHY-51	Geomorphology and topography	Change in the local morphology and topography	Minimization	In case heavy rains lead to the generation of pits and ponds in the construction site, they will be clean-up and backfilled to promote erosion control and a safe job site.		X			X					X			X			X																				
PHY-52	Geomorphology and topography	Change in the local morphology and topography	Minimization	The creation of unauthorized and/or uncontrolled piles and mounds of soil and rocks, debris or waste (even if temporary) will be forbidden.		X			X					X			X			X																				

PHY-53	Geomorphology and topography	Change in the local morphology and topography	Restoration	The Contractor will ensure that the excavated areas will be restored in a short time to prevent the generation of landslides, collapses and pits and ponds due to heavy rains and to mitigate the visual impacts of the construction site.		X			X	X	X	X		X			X			X																			
PHY-54	Geomorphology and topography	Change in the local morphology and topography	Restoration	The Contractor will ensure the restoration and rehabilitation of the blast sites and surrounding once blasting is over.		X			X					X			X						X															
PHY-55	Geomorphology and topography	Change in the local morphology and topography	Avoidance	All blasts shall be designed by a certified blasting engineer, taking into account rock type, slope stability, environmental constraints.		X			X					X			X						X															
PHY-56	Geomorphology and topography	Change in the local morphology and topography	Minimization	Blast parameters (charge, timing, spacing) must be documented and approved prior to execution.		X			X					X			X						X															
PHY-57	Geomorphology and topography	Change in the local morphology and topography	Minimization	Risk assessment for flyrock, vibration, noise, and dust shall be included in the blast plan.		X			X					X			X						X															
PHY-58	Geomorphology and topography	Change in the local morphology and topography	avoidance	Establish exclusion zones for each blast, clearly marked with signage and barriers.		X			X					X			X						X															
PHY-59	Geomorphology and topography	Change in the local morphology and topography	Minimization	Ensure all personnel are accounted for and outside exclusion zones prior to initiation of blasitng activities.		X			X					X			X						X															
PHY-60	Geomorphology and topography	Change in the local morphology and topography	Avoidance	Only authorised personnel with PPE may enter designated blasting areas.		X			X					X			X						X															
PHY-61	Geomorphology and topography	Change in the local morphology and topography	Minimization	Apply water sprays or other dust suppression measures during and after blasting.		X			X					X			X						X															
PHY-62	Geomorphology and topography	Change in the local morphology and topography	Minimization	Prevent contamination of soil and water with explosive residues.		X			X					X			X						X															
PHY-63	Geomorphology and topography	Change in the local morphology and topography	Minimization	Collect and dispose of leftover explosive packaging safely		X			X					X			X						X															
PHY-64	Geomorphology and topography	Change in the local morphology and topography	Minimization	Store explosives and detonators in approved magazines, secured and isolated from other materials.		X			X					X			X						X															
PHY-65	Geomorphology and topography	Change in the local morphology and topography	Minimization	For all explosives and detonators maintain strict inventory control, records of receipt, issue, and disposal.		X			X					X			X						X															
PHY-66	Geomorphology and topography	Change in the local morphology and topography	Minimization	Ensure magazines are inspected regularly for safety compliance.		X			X					X			X						X															
PHY-67	Geomorphology and topography	Change in the local morphology and topography	Minimization	Transport explosives in vehicles meeting regulatory requirements with appropriate signage.		X			X	X	X	X		X			X						X															
PHY-68	Geomorphology and topography	Change in the local morphology and topography	Minimization	Ensure drivers that transport explosive materials are trained and vehicles are escorted if required		X			X	X	X	X		X			X						X															
PHY-69	Geomorphology and topography	Change in the local morphology and topography	Minimization	Maintain transport records and incidents logs occurred when transporting explosive materials		X			X	X	X	X		X			X						X															
PHY-70	Geomorphology and topography	Change in the local morphology and topography	Minimization	Conduct pre-blast surveys to identify nearby wildlife, and nesting areas.		X			X					X			X						X															
PHY-71	Geomorphology and topography	Change in the local morphology and topography	Avoidance	Schedule blasts to avoid critical periods (e.g., breeding, nesting, or migration seasons) of local fauna.		X			X					X			X						X															
PHY-72	Geomorphology and topography	Change in the local morphology and topography	Minimization	Monitor for wildlife presence before, during, and after blasting; adjust blast schedules or methods if needed to minimize disturbance.		X			X					X			X						X															
PHY-73	Geomorphology and topography	Change in the local morphology and topography	Restoration	Restore any temporarily impacted areas post-blast to pre-construction conditions where feasible.		X			X					X			X						X															

PHY-74	Geomorphology and topography	Change in the local morphology and topography	Minimization	Notify affected communities, local authorities, and other stakeholders of planned blasting activities at least 48 hours in advance, specifying date, time, and safety precautions.		X			X					X			X						X																
PHY-75	Geomorphology and topography	Change in the local morphology and topography	Minimization	Communicate expected vibration and noise levels, potential temporary access restrictions, and safety boundaries.		X			X					X			X						X																
PHY-76	Geomorphology and topography	Change in the local morphology and topography	Minimization	Record and address any complaints or concerns related to blasting, with timely corrective actions.		X			X					X			X						X																
PHY-77	Geomorphology and topography	Change in the local morphology and topography	Minimization	Conduct stakeholder briefings for significant or high-risk blasting operations.		X			X					X			X						X																
PHY-78	Geomorphology and topography	Demand for raw materials and goods/supply chain	Avoidance	All construction raw materials, products and equipment will be exclusively sourced from verified suppliers, which are compliant with minimum environmental standards. The Contractor will – throughout the whole construction phase – assess the existence, the adequacy and the effectiveness of the suppliers' environmental management systems and processes.		X			X	X	X	X		X	X	X	X			X																			
PHY-79	Geomorphology and topography	Demand for raw materials and goods/supply chain	Avoidance	The use of suppliers whose activities are associated to high environmental impacts will be avoided. Preference will be given to responsibly sourced raw materials.		X			X	X	X	X		X	X	X	X			X																			
PHY-80	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	The Contractor will develop and implement a sizeable temporary stormwater diversion system to collect any stormwater (washouts) produced during the construction phase, considering all Project different infrastructure (camp site, WTGs, access roads, underground pipelines, OHTL, etc.) and the different terrain characteristics where these elements will be installed (drainage controls might differ depending on site characteristics, and an assessment on a site-by-site basis will be considered during the planning stage), so that waterlogging, soil erosion and flooding are avoided as much as possible during construction also taking into consideration downstream areas that could be affected.	X				X	X	X	X		X			X				X																			
PHY-81	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Weather/climate information will also be considered in the planning.	X				X	X	X	X		X			X				X																		
PHY-82	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	All drainage installed will be designed to ensure the natural hydrological features are maintained.	X				X	X	X	X		X			X				X																		
PHY-83	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	All building, infrastructure and work sites will observe strict drainage practices, and will plan to prevent run-off into the stormwater system.		X			X	X	X	X		X			X				X																		
PHY-84	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	All roads constructed for the Project will have suitable crossfalls to enable free drainage of the running surface. No ponding on the running surface would be accepted.	X							X		X			X				X																		
PHY-85	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Storm drain inlet protections and filters will be applied around storm drains as a last line of protection to separate sediment before it is discharged into the environment.	X				X	X	X	X		X			X				X																		
PHY-86	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Any contaminants will be prevented of entering the stormwater network.		X			X	X	X	X		X	X	X	X				X																		
PHY-87	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Uncontaminated stormwater will be diverted away from the work areas and into the stormwater system using flow diversion strategies and devices.	X				X	X	X	X		X	X	X	X				X																		
PHY-88	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Any direct contact between vehicles/equipment and surface water bodies will be avoided.		X			X	X	X	X		X	X	X	X				X																		
PHY-89	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Excavation and stockpiling will be sited as far as possible from any unprotected drainage channels, natural streams and rivers. In case this cannot be avoided, silt traps fences or curtains will be installed to prevent runoffs to reach the water streams.		X			X	X	X	X		X			X				X																			
PHY-90	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	In the case of bodies of water that need to be crossed by Project vehicles, this will only be performed through a proper crossing facility (e.g., bridge or passing place), which will be properly planned and dimensioned.	X				X	X	X	X		X	X	X	X				X																			
PHY-91	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	The Contractor will ensure that the intentional dumping/discharge of any type of materials (liquid, semi-solid or muddy), substances, objects and waste into water bodies and streams will be strictly forbidden.		X			X	X	X	X		X	X	X	X				X																			
PHY-92	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Activities that promote any changes in the land cover which may alter natural hydrologic processes will be avoided.		X			X	X	X	X		X	X	X	X				X																			
PHY-93	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Pollutant leaks and spills potentially generated during transportation by road will be avoided.		X			X	X	X	X		X	X	X	X				X																			
PHY-94	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	Avoid the use of pesticides or herbicides in any season and anywhere near watercourses.		X			X	X	X	X		X			X				X																			
PHY-95	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	The construction of the OHTL will not interfere in any way with the Lake Balkash waters.		X				X				X			X				X																			
PHY-96	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Avoidance	The location of OHTL transmission towers will be defined in such a way as to avoid any interference with aquatic habitats.	X					X				X			X				X																			
PHY-97	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Minimization	The Contractor will provide the adequate drainage underneath Project structures, roads and surfaces to avoid excessive ponding and allow access for surface water flow.	X				X	X	X	X		X			X				X																			
PHY-98	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Minimization	All work area surfaces will be maintained and well-cleaned to prevent access of pollutants, dust and particulate in the runoff waters during the rainy periods.		X			X	X	X	X		X	X	X	X				X																			
PHY-99	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Minimization	Ensure building materials are stored away from drainage paths and up-slope of sediment barriers.		X			X	X	X	X		X			X				X																			
PHY-100	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Restoration	In the case interventions were performed in local minor or major waterbodies/courses due to construction activities (e.g. they were channeled or modified on their natural paths), their original/natural courses and surroundings will be adequately restored.		X				X		X		X			X				X																			
PHY-101	Hydrology and Surface Water	Change in the local hydrology and surface water quality	Restoration	All work areas will be stabilized after construction has ceased.		X			X	X	X	X		X			X				X																			
PHY-102	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Storage of chemical hazardous materials at the WPP site will be done exclusively in designated facilities with roofing, impervious flooring, temperature control, light protection, and fire detection and suppression. These facilities will be protected to prevent exposure of chemical/waste stock to direct sunlight, precipitation, wet outdoor conditions, and wind. These storage places will be well ventilated and locked up so that exclusively authorized and properly trained employees will be able to access. Sufficient and readily accessible spill kits will be provided for on-site hazardous material/ waste storage facilities.		X			X					X	X	X	X					X																			
PHY-103	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Storage of chemical hazardous materials at the WPP site will be located as far as possible from main work areas, water sources, storm water drainage systems and ignition sources. A protective buffer of at least 100 meters will be maintained.		X			X					X	X	X	X					X																		
PHY-104	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	In case any liquid hazardous materials will be used at the WPP site, these will be exclusively stored in impermeable and chemically resistant structures with secondary containment, able to contain the substances in the event of a leak or spill. The capacity of secondary containment structures will be 110% of the contents of the largest primary containment structure.		X			X					X	X	X	X					X																		
PHY-105	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	All chemical substances and products used at the WPP site (both hazardous and non-hazardous) will be registered in an Material Safety Data Sheet ("MSDS"), showing the productor name, the chemical formula/the components, the hazard pictograms, the warnings and the danger indications, the safety advice on the proper personal or collective protection equipment to be used for the handling, their types, quantity, supplier details, and transportation routes information. The inventory will be periodically updated as necessary and kept at the site office.		X			X					X	X	X	X					X																			
PHY-106	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	All containers, bins or vessels used for temporary on-site storage of hazardous construction materials (both liquid or solid) will be appropriately labelled, with signs and descriptions in Kazakh, Russian, Chinese and English. In addition, safety and precautionary signs with multilingual descriptions will be included on labels and posters.		X			X	X	X	X		X	X	X	X					X																			

PHY-107	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Chemical substances will be handled by properly trained and qualified personnel, with the adequate use of proper PPE.		X			X	X	X	X		X	X	X	X					X																	
PHY-108	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Explosives and chemical substances that have potential to explode will be stored in adequate warehouses that adhere to the requirements for preventing fires and industrial safety, in accordance with Kazakh and international provisions.		X			X	X	X	X		X	X	X	X					X																	
PHY-109	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Specific areas must be allocated to provide for loading, unloading and transportation processes of hazardous substances (impermeable ground).		X			X	X	X	X		X	X	X	X					X																	
PHY-110	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Since different concrete batching plants will be installed on-site, the structures for containing water from washing the concrete will be designed with sufficient capacity for its operation, in addition to being located at a safe distance from the stormwater drainage systems.		X			X	X	X	X		X			X				X																			
PHY-111	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Periodical and adequate maintenance and control on equipment, machines and moving vehicles will be carried out for avoiding oil and fuel spills and leaks. Maintenance and repair will be performed within designated workshops, over floor having barriers against leakages. Tanks, pumps, pipes and other vehicle components must be fit for purpose, with no signs of leakage. Vehicles with any identified defects will be removed from service for immediate repairment.		X			X	X	X	X		X	X	X	X		X																					
PHY-112	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	The equipment, the machines and the vehicles will be kept clean for avoiding runoffs of sludge and pollutants during rainy events.		X			X	X	X	X		X	X	X	X		X																				
PHY-113	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Both washing and refuelling of any equipment, machinery and vehicles will be exclusively carried out in designated areas, with impermeable surfaces and isolated drainage systems leading to dedicated reservoirs and treatment facilities, including for example oil/water separators and/or lined evaporation ponds.		X			X	X	X	X		X	X	X	X				X																			
PHY-114	Hydrology and Surface Water	Existence of new buildings/infrastructures	Avoidance	Integrity of tanks and containers will be ensured at the WPP site, and they will always be stored in areas with flood control.		X			X					X		X	X				X																			
PHY-115	Hydrology and Surface Water	Existence of new buildings/infrastructures	Minimization	In the event of any pollutant leaks, spills and/or contamination events on soil, groundwater and/or surface water, the procedures identified in the EPRP will be strictly followed. Remedial measures will primarily involve efforts to stop or minimize the spread of contamination, recover products accidentally released into the environment and apply specialized treatment and/or disposal.		X			X	X	X	X		X	X	X	X				X																			
PHY-116	Hydrology and Surface Water	Existence of new buildings/infrastructures	Minimization	A spill response plan must be communicated to concerned personnel and training to respond emergency must be conducted.		X			X	X	X	X		X	X	X	X				X																			
PHY-117	Hydrogeology and Groundwater	Change in the local hydrogeology	Avoidance	Avoid the creation of fast paths for pollutants in the deepest soil layers.		X			X	X	X	X		X	X	X	X				X																			
PHY-118	Hydrogeology and Groundwater	Change in the local hydrogeology	Avoidance	The water boreholes drilling in the WPP AoI will strictly follow pre-defined drilling good practices, which will take into consideration the aquifer characteristics, to avoid any environmental degradation. Any usage of dirty drill corers will be avoided.		X			X	X	X	X		X			X				X																			
PHY-119	Hydrogeology and Groundwater	Change in the local hydrogeology	Avoidance	Groundwater sampling and testing in the WPP AoI will be completed when reaching the aquifer, and also periodically during the well life-cycle, in order to check if water quality is in accordance to the national legislation.		X			X	X	X	X		X			X				X																			
PHY-120	Hydrogeology and Groundwater	Change in the local hydrogeology	Avoidance	After sampling, if a contamination of groundwater is suspected or confirmed in the WPP AoI, the cause will be investigated, and the pollution will be adequately managed. Local authorities will also be informed and consulted for identifying responsible parties and the measures to be adopted (e.g., remediation) according to Project standards and the Kazakh/local provisions.		X			X	X	X	X		X			X				X																			
PHY-121	Hydrogeology and Groundwater	Change in the local hydrogeology	Avoidance	The groundwater levels in the WPP AoI will be monitored before and during the construction activities.		X			X	X	X	X		X			X				X																			
PHY-122	Hydrogeology and Groundwater	Change in the local hydrogeology	Avoidance	Groundwater is not planned to be used for drinking purposes. In case this assumption changes in the future, its quality will be assessed through proper sampling with pre-defined and compliant methodology.		X			X	X	X	X		X			X				X																			
PHY-123	Hydrogeology and Groundwater	Change in the local hydrogeology	Avoidance	Even if the 4 geotechnical boreholes did not reach the water table, the design stage will still consider that groundwater could accumulate in the pit in case excavation reach the water table levels. The Contractor will have in place a plan on how this groundwater will be treated and disposed (e.g., dewatering system), which will also consider the potential need of authorizations for the discharge of this water into the environment. No water from foundation dewatering operations will be discharged directly into a watercourse.	X				X	X	X	X		X			X				X																			
PHY-124	Hydrogeology and Groundwater	Change in the local hydrogeology	Minimization	Explosive products suitable for local conditions (which are water resistant) will be selected to minimize the potential for hazardous effects of the product on groundwater.		X			X	X	X	X		X			X				X																			
PHY-125	Hydrogeology and Groundwater	Change in the local hydrogeology	Restoration	Backfill the unbuilt areas with soil or materials having the same permeability characteristics of the previous soils for allowing the aquifers recharge.		X			X	X	X	X		X			X				X																			
PHY-126	Hydrogeology and Groundwater	Change in the local hydrogeology	Restoration	The soils around the water wells will be graded and properly restored for preventing water pooling and water runoff in its vicinity.		X			X	X	X	X		X			X				X																			
PHY-127	Hydrogeology and Groundwater	Water Demand	Minimization	The Water Management Plan (WMP) will be disseminated to all staff responsible for managing the construction site and to all sub-contractors working on the Project.		X			X	X	X	X	X	X	X	X	X				X																			
PHY-128	Hydrogeology and Groundwater	Employees' awareness and training	Minimization	All personnel will be trained in proper water management, taking into consideration their level of responsibility and duties;		X			X	X	X	X	X	X	X	X	X				X																			
PHY-129	Hydrogeology and Groundwater	Employees' awareness and training	Minimization	Workers will be trained on practices for surface water contamination prevention and conscious water use.		X			X	X	X	X		X	X	X	X				X																			
PHY-130	Hydrogeology and Groundwater	Potential pollution of water	Minimization	The sourced water from the municipality and the water intake from the wells will be analyzed and, where necessary, will be treated directly onsite;		X			X	X	X	X		X			X				X																			
PHY-131	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	The circulation of trucks showing oils and fuel losses/dripping or clear signs of engines breakages will be prohibited;		X			X	X	X	X		X	X	X	X				X																			
PHY-132	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	Pollutant leaks and spills potentially generated during transportation will be avoided;		X			X	X	X	X		X	X	X	X				X																			
PHY-133	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	Offsite paths and roads to be followed by the moving vehicles will be pre-defined;		X			X	X	X	X		X	X	X	X				X																			
PHY-134	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	Any intentional discharge of liquid, semi-solid or muddy materials into surface waters will be prohibited;		X			X	X	X	X		X	X	X	X				X																			
PHY-135	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	The materials' quantities will be supervised and the transportation will follow pre-defined paths to reach the selected destinations;		X			X	X	X	X		X	X	X	X				X																			
PHY-136	Hydrogeology and Groundwater	Potential pollution of water	Minimization	The crossing of rivers/surface water bodies will be avoided during the transportation of goods, materials and equipment;		X			X	X	X	X		X	X	X	X				X																			
PHY-137	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	Dirty or damaged vehicles leaving/accessing the construction site will be avoided;		X			X	X	X	X		X	X	X	X				X																			
PHY-138	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	The goods and materials will be properly secured for avoiding tripping, flipping and overflows;		X			X	X	X	X		X	X	X	X				X																			
PHY-139	Hydrogeology and Groundwater	Potential pollution of water	Minimization	The perfect tightness of the moving vehicles transporting sludge, semi-solid and liquids will be ensured;		X			X	X	X	X		X			X				X																			
PHY-140	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	Any moving vehicle will be equipped with spills prevention kits;		X			X	X	X	X		X	X	X	X				X																			
PHY-141	Hydrogeology and Groundwater	Potential pollution of water	Minimization	Drivers will be properly authorized and trained for adequately behaving in case of accidental spills and leaks;		X			X	X	X	X		X	X	X	X				X																			

PHY-142	Hydrogeology and Groundwater	Potential pollution of water	Avoidance	Any broken, old and inefficient equipment will be replaced with higher-efficiency models.		X			X	X	X	X		X	X	X	X				X																	
PHY-143	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	The wastewater collection, treatment and discharging systems will not allow any uncontrolled discharge into the environment;		X			X	X	X	X		X			X				X																	
PHY-144	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	Civil/domestic wastewater, process water and stormwater deriving from the construction site will be collected and discharged as per Project specifications;		X			X	X	X	X		X			X				X																	
PHY-145	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	Potential spills and leaks of dangerous products (i.e., fuels, oils and lubricants) from the operating equipment and machinery while drilling the water well will be avoided;		X			X	X	X	X		X	X	X	X				X																	
PHY-146	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	In case water is needed for facilitating the water well drilling in depth, the use of polluted water will be avoided;		X			X	X	X	X		X			X				X																	
PHY-147	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	The well will be installed strictly following the Project specification for avoiding the potential generation of preferential paths for pollutants;		X			X	X	X	X		X			X				X																	
PHY-148	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	Any drilling throughout non permeable surfaces like clay lens or any usage of dirty drill corers will be avoided;		X			X	X	X	X		X			X				X																	
PHY-149	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	Leaks and spills of oils, fuels, liquid wastes and other hazardous materials will be avoided;		X			X	X	X	X		X	X	X	X				X																	
PHY-150	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	Storage will be properly carried out in dedicated locations - equipped with spills prevention kits and emergency eyes washing stations - oils, fuels, liquid waste and other hazardous liquid or semi-solid materials;		X			X	X	X	X		X	X	X	X				X																	
PHY-151	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	All dangerous materials will be labelled and stored into containment systems or waterproofing sheaths and – where necessary - under roofed areas (i.e., protection from washout and weathering, soil, etc.);		X			X	X	X	X		X	X	X	X				X																	
PHY-152	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	The absence of connections between the storage areas and the permeable surfaces, the green areas and the rainwater drainage channels will be ensured;		X			X	X	X	X		X			X				X																	
PHY-153	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	An inventory of all potentially polluting materials, products and chemicals at the construction site office will be kept on-site;		X			X	X	X	X		X			X				X																	
PHY-154	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	The proper handling and storage of potentially pollutive chemicals and hazardous materials will reflect the indications on the corresponding Material Safety Data Sheets (MSDSs);		X			X	X	X	X		X			X				X																	
PHY-155	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	The work areas and the equipment, machinery and moving vehicles will be periodically washed, cleaned and maintained;		X			X	X	X	X		X			X				X																	
PHY-156	Hydrogeology and Groundwater	Potential pollution of groundwater	Avoidance	The soil around the water wells will be restored and graded for preventing water pooling and water runoff in its vicinity.		X			X	X	X	X		X			X				X																	
PHY-157	Hydrogeology and Groundwater	Water well deterioration and disruption	Minimization	Before installing the water wells, all the necessary factors such as water well location, type, trajectory, depth and diameter, the local water flow direction and speed and the aquifer recharge rates according to the local geology, hydrology and hydrogeology will be considered in the design;		X			X	X	X	X		X			X				X																	
PHY-158	Hydrogeology and Groundwater	Water well deterioration and disruption	Minimization	The water wells will be provided with proper filtration systems and with a secure covers resistant to the weather, contaminants, insects and the infiltration of water and sand for avoiding its clogging or damage;		X			X	X	X	X		X			X				X																	
PHY-159	Hydrogeology and Groundwater	Water well deterioration and disruption	Minimization	The water wells tops (i.e., casing/secure covers/protectors) will rise at least 30 cm above the ground level and will be always well-visible for avoiding potential disruption during the construction activities (e.g., demolition while excavating the soil or burial);		X			X	X	X	X		X			X				X																	
PHY-160	Hydrogeology and Groundwater	Water well deterioration and disruption	Minimization	Groundwater sampling and testing will be completed before the water wells drilling and immediately after its completion and before its disruption and decommissioning.		X			X	X	X	X		X			X				X																	
PHY-161	Hydrogeology and Groundwater	Water demand	Avoidance	The overexploitation of groundwater resources will be strictly avoided in the WPP AoI. The design of the Project water supply scheme is such as to minimize and avoid abstraction rates beyond the safe production volume and subsequent impacts on sensitive social and biological receptors. The Project will ensure that sensitive receptors will not be negatively impacted due to		X			X	X	X	X		X			X				X																	
PHY-162	Hydrogeology and Groundwater	Water demand	Avoidance	Before groundwater is selected as a water source for construction activities at the WPP site, a comprehensive assessment of the availability and vulnerability of groundwater in and around the Project site(s) must be conducted.		X			X					X			X				X																	
PHY-163	Hydrogeology and Groundwater	Water demand	Avoidance	The operation and management of groundwater intake at the WPP site will be carried out in a manner where the abstraction rate is monitored in relation to safe yield abstraction rates to be determined on the basis of the study mentioned under the previous point.		X			X					X			X				X																	
PHY-164	Hydrogeology and Groundwater	Water demand	Avoidance	All local authorizations and permits needed for water resources' exploitation and use will be in place before construction starts.		X			X	X	X	X		X			X				X																	
PHY-165	Hydrogeology and Groundwater	Water demand	Avoidance	Ensure that pipes and taps supplying the water at the WPP site are maintained on a regular basis to avoid water being lost through leakages.		X			X					X			X				X																	
PHY-166	Hydrogeology and Groundwater	Water demand	Avoidance	Periodical maintenance and sanitation of drinking water tanks at the WPP site will be carried out to ensure their adequacy for intended purposes. Routine inspections for early detection of potential leaks, contamination or structural compromise will be also carried out.		X			X					X			X				X																	
PHY-167	Hydrogeology and Groundwater	Water demand	Minimization	The Project activities with the highest water consumption rates will be identified and performance targets for water consumption will be defined prior their commencement. Targets will be periodically reviewed and compared to the Project effective water consumption; if needed, further actions for reducing the consumptions will be taken.		X			X	X	X	X		X			X				X																	
PHY-168	Hydrogeology and Groundwater	Water demand	Minimization	Strategies to reduce the water consumption will be identified in the design stage and effectively implemented during construction activities. Examples to be considered by the Contractor include: - Evaluate the possibility of eliminating the need for water in certain construction activities (for example, using a broom to clean paths and gutters rather than water; using compressed air as a substitute for cleaning equipment instead of water, etc.); - Identify alternative water sources (such as rainwater collection, the use of wastewater treated effluents, etc.); - Use water-saving technologies (such as sensor-controlled taps, low flush toilets, hoses with triggers, etc.).	X				X	X	X	X		X			X				X																			
PHY-169	Hydrogeology and Groundwater	Water demand	Minimization	Construction site workers will be trained on water saving actions.		X			X	X	X	X		X			X				X																	
PHY-170	Air Quality	MP dissemination	Minimization	The Air Emission Management Plan (AEMP) will be disseminated to all staff responsible for managing the construction site and to all sub-contractors working on the Project;		X											X																					
PHY-171	Air Quality	MP dissemination	Minimization	Personnel at an appropriate level of seniority will be nominated to be responsible for good site practices and arrangements regarding air quality management.		X			X	X	X	X		X			X	X																				
PHY-172	Air Quality	Employees' awareness and training	Minimization	All personnel will be trained in proper air quality management, taking into consideration their level of responsibility and duties;		X			X	X	X	X		X	X	X	X	X																				
PHY-173	Air Quality	Employees' awareness and training	Minimization	Workers (including vehicle drivers) will be adequately informed about the construction activities likely to generate air and dust emissions.		X			X	X	X	X		X	X	X	X	X																				

PHY-174	Air Quality	Reduction of greenhouse gases emissions	Minimization	The purchase of low GHGs emissions materials will be preferred;		X			X	X	X	X		X	X	X	X	X																					
PHY-175	Air Quality	Reduction of greenhouse gases emissions	Minimization	Policies and guidelines inclusive of best practices for avoiding wasting materials and resources will be drafted;		X			X	X	X	X		X	X	X	X	X																					
PHY-176	Air Quality	Reduction of greenhouse gases emissions	Minimization	Preferential roads (i.e., shorter paths) to be followed by the moving vehicles onsite and offsite will be defined;		X			X	X	X	X		X	X	X	X	X																					
PHY-177	Air Quality	Reduction of greenhouse gases emissions	Avoidance	Nearby suppliers of materials will be sourced and where possible, the transportation methods having minor impact on the environment will be preferred. High-impact transportation methods like airplanes will be avoided;		X			X	X	X	X		X	X	X	X	X																					
PHY-178	Air Quality	Reduction of greenhouse gases emissions	Minimization	Where possible, plants, machineries, vehicles, and equipment operating on carbon-neutral biofuels or renewable energies will be sourced;		X			X	X	X	X		X	X	X	X	X																					
PHY-179	Air Quality	Reduction of greenhouse gases emissions	Avoidance	Cooling systems containing refrigerant gases with low global warming potential (GWP) will be installed exclusively and the cooling system will be periodically inspected for detecting potential pollutive gas leakages;		X			X	X	X	X		X			X	X																					
PHY-180	Air Quality	Reduction of greenhouse gases emissions	Minimization	The use of eco-friendly building materials will be preferred;		X			X	X	X	X		X			X	X																					
PHY-181	Air Quality	Reduction of greenhouse gases emissions	Minimization	Low-carbon concrete over traditional materials (i.e., low embodied carbon construction materials) will be used where possible;		X			X	X	X	X		X			X	X																					
PHY-182	Air Quality	Reduction of greenhouse gases emissions	Minimization	A quantification of GHG emissions annually in accordance with internationally recognized methodologies and good practice will be conducted.		X			X	X	X	X		X	X	X	X	X																					
PHY-183	Air Quality	Dust emissions	Avoidance	Water will be sprayed to control dust emissions from stockpiles;		X			X	X	X	X		X			X	X																					
PHY-184	Air Quality	Dust emissions	Avoidance	The excavated materials, when too fine or in case of wind, will be placed inside stalls or in controlled and treated heaps protected with tarpaulins;		X			X	X	X	X		X			X	X																					
PHY-185	Air Quality	Dust emissions	Avoidance	Covered and uncovered warehouses for storing small/medium construction materials and equipment will be installed;		X			X	X	X	X		X			X	X																					
PHY-186	Air Quality	Dust emissions	Avoidance	The height of the mounds/piles of stock material will not exceed 2 m with slope below 30° to prevent sliding;		X			X	X	X	X		X			X	X																					
PHY-187	Air Quality	Dust emissions	Avoidance	Wind barriers (protective fences) will be installed when necessary;		X			X	X	X	X		X			X	X																					
PHY-188	Air Quality	Dust emissions	Avoidance	Long-term stockpiling of material will be avoided and caps will be used when longer stockpiling is necessary;		X			X	X	X	X		X			X	X																					
PHY-189	Air Quality	Dust emissions	Avoidance	The excavation surfaces will be covered up or re-vegetate as soon as possible;		X			X	X	X	X		X			X	X																					
PHY-190	Air Quality	Dust emissions	Avoidance	Abatement measures and control systems (e.g., welding tents and barriers or mobile aspirators equipped with filters) will be adopted when needed;		X			X	X	X	X		X			X	X																					
PHY-191	Air Quality	Dust emissions	Avoidance	Equipment and techniques compliant to the environmental and safety measures while welding, cutting, grinding and sandblasting will be adopted;		X			X	X	X	X		X			X	X																					
PHY-192	Air Quality	Dust emissions	Avoidance	Prefabricated materials to avoid processing will be used where possible;		X			X	X	X	X		X			X	X																					
PHY-193	Air Quality	Dust emissions	Avoidance	If needed, specific authorization for potential mobile plants for crushing, screening and grading the materials will be requested.		X			X	X	X	X		X			X	X																					
PHY-194	Air Quality	Dust emissions – roads and vehicles	Minimization	Roads will be sprayed down with water several times per day, more frequently between 7 am and 7 pm;		X			X	X	X	X		X			X	X																					
PHY-195	Air Quality	Dust emissions – roads and vehicles	Avoidance	Paths and routes to be followed by all moving vehicles will be defined;		X			X	X	X	X		X			X	X																					
PHY-196	Air Quality	Dust emissions – roads and vehicles	Avoidance	The speed limit for heavy vehicles within construction site will be restricted to 20 km/h;		X			X	X	X	X		X	X	X	X	X																					
PHY-197	Air Quality	Dust emissions – roads and vehicles	Minimization	Gravel will be disseminated on the Project roads/vehicular paths for increasing the surface strength and decreasing the particulate and dust emissions;		X			X	X	X	X		X			X	X																					
PHY-198	Air Quality	Dust emissions – roads and vehicles	Minimization	Trucks and other moving vehicles transporting loose materials will be covered;		X			X	X	X	X		X			X	X																					
PHY-199	Air Quality	Dust emissions – roads and vehicles	Minimization	Fenders will be applied to the vehicles' wheels;		X			X	X	X	X		X		X	X	X																					
PHY-200	Air Quality	Dust emissions – roads and vehicles	Minimization	Equipment and vehicles will be periodically washed and cleaned;		X			X	X	X	X		X	X	X	X	X																					
PHY-201	Air Quality	Dust emissions – roads and vehicles	Minimization	Trucks loading and unloading operations will be properly managed for limiting the amount of dust and particulate issued (e.g., spray down with water the materials over dump trucks before the unloading);		X			X	X	X	X		X	X	X	X	X																					
PHY-202	Air Quality	Dust emissions – roads and vehicles	Minimization	The weight of the truckload will be verified.		X			X	X	X	X		X	X	X	X	X																					
PHY-203	Air Quality	Dust emissions - unfavourable weather	Avoidance	Potential unfavorable weather conditions (dry season and high wind speed) will be monitored to reduce the potential for dust generation;		X			X	X	X	X		X			X	X																					
PHY-204	Air Quality	Dust emissions - unfavourable weather	Avoidance	Construction activities with the potential to generate dust will be modified or ceased during unfavorable weather conditions;		X			X	X	X	X		X		X	X	X																					
PHY-205	Air Quality	Dust emissions - unfavourable weather	Avoidance	Signs with good visibility indicating optimal speed values for driving during unfavorable weather conditions will be installed within the Project site;		X			X	X	X	X		X			X	X																					
PHY-206	Air Quality	Dust emissions - unfavourable weather	Avoidance	Earthworks will be suspended in the event of extreme weather conditions (e.g. strong wind).		X			X	X	X	X		X			X	X																					
PHY-207	Air Quality	Gaseous emissions	Avoidance	The usage of low Sulphur fuels will be preferred;		X			X	X	X	X		X		X	X	X																					
PHY-208	Air Quality	Gaseous emissions	Avoidance	Engines, vehicles, equipment and machinery will be turned off/shut down while not in use;		X			X	X	X	X		X		X	X	X																					

PHY-209	Air Quality	Gaseous emissions	Avoidance	Compliant chemicals will be exclusively sourced, purchased and used;		X			X	X	X	X		X		X	X	X																				
PHY-210	Air Quality	Gaseous emissions	Avoidance	Chemicals bins and trays will be properly labelled with labels showing the product name and the hazard pictograms (e.g., Hazardous to the environment or Acute toxicity symbols);		X			X	X	X	X		X	X	X	X	X																				
PHY-211	Air Quality	Gaseous emissions	Avoidance	Each product will be equipped with its updated MSDS showing the productor name, the chemical formula/the components, the hazard pictograms, the warnings and the danger indications and the safety advice on the proper personal or collective protection equipment to be used for the handling;		X			X	X	X	X		X	X	X	X	X																				
PHY-212	Air Quality	Gaseous emissions	Avoidance	Hazardous products and chemicals will be stored in well-ventilated and locked up locations;		X			X	X	X	X		X	X	X	X	X																				
PHY-213	Air Quality	Gaseous emissions	Avoidance	Bulks, cans, bins and trays of hazardous products and chemicals will be properly closed/sealed;		X			X	X	X	X		X	X	X	X	X																				
PHY-214	Air Quality	Gaseous emissions	Avoidance	Broken, old and inefficient equipment will be replaced with good quality and/or higher-efficiency models.		X			X	X	X	X		X	X	X	X	X																				
PHY-215	Air Quality	Gaseous emissions	Minimization	The Contractor will source, where practical and cost-effective, plants, machineries, vehicles, and equipment operating on carbon-neutral biofuels and/or renewable energies.		X			X	X	X	X		X	X	X	X	X																				
PHY-216	Air Quality	Gaseous emissions	Minimization	Materials and goods sourced from local suppliers will be preferred, as far as practical.		X			X	X	X	X		X	X	X	X	X																				
PHY-217	Air Quality	Gaseous emissions	Minimization	The Contractor will ensure that the cooling systems to be installed in the administration/offices area at the WPP site will contain exclusively refrigerant gases with low global warning potential (GWP), and that those will be periodically inspected for detecting potential pollutive gas leakages.		X			X					X			X	X																				
PHY-218	Air Quality	Gaseous emissions	Minimization	The use of eco-friendly/sustainable building materials will be preferred. In addition, considering that concrete is one of the most carbon-intensive construction materials, the Contractor will evaluate the opportunity of using low-carbon concrete solutions over traditional materials (i.e., low embodied carbon construction materials).		X			X	X	X	X		X			X	X																				
PHY-219	Air Quality	Gaseous emissions	Compensation	The Company will evaluate the possibility of compensating for its carbon emissions, e.g., with the creation and promotion of initiatives that use nature-based solutions (which does not necessarily need to be applied within the Project AoI, but also in local communities, regional/local degraded areas, etc.), such as ecosystem conservation and regeneration, reforestation, other sustainable practices.		X			X	X	X	X	X				X	X																				
PHY-220	Air Quality	Energy and fuel demand	Avoidance	Ensure that the primary source of electricity at the WPP site is the one identified in the design stage (transmission line from the Kiyakhty SS), and that other sources (such as diesel generators) will be used only for emergencies, if needed.	X				X					X			X	X																				
PHY-221	Air Quality	Energy and fuel demand	Avoidance	All local authorizations needed for setting up the power transformer station at the WPP site and for pulling energy from the Kiyakhty SS will be in place before construction starts.		X			X					X			X		X																				
PHY-222	Air Quality	Energy and fuel demand	Minimization	Arrangements for monitoring energy consumption will be implemented for the construction phase.		X			X	X	X	X		X			X		X																				
PHY-223	Air Quality	Energy and fuel demand	Minimization	The Project activities for which energy consumption is highest will be identified and performance targets defined prior their commencement. Targets will be periodically reviewed and compared to the Project effective energy consumption; if needed, further actions for reducing the consumptions will be taken.		X			X	X	X	X		X			X		X																				
PHY-224	Air Quality	Energy and fuel demand	Minimization	The use of machinery/equipment/plants that are powered by grid electricity will be preferred instead of diesel-fueled portable generators.		X			X	X	X	X		X			X		X																				
PHY-225	Air Quality	Energy and fuel demand	Minimization	Equipment and machinery will be kept in good running conditions and periodic maintenance will be carried out to avoid energy waste from malfunctioning.		X			X	X	X	X		X		X	X		X																				
PHY-226	Air Quality	Energy and fuel demand	Minimization	The use of energy efficient building-related equipment (such as lighting, electric motors, refrigerators, washing machines, cooling equipment, electronics, etc.) will be preferred. Examples include appliances that contain energy efficiency labelling, the use of LED light bulbs, and smart switches.		X			X	X	X	X		X			X		X																				
PHY-227	Air Quality	Energy and fuel demand	Minimization	Ensure that the construction activities will take advantage of natural light, where possible.		X			X	X	X	X		X		X	X		X																				
PHY-228	Air Quality	Energy and fuel demand	Minimization	Construction site workers will be trained on energy saving actions.		X			X	X	X	X		X			X		X																				
PHY-229	Air Quality	Energy and fuel demand	Minimization	Old and inefficient equipment will be replaced with higher efficiency models.		X			X	X	X	X		X			X		X																				
PHY-230	Air Quality	Demand for raw materials and goods/supply chain	Avoidance	All construction raw materials, products and equipment will be exclusively sourced from verified suppliers, which are compliant with minimum environmental standards. The Contractor will – throughout the whole construction phase – assess the existence, the adequacy and the effectiveness of the suppliers' environmental management systems and processes.		X			X	X	X	X		X	X	X	X	X																				
PHY-231	Air Quality	Demand for raw materials and goods/supply chain	Avoidance	The use of suppliers whose activities are associated to high environmental impacts will be avoided. Preference will be given to responsibly sourced raw materials.		X			X	X	X	X		X	X	X	X	X																				

PHY-232	Noise and Vibration	Emission of noise and vibrations	Avoidance	Hours of operation for specific pieces of equipment or operations will be limited in case sensitive receptors are located in close proximity.		X			X	X	X	X		X	X		X	X															X	X			
PHY-233	Noise and Vibration	Emission of noise and vibrations	Minimization	Project traffic will be reduced by routing it away from community areas, wherever possible.		X			X	X	X	X		X	X	X	X	X										X									
PHY-234	Noise and Vibration	Emission of noise and vibrations	Minimization	Grievance mechanism will be developed to record and respond to complaints regarding to noise and vibrations.		X			X	X	X	X		X	X	X	X	X								X											
PHY-235	Noise and Vibration	Emission of noise and vibrations	Minimization	In case of any noise and/or vibration related grievances, noise and/or vibration measurements will be carried out immediately at the area the grievance refers to. If monitoring results indicate that noise and/or vibration levels are above the defined limits, the Client will reduce/limit the amount of equipment at the construction site, until the construction noise and/or vibration levels are reduced below the limit values.		X			X	X	X	X		X	X	X	X	X								X											
PHY-236	Noise and Vibration	Emission of noise and vibrations	Minimization	Regular maintenance of the construction equipment will be carried out in order to minimize the possible high noise levels generated by the equipment.		X			X	X	X	X		X			X	X															X	X			
PHY-237	Noise and Vibration	Emission of noise and vibrations	Minimization	Equipment with lower sound power levels should be selected.		X			X	X	X	X		X			X	X																			
PHY-238	Noise and Vibration	Emission of noise and vibrations	Minimization	Silencers should be installed for fans.		X			X	X	X	X		X			X	X															X	X			
PHY-239	Noise and Vibration	Emission of noise and vibrations	Minimization	Suitable mufflers should be installed on engine exhausts and compressor components.		X			X	X	X	X		X			X	X															X	X			
PHY-240	Noise and Vibration	Emission of noise and vibrations	Minimization	Acoustic enclosures should be installed for equipment casing radiating noise.		X			X	X	X	X		X			X	X															X	X			
PHY-241	Noise and Vibration	Emission of noise and vibrations	Minimization	If applicable, noise sources will be re-located to less sensitive areas (such as further from worker accommodations and rest areas) to take advantage of distance and shielding.		X			X	X	X	X		X			X	X															X	X			
PHY-242	Noise and Vibration	Emission of noise and vibrations	Compensation	Appropriate PPE and materials such as ear protectors or ear plugs will be provided to protect workers from noise impacts.		X			X	X	X	X		X	X	X	X	X															X	X			
PHY-243	Waste and Hazardous Materials (WHM)	MP dissemination	Minimization	The WHMMP will be disseminated to all staff responsible for managing the construction site and to all Sub-Contractors working on the Project		X			X	X	X	X		X	X	X	X					X															
PHY-244	Waste and Hazardous Materials (WHM)	MP dissemination	Minimization	Personnel at an appropriate level of seniority will be nominated to be responsible for good site practices and arrangements regarding hazardous materials management		X			X	X	X	X		X	X	X	X					X															
PHY-245	Waste and Hazardous Materials (WHM)	Employees' awareness and training	Minimization	All personnel will be trained on proper waste (including wastewater and drainage water) and hazardous materials management, taking into consideration their level of responsibility and duties		X			X	X	X	X		X	X	X	X					X															
PHY-246	Waste and Hazardous Materials (WHM)	Employees' awareness and training	Minimization	The employees trainings on waste and hazardous materials management will be recorded and the records will be kept and available for review		X			X	X	X	X		X		X	X					X															
PHY-247	Waste and Hazardous Materials (WHM)	Employees' awareness and training	Minimization	All workers handling/managing waste and hazardous materials will be informed and trained on: -the WHMMP, the monitoring measures and the mitigation measures -the reading of the Materials Safety Data Sheets (MSDSs) for properly handling the hazardous materials -the use of Personal Protective Equipment (PPE) which should include (according to the specific job tasks) at least safety shoes, protective masks and respirators, protective clothing, goggles and gloves -the use of Collective Protective Equipment (CPE) such as emergency eye washing stations/devices and showers -the accidental spills and leaks prevention and response plans and measures		X			X	X	X	X		X	X	X	X					X																	
PHY-248	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The solid waste generated during the construction phase will be managed according to Kazakh laws and regulations and the international standards and best practices.		X			X	X	X	X		X		X	X					X															
PHY-249	Waste and Hazardous Materials (WHM)	Generation of waste	Minimization	Where waste generation cannot be avoided, waste reduction, recover, recycle and reuse will be preferred and completed in a healthy and safe manner for preventing any kind of potential impact on the human health and the environment;		X			X	X	X	X		X		X	X					X															
PHY-250	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	Non-hazardous waste which cannot be reused or recycled, will be disposed in the on-site ad-hoc built landfill;		X			X	X	X	X		X		X	X					X															
PHY-251	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	Any type of unnecessary waste generation will be avoided;		X			X	X	X	X		X	X	X	X					X															

PHY-252	Waste and Hazardous Materials (WHM)	Generation of waste	Minimization	Where possible, materials which are easier to recycle and reuse will be sourced and purchased (e.g., avoid using single use items);		X			X	X	X	X		X		X	X					X																
PHY-253	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The solid waste generated on site will be tracked and periodically registered on specific documents and logs to be kept onsite.		X			X	X	X	X		X		X	X					X																
PHY-254	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The domestic solid waste generated by the personnel will be collected inside dedicated bins/containers located at various locations of the construction site (e.g., rest areas, construction areas, accommodation camp)		X			X	X	X	X		X	X	X	X					X																
PHY-255	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	Proper temporary waste storage/accumulation areas will be provided. The accumulation areas will be roofed (protection from weathering), concrete-paved or waterproofed or equipped with containment trays to prevent spills and leakages and avoid the exposure to weathering (especially the special hazardous waste temporary storages/accumulation areas)		X			X	X	X	X		X			X					X																	
PHY-256	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The waste storage/ temporary accumulation areas will be equipped with dedicated drains for collecting the water runoffs and convey them into the wastewater treatment plant WWTP		X			X	X	X	X		X			X					X																
PHY-257	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The waste will be stored segregated per categories, and it will be labeled for its identification and classification		X			X	X	X	X		X		X	X					X																
PHY-258	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	Any kind of waste mixing will be forbidden		X			X	X	X	X		X		X	X					X																
PHY-259	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	No storing of waste on the bare ground or out of the Project area boundaries will be allowed		X			X	X	X	X		X	X	X	X					X																
PHY-260	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	No intentional or accidental waste burning will occur on site, immediate actions will be taken in case a waste arson will start		X			X	X	X	X		X	X	X	X					X																
PHY-261	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The construction waste generated from construction operations will be properly managed as special waste		X			X	X	X	X		X			X					X																
PHY-262	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The excavated soil will be properly managed as special waste and handled according to the Soil Management Plan		X			X	X	X	X		X			X					X																
PHY-263	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The waste deriving from the machinery and equipment maintenance (e.g., filters, oily rugs and metal parts containing hydrocarbons, oils and lubricants) will be properly managed as special waste. Such waste fuels, oils and lubricants will be collected in specific containers and no mixing will be allowed		X			X	X	X	X		X	X	X	X					X																
PHY-264	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The medical waste generated from the site infirmary will be properly managed as special waste, will be properly segregated and will not be mixed with other types of waste		X			X	X	X	X		X			X					X																
PHY-265	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The Iron and steel waste will be properly managed as special waste		X			X	X	X	X		X			X					X																
PHY-266	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	Hazardous waste such as residues of paints, cement additives and other hazardous materials will be properly managed as special hazardous waste (e.g., properly accumulated onsite and then shipped to the licensed facilities/landfills);		X			X	X	X	X		X	X	X	X					X																
PHY-267	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	The waste disposal in the onsite landfill will be properly conducted and supervised;		X			X	X	X	X		X		X	X					X																
PHY-268	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	Hazardous liquid and solid waste will be disposed of exclusively in off-site proper licensed facilities;		X			X	X	X	X		X		X	X					X																
PHY-269	Waste and Hazardous Materials (WHM)	Generation of waste	Avoidance	Exclusively nonhazardous solid waste will be disposed of in the onsite landfill;		X			X	X	X	X		X		X	X					X																
PHY-270	Waste and Hazardous Materials (WHM)	Waste management	Avoidance	Nonhazardous liquid waste will be treated in the onsite sewage treatment plant and then will be either reused onsite for dust control operations or discharged to the natural environment		X			X	X	X	X		X		X	X					X																
PHY-271	Waste and Hazardous Materials (WHM)	Waste compliant shipping and delivery	Avoidance	Exclusively eligible, qualified and licensed local/national waste management companies will be appointed for managing (i.e., transportation means and landfills) the waste that cannot be recycled/reused or disposed of onsite		X			X	X	X	X		X		X	X					X																
PHY-272	Waste and Hazardous Materials (WHM)	Waste compliant shipping and delivery	Avoidance	All waste managers will comply with relevant national and international laws and regulations		X			X	X	X	X		X		X	X					X																

PHY-273	Waste and Hazardous Materials (WHM)	Waste compliant shipping and delivery	Avoidance	The use of improper dumpsites (having serious management problems such as no planned deposition, no fencing, no paved areas and no lined cells or leachate control system) will be avoided. Only existing, operating dumpsites, approved by the local Environmental Protection Authority will be used;		X			X	X	X	X		X		X	X					X																	
PHY-274	Waste and Hazardous Materials (WHM)	Waste compliant shipping and delivery	Avoidance	The waste management operations (e.g., amount of waste generated, shipped and treated) will be tracked and registered on specific logs and forms to be kept onsite;		X			X	X	X	X		X			X					X																	
PHY-275	Waste and Hazardous Materials (WHM)	Waste compliant shipping and delivery	Avoidance	The waste will travel with proper transportation documents and forms indicating details such as the type, the amount and the hazardousness of the waste;		X			X	X	X	X		X			X					X																	
PHY-276	Waste and Hazardous Materials (WHM)	Waste compliant shipping and delivery	Avoidance	The hazardous waste disposal selected facilities/landfills will be periodically visited/audited to ensure that proper disposal practices are implemented and that they operate in compliance with the Project standards, the legal requirements, the international best practices and the local environmental standards and regulations.		X			X	X	X	X		X			X					X																	
PHY-277	Waste and Hazardous Materials (WHM)	Improper management of stormwater	Avoidance	The stormwater will be collected and captured through a functional surface temporary drainage system and discharged to ponds after applying a proper filtration or treatment (for reusing it onsite, where possible) and/or to seasonal natural water channels/streams;		X			X	X	X	X		X			X					X																	
PHY-278	Waste and Hazardous Materials (WHM)	Improper management of stormwater	Avoidance	Only non-contaminated, filtered or treated water (originating from stormwater or wastewater) will be discharged to natural water channels/streams;		X			X	X	X	X		X			X					X																	
PHY-279	Waste and Hazardous Materials (WHM)	Improper management of stormwater	Avoidance	Wastewater shall be stored in temporary waterproofed PVC tanks, prior of treatment or collection by a local licensed service provider;		X			X	X	X	X		X			X					X																	
PHY-280	Waste and Hazardous Materials (WHM)	Improper management of stormwater	Avoidance	Actions that can generate uncontrolled and unplanned pits and ponds, such as soil over consolidation and uncontrolled stormwater discharges will be prevented;		X			X	X	X	X		X			X					X																	
PHY-281	Waste and Hazardous Materials (WHM)	Improper management of stormwater	Avoidance	Proper runoffs and stream channeling will be provided;		X			X	X	X	X		X			X					X																	
PHY-282	Waste and Hazardous Materials (WHM)	Improper management of stormwater	Avoidance	In case heavy rains leads to the generation of pits and ponds, they will be removed by pumping the water by means of vacuum truck and disposing it of as per the Project specifications and requirements.		X			X	X	X	X		X			X					X																	
PHY-283	Waste and Hazardous Materials (WHM)	Exceeding the estimated generation of wastewater	Avoidance	The foreseen and planned maximum monthly generation of wastewater will not be exceeded;		X			X	X	X	X		X			X					X																	
PHY-284	Waste and Hazardous Materials (WHM)	Exceeding the estimated generation of wastewater	Avoidance	The discharges (i.e., wastewater/effluents amounts and flow rates) will be measured daily by installing proper equipment (e.g., hydrometer, flow meter, flow sensor).		X			X	X	X	X		X			X					X																	
PHY-285	Waste and Hazardous Materials (WHM)	Discharge of polluted wastewater	Avoidance	The WWTP will receive the civil/domestic sewage water from the accommodations, bathrooms, offices and canteen;		X			X	X	X	X		X			X					X																	
PHY-286	Waste and Hazardous Materials (WHM)	Discharge of polluted wastewater	Avoidance	The treated wastewater will be recycled and reused onsite, when possible;		X			X	X	X	X		X			X					X																	
PHY-287	Waste and Hazardous Materials (WHM)	Discharge of polluted wastewater	Avoidance	The treated effluents generated from the WWTP non-reusable onsite will be collected by local companies specialized and certified for the activity and then will be sent to licensed and properly equipped facilities exclusively after obtaining a specific authorization;		X			X	X	X	X		X			X					X																	
PHY-288	Waste and Hazardous Materials (WHM)	Discharge of polluted wastewater	Avoidance	The process water deriving from the equipment and machinery washing and cleaning activities will be filtered through suitable grease/oil separators and afterwards properly managed;		X			X	X	X	X		X	X	X	X					X																	
PHY-289	Waste and Hazardous Materials (WHM)	Discharge of polluted wastewater	Avoidance	The oil-containing effluents from the food preparation, the workshop and the equipment washing and cleaning areas will be collected and sent to special degreasers (water and oil separation systems) for separating oil and grease from the wastewater and the resulting amount of oil and grease waste will be properly disposed of;		X			X	X	X	X		X			X					X																	
PHY-290	Waste and Hazardous Materials (WHM)	Discharge of polluted wastewater	Avoidance	The sludge generated from the WWTP will be collected and shipped - by using licensed companies properly specialized and certified for the activity - to licensed sanitary landfills;		X			X	X	X	X		X			X					X																	
PHY-291	Waste and Hazardous Materials (WHM)	Uncontrolled discharge of wastewater	Avoidance	The construction site will be provided with chemical toilets and with a temporary sewage system served by storage/septic tanks;		X			X	X	X	X		X			X					X																	
PHY-292	Waste and Hazardous Materials (WHM)	Uncontrolled discharge of wastewater	Avoidance	The systems will be constantly properly functioning and in good conditions;		X			X	X	X	X		X			X					X																	
PHY-293	Waste and Hazardous Materials (WHM)	Uncontrolled discharge of wastewater	Avoidance	The sewage storage tanks/septic tanks content will be collected by using local companies specialized and certified for the activity and ensure that the content is properly conferred to licensed facilities;		X			X	X	X	X		X			X					X																	

PHY-294	Waste and Hazardous Materials (WHM)	Uncontrolled discharge of wastewater	Avoidance	Broken, old and inefficient equipment will be replaced with new devices.		X			X	X	X	X		X			X					X																
PHY-295	Waste and Hazardous Materials (WHM)	Risk of environmental pollution from equipment, vehicles and machinery cleaning and washing	Minimization	Areas/stations for washing the vehicles, the equipment, the machinery will be provided, with chemicals bins and trays with leak-proof floor and proper wastewater collection system;		X			X	X	X	X		X			X					X																
PHY-296	Waste and Hazardous Materials (WHM)	Risk of environmental pollution from equipment, vehicles and machinery cleaning and washing	Minimization	The wastewater generated from equipment and machinery cleaning and washing will be treated through a degreaser and the resulting oils and lubricants will be managed as special waste.		X			X	X	X	X		X			X					X																
PHY-297	Waste and Hazardous Materials (WHM)	Forbidden use of highly dangerous and environmental pollutant materials and products	Avoidance	Sourcing, purchasing and using highly pollutive and hazardous materials (subject to both national and international bans or phase-outs due to their harm to living organism and/or environment) will be avoided (e.g., Polychlorobiphenyl PCBs, Ozone Depleting Substances ODSs, Persistent organic Pollutants POPs, Coal tar and Very toxic (T+) substances, unless it is proved that it cannot be substituted with less hazardous substances and materials).		X			X	X	X	X		X			X					X																	
PHY-298	Waste and Hazardous Materials (WHM)	Forbidden use of highly dangerous and environmental pollutant materials and products	Avoidance	The use of highly persistent and toxic pesticides must be avoided to the maximum extent possible. The pesticides below are banned: 2,4,5-trichlorophenoxyaceticacid (2,4,5-T), Aldrin, Arsenic compounds, Chlordane, Dibromochloro propane (DBCP), DDT, Dieldrin, Ethylenebisdithiocarbamate (EBDC), Heptachlor, Mercury compounds, Dechlorane (MIREX), Leptophos (Phosvel).		X			X	X	X	X		X			X					X																	
PHY-299	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	No chemicals or hazardous materials storages will be placed outside of the Project area boundaries.		X			X	X	X	X		X	X	X	X					X																
PHY-300	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	Dedicated storage properly equipped will be provided for storing hazardous products and materials.		X			X	X	X	X		X			X					X																
PHY-301	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	Every hazardous material will be provided with MSDSs updated and clear/well readable showing the productor name, the chemical formula/the components, the hazard pictograms, the warnings and the danger indications and the safety advice on the proper personal or collective protection equipment to be used for the handling.		X			X	X	X	X		X			X					X																
PHY-302	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The hazardous materials bins and trays will be properly labelled with labels showing the product name and the hazard pictograms (e.g., Hazardous to the environment or Acute toxicity symbols).		X			X	X	X	X		X			X					X																
PHY-303	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	Hazardous materials will be stored away from the drainage ditch.		X			X	X	X	X		X			X					X																
PHY-304	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The hazardous materials storages will be provided with proper drains which will send the potential washouts, spills and leaks to the WWTP.		X			X	X	X	X		X			X					X																
PHY-305	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	All hazardous materials will be placed on waterproofing flooring or secondary containment systems adequate for containing the potential spills (i.e., properly calculated).		X			X	X	X	X		X			X					X																
PHY-306	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The hazardous materials storage areas will be located reasonably away from offices and trucks/vehicles main routes.		X			X	X	X	X		X			X					X																
PHY-307	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The hazardous materials will be segregated per categories according to their chemical-physical compatibility (e.g. store separately acid/bases).		X			X	X	X	X		X			X					X																
PHY-308	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The pathways to the storages will be free of obstacles.		X			X	X	X	X		X			X					X																
PHY-309	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	At the storages will be affixed danger signs stating the type of hazardous materials stored.		X			X	X	X	X		X			X					X																
PHY-310	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The access to the hazardous material storages will be restricted to authorized and qualified personnel.		X			X	X	X	X		X			X					X																
PHY-311	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The storages will be provided with proper accidental spills and leaks clean-up materials.		X			X	X	X	X		X			X					X																
PHY-312	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The hazardous materials storage areas will be provided with fire protection, prevention and control devices.		X			X	X	X	X		X			X					X																
PHY-313	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	All liquid chemicals containers will be properly closed and adequately stable to avoid liquid drops, spills and overflow.		X			X	X	X	X		X			X					X																

PHY-314	Waste and Hazardous Materials (WHM)	Hazardous materials management	Avoidance	The mechanical integrity and operability of systems, equipment and tools aimed at preventing liquids overflows (gauges, hose and piping connections, valves) will be ensured.		X			X	X	X	X		X			X					X																	
PHY-315	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Minimization	The hazardous materials types and quantities will be constantly monitored (checked and registered on dedicated logs and forms).		X			X	X	X	X		X			X					X																	
PHY-316	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	Exclusively hazardous materials provided with MSDSs (to be collected on site) will be delivered		X			X	X	X	X		X			X					X																	
PHY-317	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	The off-loading or staging of the hazardous materials delivered will be supervised.		X			X	X	X	X		X			X					X																	
PHY-318	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	The circulation of trucks showing oils and fuel losses or dripping, or clear signs of engines breakages will be forbidden.		X			X	X	X	X		X			X					X																	
PHY-319	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	Offsite paths roads to be followed by the moving vehicles carrying hazardous materials will be defined.		X			X	X	X	X		X			X					X																	
PHY-320	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	Any intentional and uncontrolled discharge of liquid, semi-solid or muddy material will be forbidden.		X			X	X	X	X		X	X	X	X					X																	
PHY-321	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	The hazardous materials will be secured during their transportation for avoiding tripping, flipping and overflows.		X			X	X	X	X		X			X					X																	
PHY-322	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	The perfect tightness of the moving vehicles transporting hazardous sludge, semi-solid and liquids will be ensured.		X			X	X	X	X		X			X					X																	
PHY-323	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	The transportation means will be provided with emergency spills prevention kits.		X			X	X	X	X		X	X	X	X					X																	
PHY-324	Waste and Hazardous Materials (WHM)	Hazardous materials purchasing, transportation and delivery	Avoidance	Exclusively trained, authorized, and qualified operators will be allowed for transporting the hazardous materials.		X			X	X	X	X		X			X					X																	
PHY-325	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	The usage of low Sulphur fuels will be preferred.		X			X	X	X	X		X			X					X																	
PHY-326	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Engines, vehicles, equipment and machinery while not in use will be turned off/shut down.		X			X	X	X	X		X	X	X	X					X																	
PHY-327	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Exclusively compliant chemicals will be sourced, purchased and used.		X			X	X	X	X		X			X					X																	
PHY-328	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Hazardous products and chemicals will be stored in well-ventilated and locked up locations.		X			X	X	X	X		X			X					X																	
PHY-329	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Bulks, cans, bins and trays of hazardous products and chemicals will be closed/sealed.		X			X	X	X	X		X			X					X																	
PHY-330	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Maintenance and repair of machinery and equipment will be performed over concrete floor having barriers against leakages.		X			X	X	X	X		X			X					X																	
PHY-331	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Drip trays will be placed over points that are more statistically inclined to leak and contact points of vehicles.		X			X	X	X	X		X	X	X	X					X																	
PHY-332	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	All hoses and washers will be properly positioned before fuels and other liquids are received and distributed.		X			X	X	X	X		X	X	X	X					X																	
PHY-333	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Availability of specific areas allocated for loading, unloading and transportation of hazardous substances and materials (impermeable ground).		X			X	X	X	X		X			X					X																	
PHY-334	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Concrete production will be kept under control. Spill outs and leakages during transportation and usage of concrete will be controlled.		X			X	X	X	X		X			X					X																	

PHY-335	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	The drains or valves of the containment equipment will be sealed.		X			X	X	X	X		X			X					X																	
PHY-336	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	Storage tanks containing fuel/lubricants and oils will be sealed and secured during the mobilization.		X			X	X	X	X		X			X					X																	
PHY-337	Waste and Hazardous Materials (WHM)	Avoiding potential environmental pollution due to hazardous materials spills and leaks	Avoidance	At the secondary containment systems, where possible, will be used specific valved catch basins that will allow spills and releases to enter a dead-end sump from which spilled materials can be pumped out.		X			X	X	X	X		X			X					X																	
PHY-338	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	Leaks and spills of oils, fuels, liquid wastes and other hazardous materials from the equipment and machinery will be avoided.		X			X	X	X	X		X	X	X	X					X																	
PHY-339	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	The work areas where cleaning and maintenance and control of equipment and machinery are completed will be provided with specific drains.		X			X	X	X	X		X	X	X	X					X																	
PHY-340	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	The oil changes will be completed on waterproofed paved areas.		X			X	X	X	X		X			X					X																	
PHY-341	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	Portable tanks (of appropriate volume) will be placed under engine drain points to prevent any spilling of oils during oil change.		X			X	X	X	X		X			X					X																	
PHY-342	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	The oil waste will be properly and carefully transferred to sealed drums.		X			X	X	X	X		X			X					X																	
PHY-343	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	Refueling operations will be exclusively carried out at designated re-fueling paved areas using retention tanks or drip trays (of appropriate volume) to collect leaks/spills.		X			X	X	X	X		X	X	X	X					X																	
PHY-344	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	When the refueling will be carried out directly through tankers, retention tanks or drip trays (of appropriate volume) will be placed below to collect leaks/spills.		X			X	X	X	X		X	X	X	X					X																	
PHY-345	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	Tankers' delivery hoses will be checked for checking the existence of fuel residues.		X			X	X	X	X		X	X	X	X					X																	
PHY-346	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	The fueling operations will be supervised.		X			X	X	X	X		X	X	X	X					X																	
PHY-347	Waste and Hazardous Materials (WHM)	Equipment and machinery maintenance and control	Minimization	The fueling equipment will be periodically inspected daily to ensure that all components are in satisfactory condition.		X			X	X	X	X		X	X	X	X					X																	
SOC-01	Ecosystem Services	Degradation of soil and vegetation	Avoidance	Avoid the unnecessary removal or degradation of soil and vegetation.		X			X	X	X	X		X			X			X																			
SOC-02	Ecosystem Services	Degradation of soil and vegetation	Avoidance	Ensure that vehicle movements are restricted to designated roads to avoid disturbance of lands adjacent to the roads and loss of ecosystem services.		X			X	X	X	X		X	X	X	X			X																			
SOC-03	Ecosystem Services	Degradation of soil and vegetation	Compensation	Compensate for the loss of vegetation. Where possible, the Contractor will revegetate the affected area and revegetate the Project sites as per design specifications (utilizing native/ autochthonous species) for compensating the loss of vegetation that could affect local livestock.		X			X	X	X	X		X			X			X																			
SOC-04	Ecosystem Services	Change in the local hydrogeology and groundwater quality	Restoration	By the end of the construction phase, all water wells affected by construction activities on the Project's AoI will have to be restored in order to allow their usage to local herders for grazing activities.		X			X	X	X	X		X			X			X																			
SOC-05	Landscape and visual quality	Degradation of soil and vegetation	Restoration	By the end of construction phase, landscaping techniques shall be applied to ameliorate the landscape and visual impacts and also to restore the land impacted by the construction to make it accessible again for herders to conduct grazing activities. The same soil will be reused to guarantee the same conditions		X			X	X	X	X		X			X			X																			
SOC-06	Landscape and visual quality	Presence of new buildings/infrastructures	Restoration	Upon completion of the construction phase, all site elements not required for the subsequent operational phase will be removed and the areas will be restored to their original state.		X			X	X	X	X		X			X			X																			
SOC-07	Community, Health, Safety and Security	Dissemination of the Community Health, Safety and Security Management Plan	Minimization	The CHSSMP will be disseminated to all staff responsible for managing the construction site and to all sub-contractors working on the Project.		X			X	X	X	X		X			X																		X				
SOC-08	Community, Health, Safety and Security	Emission of dust and particulate matter and gaseous pollutants	Avoidance	During their transportation, excavated materials will be covered with nylon canvas to avoid emission of dust and PMs when close to sensitive receptors.		X			X	X	X	X		X			X																	X					
SOC-09	Community, Health, Safety and Security	Emission of dust and particulate matter and gaseous pollutants	Minimization	Speed limitations will be applied for vehicles to minimize the emission of dust an PMs when passing through villages and cities if other routes are not possible.		X			X	X	X	X		X	X	X	X																	X					
SOC-10	Community, Health, Safety and Security	Emission of noise and vibrations	Avoidance	Ensure that the vehicles use only designated access roads to reduce traffic routing through community areas and avoiding noise disturbance from traffic.		X			X	X	X	X		X			X											X											
SOC-11	Community, Health, Safety and Security	Emission of noise and vibrations	Minimization	Communicate well in advance to local authorities when explosives are to be delivered at the Project site, day and time when blasting activities are expected to take place and which part of the Project site will be interested in.		X			X	X	X	X		X			X						X											X					
SOC-12	Community, Health, Safety and Security	Emission of light	Minimization	Communicate in a timely manner to herders the location of enlightened sites, in strict communication with the Municipality and the Government, so that they can decide where to set their camps, minimizing the impact of night lights on such receptors.		X			X	X	X	X		X			X																	X					

SOC-13	Community, Health, Safety and Security	Presence of new buildings/infrastructures	Minimization	Accomodation camp and, if needed, other Project site sensitive locations will be properly fenced; if fencing of the site is not feasible, a sufficient number of security personnel will be on at site boundaries to ensure that no community members or unauthorized persons enter the site.		X			X	X	X	X		X			X														X				
SOC-14	Community, Health, Safety and Security	Presence of new buildings/infrastructures	Minimization	All sites and fencing will be provided with suitable signage indicating the prohibition to enter to prevent unintentional entry by herders or livestock into hazardous areas. Signs will include pictograms to ensure they are understandable to all persons, including children.		X			X	X	X	X		X			X														X				
SOC-15	Community, Health, Safety and Security	Presence of new buildings/infrastructures	Minimization	Controlled access points for plant workers and decommissioning vehicles will be designated to minimize conflict with grazing routes.		X			X					X			X														X				
SOC-16	Community, Health, Safety and Security	Workers' influx	Minimization	Hygiene standards will be adopted and implemented within the Project site in order to have the surroundings clean, hence preventing illness and the spread of diseases. Hygiene standards shall encompass basic hygiene, food hygiene, hand hygiene, among others. All employees, contractors and subcontractors shall receive induction related to the standards.		X			X	X	X	X		X			X														X	X			
SOC-17	Community, Health, Safety and Security	Trainings Induction	Minimization	Inform workers on communicable diseases, particularly Sexually Transmitted Diseases, through training and awareness campaigns.		X			X	X	X	X		X	X	X	X															X			
SOC-18	Community, Health, Safety and Security	Trainings Induction	Minimization	Conduct mandatory GBV, sexual harassment training regularly for all workers		X			X	X	X	X		X	X	X	X															X			
SOC-19	Community, Health, Safety and Security	Trainings Induction	Minimization	Ensure workers, particularly workers coming from other parts of Kazakhstan and abroad are fully aware of the local cultures, norms and customs trough an intercultural training.		X			X	X	X	X		X	X	X	X															X			
SOC-20	Community, Health, Safety and Security	Workers' influx	Minimization	Have in place a pedestrian safety system, which is implemented throughout the AoI.		X			X	X	X	X		X			X															X			
SOC-21	Community, Health, Safety and Security	Workers' influx	Minimization	Set up safety structures to ensure local communities are safe and protected from any potential Project related accidents.		X			X	X	X	X		X			X															X			
SOC-22	Community, Health, Safety and Security	Workers' influx	Minimization	Provide cultural sensitization training for workers regarding engagement with local community.		X			X	X	X	X		X	X	X	X														X				
SOC-23	Community, Health, Safety and Security	Workers' influx	Minimization	Aktas Energy LLP will develop and implement a dedicated strict Code of Conduct for the workers, and make sure that it is reflected in the Contractor Management System, outlining expected behavior with respect to their daily interactions with local residents and users of public amenities.		X			X	X	X	X		X			X														X				
SOC-24	Community, Health, Safety and Security	Workers' influx	Minimization	Contractor's workers will be educated on how to behave within the Project neighboring communities where the workforce will be likely to spend its time off.		X			X	X	X	X		X	X	X	X														X				
SOC-25	Community, Health, Safety and Security	Workers' influx	Minimization	The workers' accommodation camp at the WPP site will be fenced in order to avoid disturbance to seasonal sheperds who perform their grazing activities around the WPP site and to maintain a security control.		X			X					X	X	X	X														X				
SOC-26	Community, Health, Safety and Security	Workers' influx	Minimization	To minimize the risk of sexual harassment and gender-based violence due to the influx of male workers in the Project AoI, adopt a zero-tolerance policy on the abuse and enforce the local law control and application system in the area.		X			X	X	X	X		X	X	X	X														X				
SOC-27	Community, Health, Safety and Security	Workers' influx	Minimization	Aktas Energy LLP will ensure that the Contractor will provide health and safety induction for workers and awareness trainings on Sexual Transmission Infections ("STI") and others communicable disease prevention; implement trainings on raising awareness on healthy lifestyles on topics such as – among others- on alcohol, personal and food hygiene, communicable and non-communicable diseases.		X			X	X	X	X		X	X	X	X															X				
SOC-28	Community, Health, Safety and Security	Grievance Mechanism	Minimization	Have in place a grievance mechanism including contact information where local community can file grievances / complaints about the Project's activities that impacted the health, safety and security of the local population and settlements;		X			X	X	X	X		X			X														X				
SOC-29	Community, Health, Safety and Security	Grievance Mechanism	Minimization	Prepare and enforce a workers' code of conduct with indications of the behavior to be followed in interactions with local communities.		X			X	X	X	X		X			X														X				
SOC-30	Community, Health, Safety and Security	Grievance Mechanism	Minimization	Create outreach programs to inform local community about the Project's traffic impacts.		X			X	X	X	X		X			X														X				
SOC-31	Community, Health, Safety and Security	Code of Conduct	Minimization	The code of conduct will provide rules in terms of behaviour within the camp, behaviour when outside of the camp, and set expectations about interactions with local communities		X			X	X	X	X		X			X														X				
SOC-32	Community, Health, Safety and Security	Code of Conduct	Minimization	The code of conduct will include clear zero-tolerance policies on GBV and a commitment to cooperate with law enforcement agencies investigating perpetrators of gender-based violence		X			X	X	X	X		X			X														X				
SOC-33	Community, Health, Safety and Security	Demand for security management	Avoidance	Ensure that security personnel do not have criminal records or a record of human rights violations including provisions for identification of cases of past abuse and checking their qualifications and certifications.		X			X	X	X	X		X			X														X				
SOC-34	Community, Health, Safety and Security	Demand for security management	Avoidance	Job descriptions for the in- house security personnel to include the requirement that prohibits any acts of force, alcohol, and drugs		X			X	X	X	X		X			X														X				
SOC-35	Community, Health, Safety and Security	Demand for security management	Avoidance	At the entrance of the Project sites, an employee of the subcontractor company shall verify the identity of those who enter document in hand and, if not present in the register, but authorized, the person in charge shall update the register and the list of identity documents.		X			X	X	X	X		X	X	X	X														X				
SOC-36	Community, Health, Safety and Security	Demand for security management	Avoidance	The Project sites shall be inspected for checking the congruity between the data in the registers and photo lists with the attendance at the construction site.		X			X	X	X	X		X			X														X				
SOC-37	Community, Health, Safety and Security	Demand for security management	Minimization	Security Personnel working at the project site will be trained on the Voluntary Principles on Security and Human Rights and about the use of force and appropriate conduct toward workers and nearby communities.		X			X	X	X	X		X			X														X				
SOC-38	Community, Health, Safety and Security	Demand for security management	Minimization	Security personnel will be trained on conflict resolution, crowd management, restraint and cautious exercise of security activity and appropriate use of force.		X			X	X	X	X		X			X														X				
SOC-39	Community, Health, Safety and Security	Demand for security management	Minimization	Train security personnel on GBVH prevention		X			X	X	X	X		X			X														X				
SOC-40	Community, Health, Safety and Security	Demand for security management	Minimization	Carry out the stakeholder engagement to ensure that local communities are aware of how to raise a grievance about any security contractor behavior, should this be necessary.		X			X	X	X	X		X			X							X							X				
SOC-41	Community, Health, Safety and Security	Demand for security management	Minimization	Project site portions where construction works take place will be properly fenced; if fencing of the site is not feasible, a sufficient number of security personnel will be on at site boundaries to ensure that no community members or unauthorized persons enter the site.		X			X	X	X	X		X			X														X				
SOC-42	Community, Health, Safety and Security	Demand for security management	Minimization	All sites and fencing will be provided with suitable signage indicating the prohibition to enter to prevent unintentional entry by herders or livestock into hazardous areas. Signs will include pictograms, to ensure they are understandable to all persons, including children.		X			X	X	X	X		X			X														X				
SOC-43	Community, Health, Safety and Security	Demand for security management	Minimization	Lock turbine access doors to restrict unauthorized entry into turbines and associated structures at late construction stage		X			X	X	X	X		X			X														X				
SOC-44	Community, Health, Safety and Security	Demand for security management	Minimization	Designate controlled access points for plant workers and construction vehicles to minimize conflict with grazing routes		X			X	X	X	X		X			X														X				
SOC-45	Community, Health, Safety and Security	Demand for security management	Minimization	Keep records of site access and provide a badge to all workers, subcontractors and suppliers that need access to the construction site		X			X	X	X	X		X			X														X				
SOC-46	Community, Health, Safety and Security	Increase of traffic	Minimization	Develop and implement an awareness raising campaign with local stakeholders regarding the risks related to the movement of heavy vehicles and increased traffic in the area. The main focus of this campaign will be on those communities that are located on the transit routes of goods and materials that need to be transported to the Project site. The campaign will be implemented in coordination with local community groups. Details of this campaign will be presented as part of SEP.		X			X	X	X	X		X			X							X			X									
SOC-47	Community, Health, Safety and Security	Turbines Safety	Minimization	At project design stage, siting turbines at safe distances from dwellings, public paths, or other vulnerable locations based on turbine height, rotor diameter, and ice throw risk modeling to minimize hazards	X				X				X				X														X				
SOC-48	Community, Health, Safety and Security	Turbines Safety	Minimization	Apply clear warning signals on the risk of ice throw		X			X					X			X														X				
SOC-49	Community, Health, Safety and Security	OHTL Safety	Minimization	Apply clear warning signals on the risk electrocution near the OHTL route		X				X				X			X														X				
SOC-50	Community, Health, Safety and Security	OHTL Safety	Minimization	Warning signals shall include the indication of 100m safety distance from the transmission line		X				X				X			X														X				
SOC-51	Occupational, Healt and Safety	Occupational, Healt and Safety MP Dissemination	Minimization	Develop, implement and disseminate the OHS MP for the construction phase of the Project.		X			X	X	X	X		X			X															X			

SOC-52	Occupational, Healt and Safety	Occupational, Healt and Safety MP Dissemination	Minimization	The OHSMP covered: (i) OHS organisation and workers induction and training, (ii) Personal and collective protective equipment, (iii) Works requiring prior permit, authorization or approval, (iv) Traffic regulation and heavy machinery movement within worksites, (v) Works in excavations, (vi) Outdoor activities restrictions under dangerous weather conditions, (vii) Electrical live systems safety, (viii) First aid & Emergency response, (ix) OHS monitoring, (x) Non-compliances management and continuous improvement.		X			X	X	X	X		X	X	X	X																		X			
SOC-53	Occupational, Healt and Safety	Healthcare infrastructure and services	Minimization	Identification of the healthcare facilities in the surroundings to be used in case of workers' accidents, with the aim of avoiding additional pressure on existing structures.		X			X	X	X	X		X			X																X			
SOC-54	Occupational, Healt and Safety	Hygiene standards	Minimization	Hygiene standards will be adopted and implemented within the Project site in order to have the surroundings clean, hence preventing illness and the spread of diseases. Hygiene standards shall encompass basic hygiene, food hygiene, hand hygiene, among others. All employees shall receive induction related to the standards.		X			X	X	X	X		X	X	X	X																	X			
SOC-55	Occupational, Healt and Safety	Employees' OHS awareness and training	Minimization	All personnel will be trained in proper OHS management during construction phase, taking into consideration all the OHS hazards including their level of responsibility and duties.		X			X	X	X	X		X			X																X			
SOC-56	Occupational, Healt and Safety	Protection against unfavourable weather conditions	Minimization	Workers' exposure to extreme weather conditions such as heat waves and cold fronts (subzero temperatures): EPC contractor to monitor extreme weather (hot and cold fronts) related incidents and ensure that (i) workers in the warm seasons are provided with shaded places to rest/eat and with sufficient cold drinking water; (ii) workers in cold seasons are provided with enough clothing and heating to combat the cold weather.		X			X	X	X	X		X			X																		X			
SOC-57	Occupational, Healt and Safety	Workers' Health	Minimization	Provide health and hygene induction for workers and awareness trainings on STIs, communicable and non-communicable disease prevention, Awareness on healthy lifestyles, alcohol, personal and food hygiene, etc.		X			X	X	X	X		X			X																X			
SOC-58	Occupational, Healt and Safety	Workers' Health	Minimization	Perform a health screening of all workers prior to beginning of work and on a periodic basis.		X			X	X	X	X		X			X																X			
SOC-59	Occupational, Healt and Safety	OHS Management	Minimization	Ensure that adequate measures are in place for the following: -Manual handling -Correct use of Plant and Equipment -Management of hazardous substances -Compliance with occupational noise and vibration standards -Compliance with dust management standards -Provide PPE and ensure the correct usage -Management of drugs and alcohol -Housekeeping standards -Address adverse weather conditions -Ensure correct/sufficient workplace lighting.		X			X	X	X	X		X			X																		X			
SOC-60	Occupational, Healt and Safety	Manual Handling	Minimization	Planning work site layout to minimize the need for manual transfer of heavy loads.	X				X	X	X	X	X				X																X			
SOC-61	Occupational, Healt and Safety	Manual Handling	Minimization	Mechanical lifting and moving equipment (i.e., forklifts cranes) shall be provided to avoid repetitive lifting of heavy objects and injuries from over-exertion.		X			X	X	X	X		X			X																X			
SOC-62	Occupational, Healt and Safety	Manual Handling	Minimization	Requiring multi-person lifts if weights exceed thresholds.		X			X	X	X	X		X			X																X			
SOC-63	Occupational, Healt and Safety	Manual Handling	Minimization	Selecting and designing tools that reduce force requirements and holding times and improve postures.		X			X	X	X	X		X			X																X			
SOC-64	Occupational, Healt and Safety	Manual Handling	Minimization	Incorporating rest and stretch breaks into work processes and conducting job rotation.		X			X	X	X	X		X			X																X			
SOC-65	Occupational, Healt and Safety	Plant Management	Minimization	No person shall operate any plant unless he/she is trained by licensed trainers and possesses a valid driving license, safety training certificates and safety cards for specified categories of plant. Operators of these plants shall be undergone fit for work medical checks and provided with and use adequate PPE.		X			X	X	X	X		X			X																X			
SOC-66	Occupational, Healt and Safety	Plant Management	Minimization	Any plant shall be inspected prior to operations on the worksite and at regular intervals thereafter. Each shall have its valid inspection certificate, inspection tag, specifications, and profile. These documents will be checked prior to being brought to the worksite. Besides, all plants operated on the worksite shall be equipped with adequate safety measures (e.g., machine guards, audible alarms, signals, seatbelts, mirrors, brakes). Any plant that is not qualified shall be refused permission to operate on the worksite.		X			X	X	X	X		X			X																	X			
SOC-67	Occupational, Healt and Safety	Plant Management	Minimization	Selection of suitable plant for the task and site conditions, such as: Choice of wheeled or tracked plant. Reach and capacity, which can affect the positioning of plant, and the loads that it imposes. Maximum safe operating slope angle. The extent of tail swing on excavators, which can be a hazard if working in restricted areas.		X			X	X	X	X		X			X																	X			
SOC-68	Occupational, Healt and Safety	Plant Management	Minimization	Ensuring that plant is used properly: Operators shall walk round the plant before setting off, to check for any hazards that could not be seen from the driving position. Plant shall not be overloaded, as this affects stability and / or visibility. Operating procedures shall be followed, and speed limits respected. Aids to vision, such as mirrors to minimize blind spots, shall be properly maintained, adjusted, and used, to minimize risk to people and vulnerable structures in the vicinity of the plant. People working alongside plants shall also be aware of blind spots and be trained in even apparently simple activities such as gaining the attention of the driver, and knowing when it is safe to approach. The plant shall be switched off after use and its key shall always be kept by operators to avoid unauthorized operations.		X			X	X	X	X		X			X																		X			
SOC-69	Occupational, Healt and Safety	Plant Management	Minimization	Ensuring that plant is in good condition by carrying out and recording regular safety checks (daily / periodic). These include both basic checks by the operator, and periodic specialized tests.		X			X	X	X	X		X			X																X			
SOC-70	Occupational, Healt and Safety	Plant Management	Minimization	Adjustments, such as changing buckets on an excavator, shall be carried out in a safe location, by a competent person, in accordance with the manufacturer's instructions.		X			X	X	X	X		X			X																X			
SOC-71	Occupational, Healt and Safety	Plant Management	Minimization	Ensuring that the plant has adequate fixed guards to prevent access to hazardous parts.		X			X	X	X	X		X			X																X			
SOC-72	Occupational, Healt and Safety	Plant Management	Minimization	Ensuring that plant is only used where the ground has sufficient bearing capacity, particularly when working beyond made roads, or next to excavations or edges of roads.		X			X	X	X	X		X			X																X			
SOC-73	Occupational, Healt and Safety	Plant Management	Minimization	Ensuring that plant has functional reversing warning signals.		X			X	X	X	X		X			X																X			
SOC-74	Occupational, Healt and Safety	Plant Management	Minimization	Ensure that plant drivers and other users proceed with sufficient awareness of vehicles and people who may be present.		X			X	X	X	X		X			X																X			
SOC-75	Occupational, Healt and Safety	Equipment Management	Minimization	Regular verification of all handheld power tools and electrical equipment to ensure they are in a safe working order. Those that comply at the time of inspection shall be tagged and recorded in an inspection register.		X			X	X	X	X		X			X																X			
SOC-76	Occupational, Healt and Safety	Equipment Management	Minimization	Always keep tools in good condition: keeping them clean and dry. store them properly after each use. keeping cutting tools sharp and covering sharp edges with a suitable covering to protect the tool and to prevent injuries from unintended contact.		X			X	X	X	X		X			X																X			
SOC-77	Occupational, Healt and Safety	Equipment Management	Minimization	Repairing or installing any electrical equipment must only be carried out by a qualified electrician.		X			X	X	X	X		X			X																X			
SOC-78	Occupational, Healt and Safety	Equipment Management	Minimization	Ensure that employees are properly trained in the safe use of handheld power tools and electrical equipment.		X			X	X	X	X		X			X																X			
SOC-79	Occupational, Healt and Safety	Equipment Management	Minimization	Before using power tools, workers must ensure: Electrical connections are secure. Electricity supply is through a residual current device. Safety guards are in position. The machine is switched off before activating the electricity supply. Appropriate PPE is used as required by manufacturer's guidelines or as per outcomes of the risk assessment. Any issues with power tools are reported to their supervisors. Unsafe tools will be tagged and removed from service.		X			X	X	X	X		X			X																	X			
SOC-80	Occupational, Healt and Safety	Hazardous Substances	Minimization	Maintenance of an updated register of hazardous materials present onsite compiled from the Safety Data Sheet (SDS).		X			X	X	X	X		X			X																X			
SOC-81	Occupational, Healt and Safety	Hazardous Substances	Minimization	Appointment of a competent person to receive such materials and ensure their safe storage and use.		X			X	X	X	X		X			X																X			
SOC-82	Occupational, Healt and Safety	Hazardous Substances	Minimization	Establishment of procedures for labelling, issue, distribution, and use.		X			X	X	X	X		X			X																X			

SOC-83	Occupational, Healt and Safety	Hazardous Substances	Minimization	Communication of the hazards by the competent person to the users.		X			X	X	X	X		X			X																	X			
SOC-84	Occupational, Healt and Safety	Hazardous Substances	Minimization	Designation of storage areas secured against unauthorized access, and procedures for transport and disposal in line with the Projects' Waste Management requirements.		X			X	X	X	X		X			X																	X			
SOC-85	Occupational, Healt and Safety	Hazardous Substances	Minimization	Only purchase and store no more hazardous substances than needed.		X			X	X	X	X		X			X																	X			
SOC-86	Occupational, Healt and Safety	Hazardous Substances	Minimization	Every container of hazardous substances shall be labelled in accordance with Law on Chemical and internationally recognized requirements and standards. Any means of written communication shall be made available in relevant languages so that they can be understood by the workforce and be readily available to exposed workers and first-aid personnel.		X			X	X	X	X		X			X																	X			
SOC-87	Occupational, Healt and Safety	Hazardous Substances	Minimization	Hazardous substances are returned to the designated storage areas when not in use.		X			X	X	X	X		X			X																	X			
SOC-88	Occupational, Healt and Safety	Hazardous Substances	Minimization	Adequate warning notices in relevant languages so that they can be understood by the workforce specifying the nature of the danger of the hazardous substances shall be posted and maintained at every place where the hazardous substances are kept or stored.		X			X	X	X	X		X			X																	X			
SOC-89	Occupational, Healt and Safety	Hazardous Substances	Minimization	Smoking, open lights and flame or spark producing devices shall be prohibited in or around the flammable storage enclosure in the worksite.		X			X	X	X	X		X	X	X	X																	X			
SOC-90	Occupational, Healt and Safety	Hazardous Substances	Minimization	Corrosive, oxidizing and reactive chemicals shall be segregated from flammable materials and from other chemicals of incompatible class (acids vs. bases, oxidizers vs. reducers, water sensitive vs. water based, etc.), stored in ventilated areas and in containers with appropriate secondary containment to minimize intermixing during spills.		X			X	X	X	X		X			X																		X			
SOC-91	Occupational, Healt and Safety	Hazardous Substances	Minimization	All workers involved in chemical activities (i.e., handling, use, storage and management) are trained in the use of the available information (such as SDS), safe work practices, appropriate use of PPE, and chemical spill response.		X			X	X	X	X		X			X																	X			
SOC-92	Occupational, Healt and Safety	Hazardous Substances	Minimization	Provision of secondary containment, drip trays or other overflow and drip containment measures, for hazardous materials containers at connection points or other possible overflow points.		X			X	X	X	X		X			X																	X			
SOC-93	Occupational, Healt and Safety	Hazardous Substances	Minimization	Spill kits shall be made available in areas where hazardous material and liquid hazardous wastes are stored.		X			X	X	X	X		X			X																	X			
SOC-94	Occupational, Healt and Safety	Hazardous Substances	Minimization	Refuelling on the worksite shall be minimized as much as possible. Where it cannot be avoided, there shall be dedicated refuelling areas or other fluid transfer areas, with impervious surfaces.		X			X	X	X	X		X			X																	X			
SOC-95	Occupational, Healt and Safety	Hazardous Substances	Minimization	Suitable personal protection equipment (PPE) (footwear, masks, protective clothing, and goggles in appropriate areas), emergency eyewash supplies shall be available in the workplace first aid kit(s).		X			X	X	X	X		X			X																	X			
SOC-96	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	Contractor must comply to noise and vibration levels presented under the OHS MP.		X			X	X	X	X		X			X																	X			
SOC-97	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	The following control measures hierarchy must be followed: ?Eliminate/Reduction of the noise or vibration. ?Isolation and insulation of the work area from the source. ?Limiting the period of exposure. ?Use of hearing protection PPE. ?If needed, the monitoring of the exposure of employees through a sampling program.		X			X	X	X	X		X	X	X	X																		X			
SOC-98	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	Noise levels must be maintained below the first action level, so far as is reasonably practicable. To do so, the following measures may be implemented: ?Design and install silencers and soundproof enclosures on equipment generating noise likely to expose personnel to levels higher than the second action level. ?Making sure the silencers on mobile plants are in good condition. ?Maintaining equipment regularly to prevent noise from loose bearings and leaky compressed-air hoses and joints. ?Direct vents and pressure release valves as far away from site personnel or areas likely to have personnel as possible. ?Schedule particularly noisy activities (e.g., piling) at times where it is likely to expose a smaller number of people.		X			X	X	X	X		X			X																		X			
SOC-99	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	Provide "silent havens", closed rooms well insulated or soundproof where personnel exposed to high noise levels can rest.		X			X	X	X	X		X			X																	X			
SOC-100	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	Work areas where noise levels may be higher than the first action level shall be specifically marked. In addition, access to areas where noise levels may be higher than the second action level must be physically restricted.		X			X	X	X	X		X			X																	X			
SOC-101	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	All mobile plant and equipment that emits a noise level higher than the second action level in normal operating condition must be specifically marked in a way that is visible by its operator(s), and that requires them to use hearing protection while operating the equipment.		X			X	X	X	X		X			X																	X			
SOC-102	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	If noise levels exceed the first action level, exposed employees must be made aware of the risks and associated control measures. Appropriate PPE must be made available to all exposed persons.		X			X	X	X	X		X			X																	X			
SOC-103	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	No employee shall be exposed to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear shall be exposed to peak sound pressure level (instantaneous) of more than 140 dB(C).		X			X	X	X	X		X			X																	X			
SOC-104	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	The use of hearing protection shall be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A) or the peak sound levels reach 140 dB(C). Hearing protective devices provided shall be capable of reducing sound levels at the ear to at least 85 dB(A).		X			X	X	X	X		X			X																	X			
SOC-105	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	Workers who are or will be exposed to extensive noise levels shall be subject to pre-employment medical examination and periodic hearing checks after employment.		X			X	X	X	X		X			X																	X			
SOC-106	Occupational, Healt and Safety	Occupational Noise and Vibration	Minimization	If it is not possible to eliminate the noise source or reduce the noise, provide workers with ear defenders (muffs or plugs). However, providing hearing protection is not a substitute for noise elimination and control at source.		X			X	X	X	X		X			X																	X			
SOC-107	Occupational, Healt and Safety	Dust Management	Minimization	Assessments must be carried out on all works that produce significant quantities of dust.		X			X	X	X	X		X			X																	X			
SOC-108	Occupational, Healt and Safety	Dust Management	Minimization	Wherever possible methods of work will be employed that will minimize the production of dust. This may involve work methods that will not produce dust, the use of local extraction units or the wetting down of work areas to minimize the production of dust.		X			X	X	X	X		X			X																	X			
SOC-109	Occupational, Healt and Safety	Dust Management	Minimization	Wetting down shall only be carried out where it is safe to do so and shall not be done if there is any risk of contact with live electricity. As an additional measure, any operatives working within dusty areas shall be issued with Personal Protective Equipment determined by the risk assessment for the process.		X			X	X	X	X		X			X																	X			
SOC-110	Occupational, Healt and Safety	Dust Management	Minimization	Dust extraction units will be attached on all chasing machines or abrasive wheels used for operations that will produce dust.		X			X	X	X	X		X			X																	X			
SOC-111	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	Active use of PPE if alternative technologies, work plans or procedures cannot eliminate, or sufficiently reduce, a hazard or exposure.		X			X	X	X	X		X			X																	X			
SOC-112	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	Identification and provision of appropriate PPE that offers adequate protection to the worker, coworkers, and occasional visitors, without incurring unnecessary inconvenience to the individual. PPE shall be provided to workers at no cost.		X			X	X	X	X		X			X																	X			
SOC-113	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	The following standard PPE is mandatory for all personnel and visitors: - Safety helmet - Safety footwear - Eye protection - High visibility jacket or vest - Safety gloves - Protective work clothing		X			X	X	X	X		X			X																	X			
SOC-114	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	Other non-standard PPE may be required based on the outcomes of the activity specific risk assessment and the requirements of local legislation and selected according to criteria on performance and testing established (e.g., a suitable size and fit and reasonably comfortable). The quality of selected PPE shall meet relevant, recognized standards.		X			X	X	X	X		X			X																	X			
SOC-115	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	PPE shall be checked to fit employees well and not interfere with other safety equipment.		X			X	X	X	X		X			X																	X			
SOC-116	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	PPE usage shall be regularly supervised to ensure they are used when they are in need.		X			X	X	X	X		X			X																	X			
SOC-117	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	Any person supplying the PPE shall also: ?Provide workers with information, training, and instruction in the proper use, wearing, storage and maintenance of PPE. ?Ensure that any other person at the workplace (such as Project Owner, visitors, or inspectors) is appropriately provided with PPE to wear as required.		X			X	X	X	X		X			X																	X			
SOC-118	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	Proper maintenance of PPE, including cleaning when dirty and replacement when damaged or worn out. Proper use of PPE shall be part of the recurrent training programs for employees.		X			X	X	X	X		X			X																	X			
SOC-119	Occupational, Healt and Safety	Personal Protective Equipment (PPE)	Minimization	The PPE provided to workers shall be entered into a register, with the signature of each worker receiving the PPE. The register shall be maintained and kept updated.		X			X	X	X	X		X			X																	X			

SOC-120	Occupational, Healt and Safety	Drugs and Alcohol	Minimization	No alcohol is allowed to be consumed before and during working hours.		X			X	X	X	X		X	X	X	X																	X			
SOC-121	Occupational, Healt and Safety	Drugs and Alcohol	Minimization	No illegal drugs shall be consumed or permitted on property at any time or under any circumstance.		X			X	X	X	X		X	X	X	X																	X			
SOC-122	Occupational, Healt and Safety	Drugs and Alcohol	Minimization	No person who is under the influence of alcohol or drugs is allowed onsite.		X			X	X	X	X		X	X	X	X																	X			
SOC-123	Occupational, Healt and Safety	Drugs and Alcohol	Minimization	Workers who are taking prescription medication that may affect their safety at work (that cause drowsiness), are to inform their supervisors of the circumstances so that appropriate duties may be assigned.		X			X	X	X	X		X	X	X	X																	X			
SOC-124	Occupational, Healt and Safety	Housekeeping	Minimization	Ensure that the material or equipment is not stored, stacked, or placed so close to any opening or edge of a floor, scaffold, platform, or structure as to endanger persons below the opening or edge.		X			X	X	X	X		X			X																	X			
SOC-125	Occupational, Healt and Safety	Housekeeping	Minimization	Safe unloading, storage, and laydown of materials.		X			X	X	X	X		X			X																	X			
SOC-126	Occupational, Healt and Safety	Housekeeping	Minimization	Material laydown and storage areas shall be well organized, clearly, and permanently identified and shall not create supplementary hazards to persons.		X			X	X	X	X		X			X																	X			
SOC-127	Occupational, Healt and Safety	Housekeeping	Minimization	Implementing good house-keeping practices, such as sorting <<<and placing loose materials or debris in established areas away from foot paths.		X			X	X	X	X		X			X																	X			
SOC-128	Occupational, Healt and Safety	Housekeeping	Minimization	Debris shall not be allowed to accumulate to constitute a hazard in the worksite.		X			X	X	X	X		X			X																	X			
SOC-129	Occupational, Healt and Safety	Housekeeping	Minimization	Liquid spills shall be cleaned up immediately upon occurrence.		X			X	X	X	X		X	X	X	X																	X			
SOC-130	Occupational, Healt and Safety	Housekeeping	Minimization	Locating electrical cords and ropes in common areas and marked corridors.		X			X	X	X	X		X			X																	X			
SOC-131	Occupational, Healt and Safety	Housekeeping	Minimization	Use of slip retardant footwear.		X			X	X	X	X		X			X																	X			
SOC-132	Occupational, Healt and Safety	Weather conditions - Adverse weather	Minimization	High-risk activities are not allowed to be performed under extreme circumstance of natural conditions that may impact the task increasing the risk of the activity. Those conditions include the following but not limited to: ?Storms ?Lightning ?High Speed Wind ?Earthquake ?Inundation ?Avalanche		X			X	X	X	X		X			X																			X			
SOC-133	Occupational, Healt and Safety	Weather conditions - Adverse weather	Minimization	When high winds are forecast, additional checks shall be undertaken to ensure that materials and stored components are secured against being blown away or blown over.		X			X	X	X	X		X			X																	X			
SOC-134	Occupational, Healt and Safety	Weather conditions - Adverse weather	Minimization	Regularly monitor meteorological forecasts and schedule the work accordingly, and use lightning detectors, if possible, to provide early warning of approaching thunderstorms.		X			X	X	X	X		X			X																	X			
SOC-135	Occupational, Healt and Safety	Weather conditions - Adverse weather	Minimization	PPE shall be suitable for the prevailing weather conditions, ensuring that wearers remain dry and at a comfortable temperature, while still performing its essential protective functions.		X			X	X	X	X		X			X																	X			
SOC-136	Occupational, Healt and Safety	Weather conditions - Adverse weather	Minimization	Take actions detailed in the Emergency Preparedness and Response Plan to respond to inclement weather in a timely manner.		X			X	X	X	X		X			X																	X			
SOC-137	Occupational, Healt and Safety	Weather conditions - Heat stress	Minimization	Monitor weather forecasts for outdoor work to provide advance warning of extreme weather, and plan and manage working schedule to avoid dehydration and heat stress related illnesses.		X			X	X	X	X		X			X																	X			
SOC-138	Occupational, Healt and Safety	Weather conditions - Heat stress	Minimization	Provide good workplace ventilation for closed spaces.		X			X	X	X	X		X			X																	X			
SOC-139	Occupational, Healt and Safety	Weather conditions - Heat stress	Minimization	Provide in sufficient number resting areas.		X			X	X	X	X		X			X																	X			
SOC-140	Occupational, Healt and Safety	Weather conditions - Heat stress	Minimization	Reduce the duration and / or frequency of tasks to be undertaken in the hot environment and allow for frequent breaks.		X			X	X	X	X		X			X																	X			
SOC-141	Occupational, Healt and Safety	Weather conditions - Heat stress	Minimization	Increase the quantity of fresh and cool (10 to 20°C) water per employee and per day and make it available in the immediate working area, so that any worker could drink 50 cL every 15 minutes while working.		X			X	X	X	X		X			X																	X			
SOC-142	Occupational, Healt and Safety	Weather conditions - Heat stress	Minimization	Include sun protection in training for workers (e.g., induction training, toolbox talks).		X			X	X	X	X		X			X																	X			
SOC-143	Occupational, Healt and Safety	Weather conditions - Heat stress	Minimization	Provide workers adequate clothing to protect themselves from the effects of working while exposed to ultraviolet rays.		X			X	X	X	X		X			X																	X			
SOC-144	Occupational, Healt and Safety	Weather conditions - Workplace Lighting	Minimization	Every part of the worksite that is in use shall, to the degree feasible, receive natural light and be supplemented with sufficient artificial illumination, especially interim roads, and work areas where night work is carried out, to promote workers' safety and health, and enable safe equipment operation.		X			X	X	X	X		X			X																	X			
SOC-145	Occupational, Healt and Safety	Weather conditions - Workplace Lighting	Minimization	All workplaces (i.e., excluding access ways and vehicle routes) must be sufficiently light, in such a way that lighting levels are equal to or greater than 50 lux at any point of the workplace. If natural lights do not meet this condition, artificial lights must be in place.		X			X	X	X	X		X			X																	X			
SOC-146	Occupational, Healt and Safety	Weather conditions - Workplace Lighting	Minimization	Areas where people may be present and where there is no or low natural light (i.e., where the lighting levels may be lower than 50 lux) must be provided by appropriate and operational emergency lighting that indicates safe evacuation ways.		X			X	X	X	X		X			X																	X			
SOC-147	Occupational, Healt and Safety	Weather conditions - Workplace Lighting	Minimization	Where artificial lighting is in need, it shall not change the apparent colour or visibility of any safety signs or other safety-related items such as fire extinguishers.		X			X	X	X	X		X			X																	X			
SOC-148	Land use	Land occupation	Minimization	Establish and implement an external *Grievance Mechanism*		X			X	X	X	X		X			X								X	X											
SOC-149	Land use	Land occupation	Minimization	Provide timely information to land users on when land access restrictions will be introduced.		X			X	X	X	X		X			X										X										
SOC-150	Land use	Land occupation	Minimization	Provide timely information on the transportation schedule to the landowners whose lands are located along the route.		X			X	X	X	X		X			X										X										
SOC-151	Land use	Land occupation	Restoration	After the completion of construction activities, fully reinstate all land not permanently occupied.		X			X	X	X	X		X			X										X										
SOC-152	Land use	Land occupation	Compensation	Since no detailed census or asset evaluation has yet been conducted for the ESIA, but landowners and informal land users have been identified during the social baseline assessment, a Land Acquisition and Resettlement Framework (LARF) will be developed. This framework will define the principles, procedures, and entitlement policies for managing potential physical and/or economic displacement, in accordance with national legislation and international standards, specifically EBRD Performance Requirement 5 and IFC Performance Standard 5. The LARF will also identify gaps between Kazakhstan's national land acquisition processes and these international standards. These gaps will be addressed through a Livelihood Restoration Plan, which will detail specific compensation and livelihood restoration measures for Project affected persons.		X			X	X	X	X		X			X												X										
SOC-153	Mobility and Infrastructure	Traffic Management	Minimization	The Traffic Management Plan (TMP) will be disseminated to all staff responsible for managing the construction site and to all sub-contractors working on the Project.		X			X	X	X	X		X	X	X	X											X									
SOC-154	Mobility and Infrastructure	Traffic Management - Workers' Training	Minimization	All drivers will attend a safe driving training course or complete appropriate training courses.		X			X	X	X	X		X	X	X	X											X									
SOC-155	Mobility and Infrastructure	Traffic Management - Workers' Training	Minimization	Drivers transporting explosive materials will attend training course on hazardous material transportation.		X			X	X	X	X		X	X	X	X											X									
SOC-156	Mobility and Infrastructure	Traffic Management - Workers' Training	Minimization	Drivers transporting abnormal materials will attend training course on the management of abnormal loads.		X			X	X	X	X		X	X	X	X											X									
SOC-157	Mobility and Infrastructure	Traffic Management - Workers' Training	Minimization	Sub-Contractors shall ensure that all personnel is aware and trained on their responsibilities and use of this TMP.		X			X	X	X	X		X	X	X	X											X									
SOC-158	Mobility and Infrastructure	Traffic Management - Workers' Training	Minimization	Training records will be kept and sent to the HSE Site Manager		X			X	X	X	X		X	X	X	X											X									
SOC-159	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	All driving rules to be adopted by drivers and workers will be collected in a specific Procedure		X			X	X	X	X		X	X	X	X											X									
SOC-160	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	Seat belts shall be used at all times.		X			X	X	X	X		X	X	X	X											X									
SOC-161	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	Drivers will be obliged to wear PPE when outside the vehicle		X			X	X	X	X		X	X	X	X											X									
SOC-162	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	Indicate safety distance to be kept between moving vehicles		X			X	X	X	X		X	X	X	X											X									
SOC-163	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	Vehicle speed – Indicate and enforce the speed limits. Off-site all vehicle drivers shall observe and comply with all local traffic regulations including national speed limits -when transporting goods and materials onsite and offsite		X			X	X	X	X		X	X	X	X											X									
SOC-164	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	Drivers should avoid unsafe or irresponsible actions such as not compling with safety signs, predefined entrance routes of the site, maneuvering and U-turns		X			X	X	X	X		X	X	X	X											X									

SOC-165	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	Mobile phones- the use of mobile phones whether driving on site or operating construction machinery is prohibited. When compelled to use mobile phones drivers shall park safely and with consideration to other road users and turn on the vehicle emergency/hazard lights.		X			X	X	X	X		X	X	X	X										X											
SOC-166	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	Reversing- all vehicles will enter and exit construction work areas in the forward direction, as far as possible. Heavy construction equipment and trucks shall be prohibited from reversing while unattended on the project site; all are to be equipped with fully functioning and audible reversing alarms/sirens.		X			X	X	X	X		X	X	X	X										X											
SOC-167	Mobility and Infrastructure	Traffic Management - Safe Driving	Minimization	Alcohol - drinking of alcohol during and before any working activity will be prohibited to all workers and drivers.		X			X	X	X	X		X	X	X	X										X											
SOC-168	Mobility and Infrastructure	Traffic Management - Vehicles maintenance	Minimization	Defects or Malfunctions – drivers shall report any vehicle defect or malfunction that occurs and will record such fault in the vehicle maintenance log.		X			X	X	X	X		X	X	X	X										X											
SOC-169	Mobility and Infrastructure	Traffic Management - Vehicles maintenance	Minimization	Scheduled Inspections – all vehicles light or heavy, whether used for the transportation of people or material, shall undergo regular maintenance and controls to ensure safe operation.		X			X	X	X	X		X	X	X	X										X											
SOC-170	Mobility and Infrastructure	Traffic Management - Road safety	Minimization	Forbid the circulation of trucks during peak hours		X			X	X	X	X		X			X										X											
SOC-171	Mobility and Infrastructure	Traffic Management - Road safety	Minimization	Ensure that all trucks and moving vehicles will be labelled with serial numbers for identification of potential transgressors		X			X	X	X	X		X	X	X	X										X											
SOC-172	Mobility and Infrastructure	Traffic Management - Road safety	Minimization	Avoid the traffic vehicles outside the Project area boundaries and outside of defined paths without proper authorization		X			X	X	X	X		X	X	X	X										X											
SOC-173	Mobility and Infrastructure	Traffic Management - Planning of transport routes and activities	Minimization	Ensure that traffic and transport management (materials, products and waste) will be assessed considering potential developments and sensitive receptors near the Project site.		X			X	X	X	X		X			X										X											
SOC-174	Mobility and Infrastructure	Traffic Management - Planning of transport routes and activities	Minimization	Avoid unnecessary traffic by planning transport activities in order to use the less impacting routes and reduce unnecessary trips		X			X	X	X	X		X	X	X	X										X											
SOC-175	Mobility and Infrastructure	Traffic Management - Planning of transport routes and activities	Minimization	Routes will be planned in consultation with local authorities.		X			X	X	X	X		X	X	X	X										X											
SOC-176	Mobility and Infrastructure	Traffic Management - Planning of transport routes and activities	Minimization	Transport activities will be planned so to avoid periods of heavy traffic. Consider planning the transport of abnormal material and explosive material during night-time		X			X	X	X	X		X			X										X											
SOC-177	Mobility and Infrastructure	Traffic Management - Planning of transport routes and activities	Minimization	Passenger vehicles shall follow pre-assigned routes to and from construction camps to worksites and offices or to designated parking areas.		X			X	X	X	X		X			X										X											
SOC-178	Mobility and Infrastructure	Traffic Management - Planning of transport routes and activities	Minimization	If road closures are necessary, these will have to be discussed and agreed with local authorities. They should then be communicated to affected communities with due advance.		X			X	X	X	X		X			X										X											
SOC-179	Mobility and Infrastructure	Increase of traffic	Avoidance	Implement working hour limits for drivers and inform drivers periodically on working schedule.		X			X	X	X	X		X			X										X											
SOC-180	Mobility and Infrastructure	Increase of traffic	Avoidance	Traffic control measures, including road signs and flag people to warn of dangerous conditions, shall be implemented. Road signs should be implemented especially at critical crossing locations and when transporting abnormal and explosive material.		X			X					X	X	X	X										X											
SOC-181	Mobility and Infrastructure	Increase of traffic	Avoidance	Provide police escort vehicles for oversized transport and explosive. The escorted convoys will proceed at regulated speeds and they will signaled to residents through sirens and lights,		X			X					X	X	X	X						X				X											
SOC-182	Mobility and Infrastructure	Increase of traffic	Avoidance	All trucks and trailers must be inspected before the transportation of abnormal materials or explosive material to avoid malfuncti0ning.		X			X					X	X	X	X						X				X											
SOC-183	Mobility and Infrastructure	Increase of traffic	Avoidance	Abnormal or explosive loads will have to be properly secured and covered to prevent any debris or parts from falling onto public roads.		X			X					X	X	X	X						X				X											
SOC-184	Mobility and Infrastructure	Increase of traffic	Avoidance	Carefully plan the transport route for oversized material and coordinate with road authorities to choose routes with adequate road width and bridge load capacity.		X			X					X	X	X	X						X		X		X											
SOC-185	Mobility and Infrastructure	Increase of traffic	Avoidance	Engage with local authorities traffic police to communicate the transport schedule of abnormal and explosive materials, and through them inform in advance the affected community of when large convoys will pass.		X			X					X	X	X	X						X		X		X											
SOC-186	Mobility and Infrastructure	Increase of traffic	Avoidance	Explosives are transported only by certified specialized vehicles and crews, kept in secure containers, and never left unattended.		X			X					X			X						X				X											
SOC-187	Mobility and Infrastructure	Increase of traffic	Avoidance	Warning signs shall be properly placed at entrance gates where trucks enter and exit the construction site.		X			X					X			X										X											
SOC-188	Mobility and Infrastructure	Increase of traffic	Avoidance	Provide as much as feasible, separate mobilization areas and separate gate access to each contractor to minimize interference and risks generated by traffic on site.		X			X					X			X										X											
SOC-189	Mobility and Infrastructure	Increase of traffic	Avoidance	Vehicles will not be allowed on re-vegetated areas, and site traffic shall be limited to prevent unnecessary damage to the natural environment.		X			X	X	X	X		X			X										X											
SOC-190	Mobility and Infrastructure	Increase of traffic	Avoidance	The Contractor shall comply with all the applicable laws with regard to road safety and transport.		X			X	X	X	X		X	X	X	X										X											
SOC-191	Mobility and Infrastructure	Increase of traffic	Avoidance	Diversion routes shall be indicated during construction.		X			X	X	X	X		X			X										X											
SOC-192	Mobility and Infrastructure	Increase of traffic	Minimization	The Contractor shall instruct its drivers and equipment operators that vehicles will be expected to comply with all road ordinances, such as speed limits, roadworthiness, load securing and covering.		X			X	X	X	X		X	X	X	X								X			X											
SOC-193	Mobility and Infrastructure	Increase of traffic	Minimization	Ensure that on transit routes that go through cities and villages, pedestrians have adequate footpaths along roads.		X			X					X			X										X											
SOC-194	Mobility and Infrastructure	Increase of traffic	Minimization	Provide appropriate information to potentially affected local communities prior to the beginning of any works in order to allay fears, complaints or potential risks due to lack of information or awareness about the Project activities.		X			X					X			X										X											
SOC-195	Mobility and Infrastructure	Increase of traffic	Minimization	Provide timely information on transportation schedule to the landowners whose lands are located along the route.		X			X					X	X	X	X								X		X											
SOC-196	Mobility and Infrastructure	Increase of traffic	Minimization	Schedule the construction materials transportation to coincide with off-peak hours. Especially for the transportation of abnormal material and explosives, consider planning the transport during night-time.		X			X					X	X	X	X						X		X		X											
SOC-197	Mobility and Infrastructure	Increase of traffic	Minimization	Ensure abnormal material and explosives road transportation is conducted with escort vehicles.		X			X					X	X	X	X						X		X		X											
SOC-198	Mobility and Infrastructure	Improvement of road network	Minimization	Carry out regular maintenance of access roads.		X			X					X			X										X											
SOC-199	Mobility and Infrastructure	Improvement of road network	Restoration	Improve roads for heavy machinery transportation.		X			X					X			X										X											
SOC-200	Mobility and Infrastructure	Improvement of road network	Restoration	Restoration of roads to at least pre-construction level.		X			X					X			X										X											
SOC-201	Mobility and Infrastructure	Improvement of road network	Compensation	Compensation of all damages on infrastructure.		X			X					X			X										X											
SOC-202	Mobility and Infrastructure	Interference with existent roads/infrastructure/services	Avoidance	All the construction areas should be properly identified to avoid accidents; in addition, organizing community and raising awareness meetings with local affected people will be necessary to inform about the duration of the construction phase.		X			X					X	X	X	X								X		X											
SOC-203	Mobility and Infrastructure	Interference with existent roads/infrastructure/services	Minimization	Local communities shall be informed about interruptions of roads and infrastructure networks. Within the context of the SEP, inform local authorities, local communities on the progress of activities and in particular on the schedule of activities that will entail closures/limitations of roads and interruption of infrastructure networks; possible changes to limit impacts on local communities will be agreed and implemented.		X			X					X	X	X	X								X		X											
SOC-204	Mobility and Infrastructure	Interference with existent roads/infrastructure/services	Minimization	The most suitable transport routes will be selected. When selecting the routes to be used for the transport of materials and products, identify roads that are likely to cause the lowest impacts to local communities in terms of disruption of access and disturbance to population. Plan transportation routes in consultation with local authorities.		X			X					X	X	X	X								X		X											
SOC-205	Mobility and Infrastructure	Interference with existent roads/infrastructure/services	Minimization	A zero-accident practice that minimizes dependence on the region's health infrastructure will be promoted.		X			X					X	X	X	X										X											
SOC-206	Mobility and Infrastructure	Interference with existent roads/infrastructure/services	Minimization	Verify and register all traffic related incidents and periodically revise road safety measures based on lessons learned.		X			X					X	X	X	X										X											
SOC-207	Mobility and Infrastructure	Interference with existent roads/infrastructure/services	Minimization	Implement and operate on the construction site the basic sanitation system composed of water supply service, wastewater collection and treatment, and solid waste collection and treatment service.		X			X					X			X				X	X																
SOC-208	Mobility and Infrastructure	Interference with existent roads/infrastructure/services	Minimization	Mechanisms for transporting workers involved at the construction site shall be implemented.		X			X	X	X	X		X			X										X											
SOC-209	Mobility and Infrastructure	Interference with existent roads/infrastructure/services	Minimization	Identify the effects generated by the definition of the design of the construction site and accesses, seeking to minimize the effects on the affected population, with emphasis on vulnerable groups through the SEP.		X			X	X	X	X		X			X															X						

SOC-210	Population and Demography	Workers' influx	Minimization	Have in place a grievance mechanism including contact information where local community can file grievances / complaints about workers' influx in the area;		X			X	X	X	X		X			X													X							
SOC-211	Population and Demography	Workers' influx	Minimization	Prepare and enforce a workers' code of conduct with indications of the behavior to be followed in interactions with local communities.		X			X	X	X	X		X			X													X							
SOC-212	Population and Demography	Workers' influx	Minimization	Create outreach programs to inform local community about the Project's potential influx of workers.		X			X	X	X	X		X			X													X							
SOC-213	Population and Demography	Workers' influx	Minimization	Contractor to hire workers through recruitment offices and avoid hiring at the gate to discourage potential arrival of job seekers		X			X	X	X	X		X			X													X							
SOC-214	Population and Demography	Workers' influx	Minimization	Widely communicate (at the local level) the Project's local hiring to encourage the employment of locals		X			X	X	X	X		X			X													X							
SOC-215	Population and Demography	Workers' influx	Minimization	Appoint prohibition signs on the Project fences for trespassing or setting up dwellings or markets at the Project gate		X			X	X	X	X		X			X													X							
SOC-216	Population and Demography	Workers' influx	Minimization	Prohibit purchasing goods and services at the Project gate in order to discourage local people from setting up such services. Include this in the Code of Conduct		X			X	X	X	X		X			X													X							
SOC-217	Population and Demography	Workers' influx	Minimization	Workers' camp to include electricity, wastewater disposal and septic systems, dedicated healthcare facilities;	X				X					X			X													X							
SOC-218	Population and Demography	Workers' influx	Minimization	All Project workers to use the Project medical facilities in the event of a work-related incident, which will help to alleviate pressure on public health centres.		X			X	X	X	X		X			X													X							
SOC-219	Population and Demography	Workers' influx	Minimization	Develop worksite procedures on personal water and electricity consumption		X			X	X	X	X		X			X													X							
SOC-220	Population and Demography	Workers' influx	Minimization	Minimize interaction between local communities and Project employees by establishing a closed camp for non-local Project workers in which entertainment is provided (internet, TV, 'wet' camp), by minimizing the Project workers' time spent in communities, and by organizing transport directly to and from the worksite for local and foreign workers.		X			X	X	X	X		X			X													X							
SOC-221	Population and Demography	Workers' influx	Minimization	Provision of training and socialization of Code of Conduct for workers in local language(s);		X			X	X	X	X		X			X													X							
SOC-222	Population and Demography	Workers' influx	Minimization	Ensure workers, particularly workers coming from other parts of Kazakhstan and abroad are fully aware of the local cultures, norms and customs trough an intercultural training		X			X	X	X	X		X			X													X							
SOC-223	Economy and Employment	Demand for workforce	Minimization	Develop and disseminate the Labour Management Plan (LMP) to all staff responsible for managing the construction site and to all sub-contractors working on the Project.		X			X	X	X	X		X			X														X							
SOC-224	Economy and Employment	Demand for workforce	Minimization	Prepare/ review if already available, disseminate to all workers of all tiers of contractors and enforce the Code of Conduct. The CoC commits all persons engaged by the contractor, including sub-contractors and suppliers, to IFC PS2 Standard..		X			X	X	X	X	X				X														X							
SOC-225	Economy and Employment	Demand for workforce	Minimization	The CoC will cover the following element: a) Human Resources Policy b) Working relationship c) Working conditions and terms of employment d) Workers organisations e) Non- discrimination and equal opportunity f) Entrenchement g) Grievance mechanism h) Child labour and forced labour i) Occupational health and safety j) Non-employee workers/ migrant workers k) Supply chain. l) Gender-based violence		X			X	X	X	X	X				X															X							
SOC-226	Economy and Employment	Demand for workforce	Minimization	Develop Project-specific Procedures for each topic listed in point 1. The document Management System Tools with Step-by Step Guide by the IFC can be taken as an example to develop these procedures		X			X	X	X	X	X				X														X							
SOC-227	Economy and Employment	Demand for workforce	Minimization	Include in the Code of Conduct the provision of specific monthly trainings on the use of force, the application of the VPSH for security personnel and GBV and Sexual Harassment for all persons engaged by the contractor, including sub-contractors and suppliers		X			X	X	X	X	X				X														X							
SOC-228	Economy and Employment	Demand for workforce	Minimization	Informing workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted.		X			X	X	X	X		X	X	X	X														X							
SOC-229	Economy and Employment	Demand for workforce	Minimization	Adopting a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence;		X			X	X	X	X		X	X	X	X														X							
SOC-230	Economy and Employment	Demand for workforce	Minimization	Write clear defined policies and procedures for age verification		X			X	X	X	X	X				X														X							
SOC-231	Economy and Employment	Demand for workforce	Minimization	Draft a remediation plan in case children are found out unknowingly employed (fake IDs)		X			X	X	X	X	X				X														X							
SOC-232	Economy and Employment	Demand for workforce	Minimization	Communicate child policies to suppliers		X			X	X	X	X	X	X			X														X							
SOC-233	Economy and Employment	Demand for workforce	Minimization	Define clearly workers' freedom in employment contract		X			X	X	X	X		X			X														X							
SOC-234	Economy and Employment	Demand for workforce	Minimization	Provide contracts to workers in their language (direct and contracted workers)		X			X	X	X	X		X			X														X							
SOC-235	Economy and Employment	Demand for workforce	Minimization	Provide training to all workers to present their rights		X			X	X	X	X		X			X														X							
SOC-236	Economy and Employment	Demand for workforce	Minimization	Provide employment contracts to all workers in their language - direct or contracted. Specify in contacts that migrant workers must not pay any recruitment fee and that all cost are the employer's responsibility		X			X	X	X	X		X			X														X							
SOC-237	Economy and Employment	Demand for workforce	Minimization	Define and enforce policy regarding use of employment agencies and expectations. If employment agencies are used, audit relationship between the agency and the workers		X			X	X	X	X		X			X														X							
SOC-238	Economy and Employment	Demand for workforce	Minimization	Prohibit in your Human resources Policy any retention of worker's identity documents by agencies or contractors/subcontractors.		X			X	X	X	X		X			X														X							
SOC-239	Economy and Employment	Demand for workforce	Minimization	Ensure all contractors and subcontractors, including lower-tier ones, are contractually bound to adhere to these standards, with clear penalties for non-compliance		X			X	X	X	X	X	X			X														X							
SOC-240	Economy and Employment	Demand for workforce	Minimization	CoC to indicate behavior to be followed in interactions with local communities.		X			X	X	X	X		X			X														X							
SOC-241	Economy and Employment	Demand for workforce	Minimization	The code of conduct will provide rules in terms of behaviour within the camp, behaviour when outside of the camp, and interactions with local communities		X			X	X	X	X		X			X														X							
SOC-242	Economy and Employment	Demand for workforce	Minimization	Ensure all contractors and subcontractors contracts (including with lower-tier contractors) include explicit obligations to comply with IFC PS2/EBRD PR2 and Project 's CoC, Project's Management Plans and HR policy and procedures (including working conditions, non-discrimination, labour rights, and grievance mechanism).		X			X	X	X	X	X	X			X														X							
SOC-243	Economy and Employment	Demand for workforce	Minimization	Implement audits to check contractors, subcontractors and lower tier contractors' compliance with PS2 by reviewing documentation such as employment contracts, payroll records, incident logs, training attendance, grievance logs and conducting interviews with workers to verify compliance		X			X	X	X	X	X	X			X														X							
SOC-244	Economy and Employment	Demand for workforce	Minimization	Require contractors/subcontractors/lower-tier contractors to establish (or have access to) a worker grievance mechanism that meets PS2 standards, and ensure that complaints are addressed promptly and transparently		X			X	X	X	X	X	X			X														X							
SOC-245	Economy and Employment	Demand for workforce	Minimization	Ensure workers are aware of their rights including: - their right to join workers' organisations; - rights related to wages, benefits, working conditions and the temporary nature of the activity by including these topics in the induction training and delivering an informational brochure/ booklet with this information upon hiring. - All HR related communications will be dispatched in written form during the hiring process in the language of choice of workers.		X			X	X	X	X		X			X														X							
SOC-246	Economy and Employment	Demand for workforce	Minimization	The Grievance Mechanism covering Project workers (including all Contractors and Subcontractors workers and Project related personnel) shall: - Provide an effective safe space for expressing concerns and achieving remedies for the Project workforce. - Promote a mutually constructive relationship between the Project workers and Project managers. - Address workers concerns. - Provide feedback about the outcome of a Grievance Investigation, including decision on the complainants. - Provide protection to Complainants against any form of retaliation for reporting a grievance; - Include system for capturing gender-based violence (GBV), sexual exploitation, and workplace sexual harassment complaints. Female grievances officers ('confidants') will be hired for female members of the workforce.		X			X	X	X	X		X			X														X							

SOC-247	Economy and Employment	Demand for workforce	Minimization	Inform all workers and sub-contractor workers about the Grievance Procedure and on how to file grievances		X			X	X	X	X		X			X														X						
SOC-248	Economy and Employment	Demand for workforce	Minimization	Employ local workers to the extent possible. Encourage contractors and subcontractors to employ locally as well to the extent possible through applicable measures such as perform training for local workers, and/or mapping of local competences and skills that could be used during the construction phase.		X			X	X	X	X		X			X														X						
SOC-249	Economy and Employment	Workers' Accomodation	Minimization	Ensure that the accommodation provided to workers is compliant with the Guidance note by IFC and EBRD "Workers' accommodation: processes and standards."	X				X				X				X															X						
SOC-250	Economy and Employment	Workers' Accomodation	Minimization	Ensure availability of food and water, the capacity of the local sewage, water distribution and waste systems		X			X	X	X	X		X			X															X						
SOC-251	Economy and Employment	Workers' Accomodation	Minimization	Ensure that the Project's grievance mechanism boxes are distributed across all Workers' accommodation		X			X	X	X	X		X			X															X						
SOC-252	Economy and Employment	Workers' Accomodation	Minimization	Collaborate with project managers and relevant stakeholders to understand the workforce size, composition, and specific needs		X			X	X	X	X		X			X															X						
SOC-253	Economy and Employment	Workers' Accomodation	Minimization	The location criteria of the workers' accommodation camp considered the following: Includes prevention measures in terms of exposure to key natural hazards (e.g., flood zones or major wadis) as well as locations that can provide habitats for potential disease vectors such as mosquitoes, flies and others (e.g., stagnant waters); Located at a reasonable distance from the construction site to avoid impacts of noise, dust and other emissions; Acquiring adequate materials with sufficient maintenance (kept in good repair, clean and free from rubbish and other refuse); and, Includes heating, air-conditioning and ventilation, which is appropriate for the climatic conditions and provide workers with a comfortable and healthy environment.	X				X	X	X	X	X				X																	X						
SOC-254	Economy and Employment	Demand for workforce	Avoidance	Aktas Energy LLP will ensure that the Contractor will put in place transparent and fair recruitment procedures, that monitor non-discrimination and equal opportunities and that are clearly understandable and accessible to all potential candidates.		X			X	X	X	X	X				X														X						
SOC-255	Economy and Employment	Demand for workforce	Avoidance	Aktas Energy LLP will ensure that the Contractor will comply with national and international laws, conventions and lenders' requirements on labour conditions to be maintained through the life of the Project.		X			X	X	X	X	X				X														X						
SOC-256	Economy and Employment	Demand for workforce	Avoidance	Aktas Energy LLP will ensure that the Contractor will hire workers through recruitment offices and avoid hiring "at the gate" to discourage spontaneous influx of job seekers.		X			X	X	X	X	X				X														X						
SOC-257	Economy and Employment	Demand for workforce	Avoidance	The Contractor will guarantee the wellbeing of service providers, including decent working conditions, adequate salaries, correct working hours and PPE in case they exposed to hazardous construction works at WPP site and OHTL site.		X			X	X	X	X		X	X	X	X														X						
SOC-258	Economy and Employment	Demand for workforce	Avoidance	Violating child labour laws through illegal employment of children below the age of 18 years will be forbidden.		X			X	X	X	X		X	X	X	X														X						
SOC-259	Economy and Employment	Demand for workforce	Avoidance	Smoking, sparks and open flames will be forbidden near storage or blasting sites.		X			X					X	X	X	X						X														
SOC-260	Economy and Employment	Demand for workforce	Avoidance	Detonators and explosive materials will be stored separately until use.		X			X					X	X	X	X						X														
SOC-261	Economy and Employment	Demand for workforce	Minimization	Explosives will be handled only by workers who have been properly trained in explosive and blasting management.		X			X					X	X	X	X						X														
SOC-262	Economy and Employment	Demand for workforce	Minimization	A strategy for the employment of local workers will be defined. This strategy will be disclosed in line with the provisions included in the SEP to ensure that local communities in the proximity of the sites are informed on employment positions available and methods to express interest. Based on outcomes of this plan, the Client will implement a training programme for the local workforce to enable them to take advantage of the opportunity.		X			x	x	x	x		x	x	x	X															x						
SOC-263	Economy and Employment	Demand for workforce	Minimization	Aktas will maintain the commitment of a local employment rate of 20% throughout the pre-construction and construction phases and to increase the representation of local women in various skilled positions by 2% per quarter over a one-year period during construction.		X			x	x	x	x	X				X														x						
SOC-264	Economy and Employment	Demand for workforce	Minimization	Aktas will ensure that the Contractor will adopt and maintain human resources policies and management systems or procedures aligned with the requirements of EBRD PR2. These policies and procedures will have to be clear and accessible to workers, and in the main language(s) spoken by the workforce.		X			X	X	X	X	X				X														X						
SOC-265	Economy and Employment	Demand for workforce	Minimization	Clear and transparent information on wages, benefits and working conditions will be provided to all workers, following local labor legislation.		X			X	X	X	X	X				X														X						
SOC-266	Economy and Employment	Demand for goods, materials and services (supply chain)	Avoidance	All construction raw materials, products and equipment will be exclusively sourced from verified suppliers, which are compliant with minimum environmental and social standards. The Contractor will – throughout the whole construction phase – assess the existence, the adequacy and the effectiveness of the suppliers' environmental and social management systems and processes.		X			X	X	X	X	X				X												X								
SOC-267	Economy and Employment	Demand for goods, materials and services (supply chain)	Avoidance	Include in a clause in the supplier contract restricting the use of child labour and forced labour and impose economic penalties in case of occurrence.		X			X	X	X	X	X				X												X								
SOC-268	Economy and Employment	Demand for goods, materials and services (supply chain)	Avoidance	The use of suppliers whose activities are associated to high environmental impacts will be avoided. Preference will be given to responsibly sourced raw materials, and to local suppliers.		X			X	X	X	X	X				X												X								
SOC-269	Economy and Employment	Demand for goods, materials and services (supply chain)	Minimization	Conduct regular labour audits to the suppliers of the Project.		X			X	X	X	X	X				X																				
SOC-270	Cultural Heritage	Damage of cultural resources	Minimization	Mark and fence all sensitive areas before any construction begins. Ensure installing high-visibility fencing, stakes or flagging tape with a 40 meters buffer around each cultural object. Install visible signage identifying the fenced areas as a "Cultural Heritage Protection Zone" and interdict access to this area.		X			X	X	X	X		X			X																X			
SOC-271	Cultural Heritage	Damage of cultural resources	Minimization	Hire a qualified archaeologist on site during all ground-disturbing works in the vicinity of heritage areas, ensuring full-time supervision during active earthworks in culturally sensitive areas. The on-site archaeologist has authority to halt work if an artifact or feature is observed and will coordinate with site managers to avoid any disturbance of such finds.		X			X	X	X	X	X				X																X			
SOC-272	Cultural Heritage	Damage of cultural resources	Minimization	Regarding intangible cultural heritage (ICH), engage with local communities, especially village elders who are custodians of cultural knowledge.		X			X	X	X	X		X			X															X			
SOC-273	Cultural Heritage	Damage of cultural resources	Minimization	Regarding ICH, design the Project access roads and Project activities to avoid or minimize disturbance to culturally significant areas identified through consultations and cultural mapping. This includes respecting seasonal migration routes and pastoral activities.	X							X		X			X															X			
SOC-274	Cultural Heritage	Damage of cultural resources	Minimization	Should an artefact be identified, all works must stop, and the Chance Find Procedure should be applied.		X			X	X	X	X		X	X	X	X														X			
SOC-275	Cultural Heritage	Damage of cultural resources	Minimization	The CHMP will be disseminated to all staff responsible for managing the construction site and to all sub-contractors working on the Project.		X			X	X	X	X		X	X	X	X														X			
SOC-276	Cultural Heritage	Damage of cultural resources	Minimization	Strictly adopt the Chance Find Procedure developed under the CHMP		X			X	X	X	X		X	X	X	X														x			
SOC-277	Cultural Heritage	Damage of cultural resources	Minimization	The Chance Find Procedure should be distributed to all subcontractors and suppliers and to be implemented if a finding of cultural or archaeological elements occurs during the site clearance;		X			X	X	X	X		X	X	X	X														X			
SOC-278	Cultural Heritage	Damage of cultural resources	Minimization	The Chance Find Procedure should involve authorities responsible for archaeological and cultural protection.		X			X	X	X	X		X			X														X			
SOC-279	Cultural Heritage	Damage of cultural resources	Minimization	Mark and fence all sensitive areas before any construction begins. Ensure installing high-visibility fencing, stakes or flagging tape with a 40 meters buffer around each cultural object.		X			X	X	X	X		X			X														X			
SOC-280	Cultural Heritage	Damage of cultural resources	Minimization	Install visible signage identifyi ng the fenced areas as a "Cultural Heritage Protection Zone" and interdict access to this area.		X			X	X	X	X		X			X														X			
SOC-281	Supply Chain	Supply-chain screening	Minimization	Develop a risk assessment and pre-screening model to support supply chain due diligence that include mapping of supply chain actors (Tier 1), identification of materials and human rights risks, integration with supplier selection and procurement process, planning for remediation and ongoing monitoring		X			X	X	X	X		X			X												X								
SOC-282	Supply Chain	Supply-chain screening	Minimization	Map existing and potential Tier 1 suppliers, focusing on those directly linked to project activities and critical materials		X			X	X	X	X		X			X												X								
SOC-283	Supply Chain	Supply-chain screening	Minimization	For high-risk raw materials, conduct enhanced traceability and supply chain mapping beyond Tier 1 – extending to Tier 2 and Tier 3 suppliers where feasible.		X			X	X	X	X		X			X												X								
SOC-284	Supply Chain	Supply-chain screening	Minimization	Conduct supplier risk prioritisation and screening by using selected criteria such as geographic location, material type, labour practices and environmental footprint.		X			X	X	X	X		X			X												X								
SOC-285	Supply Chain	Supply-chain screening	Minimization	Set up tailored standards based on risk-based approach of the services for qualification of the suppliers (e.g. alignment with Fair Recruitment Principles in cases of Labour Contractors, OECD CAHRA Guidelines for high-risk raw materials)		X			X	X	X	X		X			X												X								
SOC-286	Supply Chain	Responsible Procurement Practices	Minimization	Develop or review procurement policies and procedures ensuring they explicitly integrate principles of respect for human rights and environmental protection.		X			X	X	X	X		X			X												X								
SOC-287	Supply Chain	Responsible Procurement Practices	Minimization	Align procurement practices with supply chain due diligence frameworks, including risk identification, selection of suppliers,mitigation and monitoring mechanisms.		X			X	X	X	X		X			X												X								
SOC-288	Supply Chain	Responsible Procurement Practices	Minimization	Embed human rights (at minimum rights protected under Universal Declaration of Human Rights and Fundamental Principles and Rights at Work) and environmental safeguards into supplier relationship through contractual clauses, supplier codes of conduct and pre-qualification criteria.		X			X	X	X	X		X			X												X								
SOC-289	Supply Chain	Responsible Procurement Practices	Minimization	Deliver training and awareness sessions for Project relevant staff and suppliers focusing on ethical sourcing, labour rights, environmental standards and grievance mechanisms.		X			X	X	X	X		X			X												X								

SOC-290	Supply Chain	Implement Heightened Due Diligence for BES and Wind Tribune Materials	Minimization	Implement Due Diligences in the minerals/wind turbine supply chain following the OECD Due Diligence Guidance for Responsible Supply Chain, in order to identify and prevent or mitigate any risks of adverse impacts associated with mineral extraction conditions and supplier relationships operating in conflict-affected or high-risk areas for pre-selected suppliers		X			X	X	X	X	X				X												X									
SOC-291	Supply Chain	Implement Heightened Due Diligence for BES and Wind Tribune Materials	Minimization	Conduct mitigation activities where needed for identified adverse impacts		X			X	X	X	X	X				X											X								
SOC-292	Supply Chain	Implement Heightened Due Diligence for BES and Wind Tribune Materials	Minimization	Ensure selected suppliers have strong management system in place to identify and mitigate adverse impacts (these processes includes but not limited to policy and procedures elimination of child labour and forced labour, child labour remediation plans, traceability maps, risk assessment and human rights risk assessment processes, monitoring and verifications plans and programs)		X			X	X	X	X	X				X												X									
SOC-293	Supply Chain	Implement Heightened Due Diligence for BES and Wind Tribune Materials	Minimization	Develop and implement a dedicated audit and review system for the company SANY Group based on the data emerged from the first screening		X			X	X	X	X	X				X											X								
SOC-294	Supply Chain	Implement Heightened Due Diligence for BES and Wind Tribune Materials	Minimization	Develop and implement an extensive audit and review system for contractors, subcontractors and suppliers to ensure that the requirements in terms of protected rights are effectively implemented.		X			X	X	X	X	X				X											X									
BIO-01	Biodiversity Management	Protected Areas	Minimization	In the absence of a formal Management Plan for the Zhusandala (the Project Site is entirely within this reserve) and Andasay State Reserved Zones, liaise with the Forestry and Wildlife Committee of the Ministry of Ecology, Geology and Natural Resources, so to ensure that the Project aligns with any government-recognised management plans for the area. Additionally collaborate with the Reserve authority to investigate the feasibility of establishing supplementary programmes aimed at promoting and enhancing the conservation and effective management of the area. Further details will be provided in the next revision of the Biodiversity Management Plan and in the Biodiversity Action Plan, as soon as specific information becomes available. Support package to the Andasay State Reserve to enhance management for the goitered gazelle (PBF) as an offset to any indirect impacts to life-cycle in the Project area. Achieve a No Net Loss for the area of direct habitat loss in the Zhusandala Reserve by carrying out habitat improvements elsewhere in the reserve. Approximately 110 Ha of tulip habitat will be lost within the reserve area.	X			X	X	X	X	x	X			X																					X	
BIO-02	Biodiversity Management	Nesting/breeding periods management	Avoidance	Forbid any vegetation clearance during the nesting/maternity period of birds and bats (March - late July/early August). During the same period ground disturbance activities will also be limited to avoid disturbing ground-nesting species. Pre-clearance inspection surveys must be undertaken by a suitably experienced ecologist. These surveys will identify any potential nests in the vegetation-removal area and then establish suitable "no-go" buffers around these nests, to prevent the nest being destroyed or disturbed. Buffers will be species specific and determined in consultation with ACBK, based on the species identified. As an example, appropriate disturbance distance buffers in the breeding period for Golden Eagle Aquila chrysaetos is 750-1000m, for Marsh Harrier Circus aeruginosus is 300-500m (Disturbance Distances in selected Scottish Bird Species – NatureScot Guidance | NatureScot). For blasting works, the same approach will be applied, considering that for every doubling of distance, the sound level (single point source) reduces by 6 decibels (dB). Further specific instructions will be integrated in the next revision of the Biodiversity Management Plan.		X			X	X	X	X		X			X																				X	
BIO-03	Biodiversity Management	Areas with high ecological value	Minimization	Iterations of turbine layouts have been designed to, as far as is possible, avoid locations of relatively high ecological value. During the habitat surveys in April/May 2023 and April 2025, five main types of habitats were identified across Project area: • Xerophytic rocky low mountains; • Outcrops of flat granite slabs; • Saxual valley forests; • Sagebrush and sagebrush deserts on gently undulating plains; and • Gently sloping solonchak depressions on the plains. Avoidance/minimization of impacts within Critical and Natural Habitats Natural Habitats and Critical Habitats will be protected from unintentional disturbance during construction. Temporary demarcation will be provided by highly visible wooden sticks (50 cm high) planted into the ground and/or flagging tape, while a more permanent fencing, such as solid timber hoardings, will be provided in areas of sensitivity or subject to higher risk of disturbance. In this case appropriate signage will be installed to make the area recognizable by operators and to comply with H&S regulations and plans. Awareness among employees and contractors working on site about the protected species/habitats potentially present in the area will be improved, to ensure constant monitoring and promote actions to be taken if wildlife is encountered. In particular: • Facilities, especially temporary facilities, will be placed in Modified Habitats, as far as is possible. • All non-essential access roads will be closed after construction. • Public access to the remaining access/service roads will be limited. • Pre-clearance checks to identify sensitive receptors will be carried out (see next two measures). Specific instructions will be integrated into an updated section of this Biodiversity Management Plan. The CEMP will include procedures for pollution prevention guidelines including dust suppression and traffic management to reduce indirect impacts on natural habitat areas. The next iteration of this BMP will include a fully developed No Net Loss/Net Gain Plan to establish how natural habitats will be protected and enhanced. Habitats will be restored and/or enhanced in other locations to offset any unavoidable losses from direct habitat loss from WTG pads, roads etc. Restoration will be undertaken in a phased manner with the intention of creating a matrix of habitats in differing successional states	X	X			X	X	X	X		X			X																				X	
BIO-04	Biodiversity Management	Birds – Pre-clearances surveys (threatened species).	Minimization	A dedicated raptor monitoring survey will be conducted prior to construction or ground clearance works during the period February to July 2026. Surveys for Black-bellied Sandgrouse and other ground nesting birds will be undertaken from March to June 2026. Surveys for migratory birds will be completed in Spring and Autumn during the construction period. A pre-construction walk-over survey will be undertaken of all working areas to check for the presence of threatened species ground nesting birds which would be at risk from construction related impacts. Surveys will be completed by an appropriately qualified ecologist and surveys will be undertaken in the hours after sunrise (up to 10:00). The surveyors will aim to identify behaviour indicative of breeding activity (e.g. carrying food / nesting material / faecal sacs, presence of nests, eggs or chicks (both nidifugous and nidicolous). Where nests are found they will be recorded in full and their locations mapped, with the data transferred to Excel master sheets and Google Earth. Mapping will then be circulated to the project team along with details of a works exclusion zone. Exclusion zones will be dependent on the species of bird nesting along with its conservation status and be agreed with the qualified project ecologist team. Construction will be limited within an agreed buffer around active raptor nests. Unless otherwise determined a 500m buffer zone will be employed. If checks locate active nesting raptors within 500m of work areas works will be delayed in accordance with an encounter protocol that will be developed in the next iteration of this BMP.		X			X	X	X	X	x	X			X																				X	

BIO-05	Biodiversity Management	Herpetofauna, small mammals (threatened species) - Pre-clearance surveys and minimization of impacts.	Minimization	Seven herptiles were recorded during 2023 surveys. The key finding is the relatively high abundance of the Steppe Tortoise Testudo horsfieldi with on average 10 sightings per day during the survey period. The species is IUCN VU and a PBF. In order to minimize mortality, an ecologist will perform a site recognition in the footprint area, to identify and relocate fauna species (not earlier than 7 days before site clearance). The survey will focus on fauna species with limited mobility (e.g., reptiles such as Steppe Tortoise and amphibians) that cannot move ahead of construction as well as the presence of nests. If any of these species are observed, they will be collected by the ecologist and translocated to undisturbed and suitable local habitats identified. Further measures will be implemented for Testudo horsfieldii, with the aim of minimising the impact on hibernating individuals and avoiding/minimising the loss of species nests (nesting typically occurs from late May until early September.) These measures will take into account the environmental challenges posed by the project site. Instruction regarding collection and translocation techniques and suitable translocation sites will also be identified in future revisions of thisPlan. Adaptive management will be emlloyed to determine whether a translocation programme is necessary or whether barrier controls and dispersal into adjacent areas will be sufficient. Employ temporary barriers etc to prevent herptiles entering construction areas.		X			X	X	X	X	x	~~X~~			X																						X	
BIO-06	Biodiversity Management	Biodiversity management in hibernation periods	Minimization	Minimize disturbance during hibernation periods (threatened species) Plan the start of any vegetation clearance and ground disturbance activities at the end of hibernation and before the breeding season to avoid disturbing ground-nesting species and species with limited mobility, such as reptiles and amphibians. Conduct a specific recognition survey in the construction area, to recognize the presence of any hibernated species to be sure that no individuals are present underground by searching for burrows, hibernacula and refugia. Specific instructions will be integrated in a the next revision of the BMP.		X			X	X	X	X		X			X																						X	
BIO-07	Biodiversity Management	Flora site recognition (threatened species) - Pre-clearance surveys and minimization of impacts	Minimization	An expert ecologist will perform a site recognition in the footprint area to check the presence of flora and create an inventory of abundance of individuals belonging to floristic threatened species – especially (Tulipa regelli) (Critical Habitat trigger) and (T. biflora), directly impacted by the Project. From this a Rare Plants Management Plan will be developed in this BMP. Upon this reconnaissance, the following two measures will be applied: • In-situ conservation where possible (e.g. micro-site facilities). Sites will be fenced and established as no-go areas for contractors to avoid disturbing threatened species. • Viable plants may be translocated to the appropriate sites. The identification and flagging of individuals to be translocated will take place preferably during the flowering season of the species, while the translocation of individuals be performed during the dormant stage to minimize stresses to the plant. The data regarding date, location, source population, and number of individuals collected and translocated will be recorded. The Rare Plant Management Plan will be included in a new revision of this BMP as soon as detailed construction schedule will be available and species have been inventoried. Collection and translocation techniques and suitable translocation sites will also be identified within the plan. It will be necessary to find receptor sites that have abiotic conditions that closely mimic the donor locations. Furthermore, receptor sites should be confirmed to be free of any protected species in their existing state.		X			X	X	X	X	x	~~X~~			X																						X	
BIO-08	Biodiversity Management	All fauna and flora species - Workers' biodiversity awareness raising	Minimization	• Establishing a proper code of conduct and awareness raising / training of personnel. • Biodiversity training will cover all relevant mitigation requirements in relation to biodiversity applicable to workers. • Sensitive species will be included in the site induction for all operational staff. During this induction, additional control measures will be discussed, including allowing animals to move around the site, not chasing after them in vehicles or approaching them on foot, and what to do if they observe breeding birds within their works areas. • Prohibit hunting of any wildlife at any time and under any condition by workers onsite. • Prohibit collection of any flora species at any time and under any condition by workers onsite. • Restrict activities to allocated areas only, including movement of workers and vehicles to allocated roads within the site and prohibit off-roading to minimize disturbances. Produce a faunal handling procedure for dealing with any transport injured animals (see also BIO28).		X			X	X	X	X	x	X			X																						X	
BIO-09	Biodiversity Management	Biodiversity management during nesting/breeding periods	Minimization	Minimize disturbance during nesting/breeding periods. In case vegetation removal cannot be avoided during bird and bats breeding season, have nesting birds and bat roost presence verified by a qualified ecologist within 48 hours from vegetation clearance. If breeding birds are discovered, then works will be postponed in that area until the breeding cycle is complete (this may take up to three weeks). If permanent or temporary roost are observed in the areas to be cleared, the Project will take action to allow the bats to leave on their own at sundown but keep them from returning at sun set (e.g., remove or obstruct the roost, close the roost entrance). This will only be done if no dependent young are present. Specific instructions will be integrated in the next revision of the Biodiversity Management Plan.		X			X	X	X	X	x	X			X																						X	
BIO-10	Biodiversity Management	Flora seed collection (threatened species).	Minimization	Seed collection will be performed for endemic/rare/protected flora species, identified within the Project AoI (Tulipa regelii, Tulipa biflora, Tulipa alberti, Tulipa borszczowii, Tulipa greigii). The seed collection and conservation will follow the best practice indicated by the Millenium Seed Bank. Seeds collected will be separately stored for each species and sub population using clearly identifiable codes and will be donated to the most appropriate Seed Bank in the area for storage and scientific research. Specific instructions will be integrated into the Rare Plant Management Plan section to be developed in this BiodiversityManagement Plan.		X			X	X	X	X	x	~~X~~			X																						X	
BIO-11	Biodiversity Management	Mortality management in deep excavations.	Minimization	Cover or fence all the deep excavations to prevent the access of wildlife and people while not working (including at night). Open trenches and other excavations will be checked daily (even more frequently during hot summer days) to identify any entrapped mammals. Rescue of any entrapped animals will be undertaken with extra care to minimize animal stress and the risk of injury. For trenches that will need to be left open for a considerable time, install slopes or other escape measures for small animals at places that are not fenced off. Maintain a log of records of any animal entrapments.		X			X	X	X	X		X			X																						X	
BIO-12	Biodiversity Management	Birds' collision, mortality and electrocution	Minimization	At all temporary infrastructure, install window decals or non-reflective window covering to reduce the potential for bird window strikes. In addition, bird-friendly glasses or bird bollards will be installed on glass to avoid reflective glass that birds confuse with habitat.		X			X	X	X	X		X			X																				X	

BIO-13	Biodiversity Management	Large Mammals (threatened species) – On going monitoring.	Minimization	Carry out ongoing monitoring to assess any impacts generated by the Project and thus identify specific measures additional to put in place for goitered gazelle (Gazella subgutturosa – VU) and argali (Ovis ammon karelini NT and included in the RDB of Kazakhstan) that were identified as having ranges which overlap with the Project Area. Specific instruction will be integrated in the next revision of the Biodiversity Management Plan. Already turbine layouts have been iterated to remove them from the identified argali habitat area as far as is possible. Concept mitigations already established are: • Prohibit the movement of vehicles and other equipment outside designated roads, and adhere to speed limits. Utilise a hard-stop disciplinary procedure for enforcement. Minimise night driving by restrictions to reduce nighttime vehicle movements to an absolute minimum. Enforce road speed limits and use physical speed calming measures especially near key areas (watering points, crossings, lambing/kidding areas and watchpoints). Use road/gate permit systems to reduce access to non-project related traffic to restrict poaching activity. • Minimize the number of service roads used for construction and then for maintenance of the wind farm complex. Close access to the road network within the wind farm, allowing their use only for wind farm maintenance. Potential use of video surveillance systems. • Control impulsive noise control measures. Impulsive noise generation to be restricted to day-time working hours only; Impulsive events should be pre-notified and kept to short durations. Avoid repeat impulsive noise events near key areas (see above). • A Fauna Handling and Rescue Procedure will be prepared in case any fauna species are injured during the construction activities. All animal impacts/near-misses to be reported and logged. • Install fences to prevent animals accidentally entering waste storage areas and road-salt storage areas. Fences will be designed and use materials that are not harmful to wildlife. Organic wastes generated to be fully contained and litter wastes to be adequately secured. • Monitoring of the Argali (e.g. radiotracking) would be undertaken throughout the operation of the Project to inform any remedial measures that need to be put into place. Monitoring will include compliance monitoring on traffic management, waste management and excavations management. Furthermore, wildlife response monitoring shall be carried out replicating baseline surveys to assess for reduced or changed activity patterns that may need to trigger further mitigation responses. Incident monitoring will take place with mandatory reporting of vehicle strikes, entrapped animals and poaching reports. Post-construction monitoring shall take place for a period of 2 years using transects and camera traps to assess if there have been any		X			X	X	X	X		X			X																						X	
BIO-14	Biodiversity Management	Bats	Minimization	Five species of bat have been identified by static and mobile bat detector surveys. These are • Common pipistrelle and its sub-species Turkestan pipistrelle • Noctule • Parti-coloured bat • Bobrinski's serotine • European free-tailed bat Bobrinski's serotine is identified as a PBF. Construction mitigation measures to include: • Avoid vegetation clearance during bat maternity period (March - late July/early August). • Pre-clearance checks by a suitably experienced ecologist. • Activities generating high noise levels to start outside the breeding and rearing periods where possible. • Night work in proximity to natural habitats and sensitive areas will be avoided from 8pm to 6 am, to reduce impacts to nocturnal fauna species. • Where appropriate, the installation of acoustic barriers could help minimize the impact of noise emissions and vibration. • Measures to minimize noise emissions from facilities and vehicles. • A lighting design to avoid emission of light on sensitive areas		X			X	X	X	X		X			X																						X	
BIO-15	Biodiversity Management	Restoration of temporarily degraded/disturbed habitats.	Restoration	Recover degraded and disturbed areas during the construction phase by planting native flora species. In addition, consider to plant threatened flora species to increase the value of habitats and promote the conservation of threatened flora species. This action will contribute towards the No Net Loss/Net Gain targets of the Project. All recovered areas must be maintained, and specific instruction integrated in a future revision of the BMP, as soon as specific information will be available with the goal of Implementing a monitoring plan, keeping track of the restoration activities, evaluating their effectiveness, and implementing a maintenance plan.		X			X	X	X	X		X			X																						X	
BIO-16	Biodiversity Management	Critical and Natural Habitats	Minimization	A Critical and Natural Habitats map will be developed as part of the Biodiversity Action Plan (BAP). This will include calculating the associated permanent habitats loss of Critical and Natural Habitats for the entire Project AoI. Offsetting for the loss of Natural and Critical Habitats will be required to deliver No Net Loss (NNL) and Net Gain (NG). Full details of the measures to achieve no net loss will be provided in the final BAP.		X			X	X	X	X		X			X																						X	
BIO-17	Biodiversity Management	Restoration od excavated areas	Restoration	Restore the excavated areas as soon as feasible. Ensure that the excavated areas will be restored shortly after completion of construction activities using the most effective bio-engineering techniques (e.g., slope plantings, plant-root reinforced and anchored slopes). Specific instruction will be integrated in a section of a future revision of the Biodiversity Management Plan, as soon as specific information will be available.		X			X	X	X	X		X			X																						X	
BIO-18	Biodiversity Management	Water pits and ponds	Avoidance	Avoid generating water pits and ponds. Prevent any type of action that can lead to the generation of pits and ponds such as soil over consolidation and uncontrolled wastewater discharges. Proper runoffs and stream channelling design will prevent such risks. In case heavy rain leads to the generation of pits and ponds, promptly complete their removal by pumping the water by means of vacuum truck and disposing it of as per the Project specifications and requirements. Check such locations for breeding amphibians before draining (do not drain until young leave the pond or relocate) and daily checks/provision of ramps where banks are steep to minimise fauna falling and drowning.		X			X	X	X	X		X			X																						X	
BIO-19	Biodiversity Management	Freshwater habitats and species	Minimization	Severtsoy's Loach (Triplophysa sewerzowi), Ship Sturgeon (Acipernser nudiventris) and the fish species Schizothorax pseudoaksaiensis are all present in Lake Balkhash and the EAAA for Severtsoy's Loach and Ship Sturgeon respectively qualifies as Critical Habitat. Freshwater fauna natural movement. Where the Project crosses small seasonal streams and rivers, ensure the continuity of the water feature, so that the Project does not constitute a barrier to fish and freshwater species movement. They must be designed to avoid the interruption of waterways, modification of natural flow velocity, and formation of stagnant water.		X			X	X	X	X		X			X																						X	
BIO-20	Biodiversity Management	Freshwater habitats and species	Minimization	Minimize the potential pollution and sedimentation of the surface water The potential pollution of minor surface water bodies (e.g., seasonal water channels and rivers) will be avoided by avoiding pollutant runoffs with potential adverse effects: • the solid and liquid storage of products and waste on the construction site will be properly managed. • The fine-grained material should be stockpiled, covered, and placed 30 m from the drains or from the areas where seasonal water channels generated. • Any type of uncontrolled wastewater, oils, fuels, or chemicals spreading and runoff will be avoided. Design and install a station for properly collecting and managing the wastewater deriving from the construction site activities. During construction works, any degradation of freshwater habitats will be also avoided, in terms of sedimentation due to the crossing works on the banks or in stream. A Water and Groundwater Management Plan will be prepared and approved before the start of construction activities, to include the management of construction stormwater and wastewater, to ensure the protection of surface water resources and that the work is done correctly, safely, and in compliance with all regulations at every stage.		X			X	X	X	X		X			X																						X	
BIO-21	Biodiversity Management	Freshwater habitats and species	Restoration	Restoration of degraded freshwater. If any freshwater habitats are degraded by the construction activities, implement recovery actions for those habitats to maintain the form and function of these ecosystems. Specific instruction will be integrated in the next revision of the Biodiversity Management Plan, as soon as specific information will be available. The various restoration techniques include physical methods such as sewage interception, dredging, algae removal, and biological processes which include restoration of aquatic plants and/or bio-membrane techniques. All recovered areas must be maintained. Implement a monitoring plan, keep track of the restoration activities, evaluate their effectiveness, and should implement a maintenance plan. The plan must include control of water quality, freshwater biodiversity, and the maintenance of the ecological balance.		X			X	X	X	X		X			X																						X	
BIO-22	Biodiversity Management	Biodiversity management in breading periods	Avoidance	Avoid rearing and breading periods. The Contractor will plan activities generating high noise levels to start outside the breeding and rearing periods (depending on the species). Specific instruction will be integrated in the next revision of the Biodiversity Management Plan.		X			X	X	X	X		X			X																				X	

BIO-23	Biodiversity Management	Biodiversity lights impact	Avoidance	Avoid night work. Night work in proximity to natural habitats and sensitive areas will be avoided from 8pm to 6 am, to reduce impacts to nocturnal fauna species, especially bats. Utilise light shielding and bulb frequencies that reduce the impact of Artificial Light at Night (ALAN) on wildlife receptors. A light impact plan will be formulated in the next iteration of the BMP – see BIO23 and BIO24 for more details.		X			X	X	X	X		X			X																					X	
BIO-24	Biodiversity Management	Biodiversity lights impact	Avoidance	Avoid emission of light on sensitive areas The Contractor during the construction phase will: • avoid direct light to the adjacent natural areas. Direct lights solely onto work areas (i.e. use of spotlights instead of flood lights). For road and amenity lighting installations, light near and above the horizontal should normally be minimized to reduce glare and sky glow. • Avoid long wavelength light sources, higher than 700 nm, thus red lights. Red lights showed the strongest attraction of migrant birds. Avoid light with blue/violet (400 – 500nm) and ultra-violet wavelengths (< 400nm). Also, avoid using white LEDs that contain high short wave blue light components. Most wildlife species are sensitive to shortwave blue/violet light. This light also scatters more readily and contributes to skyglow.		X			X	X	X	X		X			X																					X	
BIO-25	Biodiversity Management	Biodiversity lights impact	Avoidance	Implement lighting solutions on the project site to reduce potential fauna attraction. The Contractor, during the construction phase, will: • plan the lighting to ensure the level of light required for the safety of the workers and the safety of the equipment while minimizing the luminous level. • Minimize activities at night, particularly where the project is in proximity to sensitive ecosystems. • When selecting luminaires ensure that suitable products are chosen and that their placement minimizes stray light and glare. Prefer dark-sky compliant full-shielded (i.e., full cut-off) light fixtures that direct light downwards below the horizontal plane and result in no up-light. • Keep glare to a minimum by ensuring that the main beam angle of all lights directed towards any potential observer is not more than 70°. Higher mounting heights allow lower main beam angles, which can assist in reducing glare. • When lighting vertical structures, direct light downwards wherever possible. If there is no alternative to up-lighting, then the use of shields, baffles and louvres will help reduce spill light around and over the structure to a minimum. • Use of full horizontal cut off luminaires installed at 0° uplift will, in addition to reducing sky glow, also help to minimize visual intrusion within the open landscape. • Use more warm-white light sources, as proposed by many organizations (The Dark and Quiet Skies consortium, the International Union for Conservation of Nature and United Nations Office for Outer Space Affairs). Use green "bird friendly" high-pressure sodium bulbs for lighting to reduce attraction to nocturnally migrating birds, particularly in locations were turning lights off is not possible. • Use amber spectrum bulbs (wavelength of 500 – 700nm), with minimal blue. Best is with light sources higher than 560nm. • Consider lumens (amount of light produced) rather than watts (amount of energy used) when selecting lighting and prefer low glare lighting fixtures to reduce excessive brightness and diffuse light. Low glare options can also require less energy. • Using non reflective surface treatments for project facilities. Reduce building contrast levels by using finishes with low reflectance levels and colors that match natural landscapes. Where possible, structures on the site will be dark in color to absorb light reflection. • Consider flashing lights instead of steady lights. Flashing lights are believed to be less attractive to birds than steady lights.		X			X	X	X	X		X			X																					X	
BIO-26	Biodiversity Management	Biodiversity sfety	Avoidance	Avoid fauna from accessing waste storage. The Contractor will install fences to prevent animals accidentally entering waste storage areas. Fences will be designed and use materials that are not harmful to wildlife. Visual, physical and/or audio deterrents will be installed to keep fauna and avifauna away from waste storage.		X			X	X	X	X		X			X																					X	
BIO-27	Biodiversity Management	Biodiversity sfety	Avoidance	Avoidance of any contact with wildlife. The Contractor will prohibit the workers from engaging themselves in any type of fishing, hunting and arrangement of traps for animals and birds. Any fauna species encountered will not be interfered with or disturbed until it moves on by itself. This includes temporary stopping operations as needed.		X			X	X	X	X		X	X	X	X																					X	
BIO-28	Biodiversity Management	Biodiversity sfety	Minimization	Employees and subcontractors' awareness raising. All employees and subcontractors will be trained and informed by the Contractor on the presence of conservation areas on site, on the biodiversity values, and how to behave in case of wildlife encounter. By partnering with agencies responsible for law control, the Contractor will strengthen law enforcement against illicit wildlife trade.		X			X	X	X	X		X	X	X	X																					X	
BIO-29	Biodiversity Management	Biodiversity sfety	Minimization	Minimize effects of road kills. A Fauna Handling and Rescue Procedure will be prepared and actioned by the Contractor in case any fauna species are injured during the construction activities. Species must be taken to the allocated to the vet for treatment. To reduce the likelihood that scavenging species be struck by vehicles, roadkill will be removed or relocated and reported as an environmental event. Moreover, all fauna deaths and real animal sightings in the project site and dumping areas will be reported. Project traffic routing will be reduced through areas of particular interest for endemic fauna species (birds, amphibians, mammals) wherever possible and during sensitive periods (nesting, reproduction).		X			X	X	X	X		X	X	X	X																					X	
BIO-30	Biodiversity Management	Biodiversity sfety	Minimization	Clean equipment. The Contractor will apply rigorous and appropriate control procedures at the site access points, to prevent accidental introduction of invasive alien species. Furthermore, the wheels of the trucks must be cleaned before the trucks leave the dumping area sites.		X			X	X	X	X		X	X	X	X																				X	
BIO-31	Biodiversity Management	Invasive species management	Minimization	In case alien (invasive) species are detected, they reduce or eliminate the impacts of established species by eradication, containment, exclusion, or population reduction through physical or biological control, according to the Invasive Alien Species Management Plan (IASMP). This plan will design and implement effective management programs appropriate for each species and habitats, incorporating best practices.		X			X	X	X	X		X	X	X	X																					X	
BIO-32	Biodiversity Management	Invasive species management	Minimization	Monitoring of spreading of alien (invasive) species. The contractor will adopt a monitoring plan, to verify on an annual basis the presence of invasive species through field surveys and will evaluate the effectiveness of the actions undertaken by following the IASMP.		X			X	X	X	X		X	X	X	X																				X	
BIO-33	Biodiversity Management	Invasive species management	Restoration	Post-management restoration. Sometimes, control of an invasive species is followed by rapid and adequate recovery of the native ecosystem or of the economic or societal value affected by the target species. But in other cases, native species may fail to recover, or unforeseen adverse consequences may occur, such as invasion by other introduced species. In such cases, further intervention may be required to assist in the recovery of native biodiversity or other values. This may include specific restoration projects for individual native species, or management of other invasive species. The Contractor will design and implement a post-management restoration project to ensure the success of the recovery of native biodiversity, ecosystem, ecosystem services and other values, following the IASMP.		X			X	X	X	X		X			X																					X	
BIO-34	Biodiversity Management	Collision Risk	Minimization	Spatial Collision Risk Analysis and Seasonal Shutdown Planning To improve the precision and effectiveness of collision risk mitigation, a spatial analysis of turbine-specific risk will be conducted using data from the Collision Risk Modelling (CRM) program. This measure includes the following actions: - Turbines will be grouped by vantage points (VPs), and a Kernel Density Estimation (KDE) will be applied at the VP-cluster level to identify zones of elevated flight activity and collision risk. - Survey effort and visibility conditions across VPs will be standardized to ensure accurate calculation of areal bird densities. - Extension of the methodology already applied to non-directional species in CRM Stage A to additional species and flight types. - CRM will be run for each survey season to detect periods of increased turbine-specific risk. These results will inform the definition of targeted seasonal shutdown windows. This mitigation measure will support adaptive management and allow for prioritization of turbines and time periods where shutdown-on-demand or other mitigation actions are most needed. Results will be shared with relevant authorities and stakeholders as part of the ongoing commitment to evidence-based environmental protection.	X				X				X				X																					X	

BIO-35	Biodiversity Management	BMP Dissemination	Minimization	The BMP will be disseminated to all staff responsible for managing the construction site and to all Sub-Contractors working on the Project Personnel at an appropriate level of seniority will be nominated to be responsible for good site practices and arrangements regarding biodiversity management		X			X	X	X	X		X	X	X	X																				X	
BIO-36	Terrestrial habitat and ecosystems (Flora and fauna)	Emission of dust and particulate matter and Emission of gaseous pollutants	Avoidance	Specific mitigation measures will be adopted on site to avoid dust and particulate matter dispersion: · the loose material, when temporarily stored on the Project construction area for later use, disposal, or reuse, will be properly segregated, sprayed down with water, and protected from weathering (i.e., covered up with a geotextile or other type of layers). · The granular material will be stored in stalls, or in controlled and treated heaps protected with tarpaulins. · Covered and uncovered warehouses for storing small/medium construction materials and equipment will be installed. · The height of the mounds/piles of loose material should not be more than 2 m and the slope angle should not be more than 30° for preventing flows and sliding. · Wind barriers (protective fences) will be used when necessary. · The Contractor will avoid long-term stockpiling of material; however, when a longer stockpiling is necessary, the piles should be capped or grassed over.		X			X	X	X	X		X			X																					X		
BIO-37	Terrestrial habitat and ecosystems (Flora and fauna)	Emission of dust and particulate matter and Emission of gaseous pollutants	Avoidance	To avoid dust generation from moving vehicles and dispersion, the following measures will be implemented: · Roads will be sprayed down with water during the dry season. · All moving vehicles will follow pre-defined routes. · The speed limit for heavy vehicles within the construction site will be restricted to 20 km/h. Loose material on trucks and other transport vehicles will be covered up to avoid dust dispersion. · Trucks and the other vehicles will be periodically washed and cleaned prior to leaving the construction site. · Periodic visual inspections will be carried out to ensure the adoption of mitigation measures.		X			X	X	X	X		X			X																					X		
BIO-38	Terrestrial habitat and ecosystems (Flora and fauna)	Emission of dust and particulate matter and Emission of gaseous pollutants	Minimization	The Contractor will ensure that the trucks loading and unloading operations be carried out so to minimize dust and particulate matter emissions. Truck loads will be sprayed before unloading during dry seasons where the risk of dust and particulate matter is higher.		X			X	X	X	X		X			X																			X		
CLC-01	Climate Change	All Risks	Minimization	Conduct a periodical revision (e.g., every 5 years) of the climate risk assessments to refine adaptation strategies based on new climate projections and the implementation of adaptation measures.		X			X	X	X	X		X			X																					
CLC-02	Climate Change	All Risks	Minimization	Ensure regular maintenance of infrastructure to reduce sensitivity to climate-related hazards.		X			X	X	X	X		X			X																					
CLC-03	Climate Change	All Risks	Minimization	Incorporate risk mitigation measures into the Project's design where feasible and ensure their integration into the Contractor's ESMS to facilitate seamless implementation and long-term effectiveness.	X				X	X	X	X	X				X																					
CLC-04	Climate Change	Risk of Wildfires	Avoidance	Heat, flammable gas and smoke detectors are provided at strategic locations inside each BESS container to detect electric fire and thermal runaway at earliest phase; they will alarm in case of any event		X			X							X	X																					
CLC-05	Climate Change	Risk of Wildfires	Avoidance	Deploy thermal imaging cameras, infrared sensors, and remote fire monitoring systems at substations, and wind turbines to detect heat anomalies and provide early warnings before ignition occurs.		X			X		X			X	X		X																					
CLC-06	Climate Change	Risk of Wildfires	Minimization	Establish firebreak zones and create fuel-reduction areas using gravel, non-flammable barriers, or controlled burns to slow fire spread near wind turbines, substations, and BESS.		X			X		X			X		X	X																					
CLC-07	Climate Change	Risk of Wildfires	Minimization	Maintain defensible space by regularly clearing dry vegetation, deadwood, and other combustible materials along access roads and around overhead lines, wind turbines, substations, and BESS to prevent fire spread.	X				X	X	X	X	X				X																					
CLC-08	Climate Change	Risk of Wildfires	Minimization	Ensure adequate access for firefighting vehicles and maintain strategically placed water storage or hydrants at substations, BESS, and near wind turbines to support emergency response.		X			X		X			X			X																					
CLC-09	Climate Change	Risk of Wildfires	Minimization	Conduct regular inspections of electrical systems and transformers at substations and wind turbines to identify potential fire hazards from electrical faults.		X			X		X			X			X																					
CLC-10	Climate Change	Risk of Wildfires	Avoidance	Place sufficient safety distance between BESS containers to ensure no fire propagation as per BESS manufacturer specifications.	X				X				X			X	X																					
CLC-11	Climate Change	Risk of Wildfires	Avoidance	Construct fire-resistant enclosures, partitions, and physical barriers around substations to prevent fire from spreading between critical components.	X				X		X		X				X																					
CLC-12	Climate Change	Risk of Wildfires	Avoidance	Install gas detectors inside substations to identify hazardous conditions that could lead to fire incidents.	X				X		X		X				X																					
CLC-13	Climate Change	Risk of Wildfires	Avoidance	Implement active cooling systems and controlled venting mechanisms at BESS and wind turbines to prevent overheating and mitigate fire risks.	X				X		X		X		X	X	X																					
CLC-14	Climate Change	Risk of Wildfires	Avoidance	Use insulated conductors, spark arresters, and arc protection systems along overhead lines to minimize ignition risks from electrical faults.	X				X	X	X		X		X	X	X																					
CLC-15	Climate Change	Risk of Wildfires	Minimization	Develop and regularly update fire emergency response plans, including fire suppression drills and evacuation procedures, ensuring coordination across wind turbines, BESS, substations, and access roads.	X				X	X	X	X	X				X																					
CLC-16	Climate Change	Risk of Extreme Heat and temperature variability	Minimization	Use high-temperature resistant conductors on overhead lines to maintain mechanical integrity and reduce sagging during extreme heat.	X					X			X				X																					
CLC-17	Climate Change	Risk of Extreme Heat and temperature variability	Avoidance	Install dynamic line rating systems to overhead lines to monitor real-time conductor temperature and ambient conditions, allowing for adaptive load management and avoiding overheating.	X					X			X				X																					
CLC-18	Climate Change	Risk of Extreme Heat and temperature variability	Minimization	Increase clearance margins and inspect for thermal sag risks for overhead lines to prevent conductor-ground contact or flashovers during extreme temperature events.	X					X			X				X																					
CLC-19	Climate Change	Risk of Extreme Heat and temperature variability	Minimization	Implement active and passive cooling systems, including ventilation and phase-change materials, at BESS and substations to regulate temperatures in critical equipment.	X				X		X		X			X	X																					
CLC-20	Climate Change	Risk of Extreme Heat and temperature variability	Minimization	Enhance monitoring systems with additional thermal sensors and predictive analytics at wind turbines, BESS, and substations to detect overheating risks and trigger adaptive responses.	X				X		X		X		X	X	X																					
CLC-21	Climate Change	Risk of Extreme Heat and temperature variability	Minimization	Optimize operational procedures by adjusting loads, operating hours, or shutdown thresholds during extreme heat events for wind turbines, substations, and BESS to prevent overheating.		X			X		X			X	X	X	X																					
CLC-22	Climate Change	Risk of Extreme Heat and temperature variability	Minimization	Use advanced heat-resistant materials and coatings in electrical components and mechanical parts of wind turbines, substations, and overhead lines to improve durability under high temperatures.	X				X	X	X		X		X		X																					
CLC-23	Climate Change	Risk of Extreme Heat and temperature variability	Minimization	Design enclosures and shelters with reflective surfaces and natural cooling features at BESS and substations to minimize internal heat buildup.	X				X		X		X			X	X																					
CLC-24	Climate Change	Risk of Extreme Heat and temperature variability	Minimization	Develop contingency plans for heatwaves, including emergency cooling measures, additional power reserves, and operational adjustments for wind turbines, BESS, and substations to ensure system reliability.		X			X		X			X	X	X	X																					
CLC-25	Climate Change	Risk of Extreme Cold	Avoidance	Reinforce overhead lines structures to withstand increased mechanical loads from ice and snow buildup during extreme cold events.	X					X			X				X																					
CLC-26	Climate Change	Risk of Extreme Cold	Avoidance	Use overhead line conductors and insulators made from materials that retain flexibility and strength in sub-zero temperatures to avoid brittleness and breakage.	X					X			X				X																					
CLC-27	Climate Change	Risk of Extreme Cold	Minimization	Integrate automated de-icing and anti-icing systems, such as heating elements and ice-resistant coatings, on overhead lines and underground cables to prevent ice buildup and ensure uninterrupted power transmission.	X					X			X				X																					
CLC-28	Climate Change	Risk of Extreme Cold	Minimization	Apply cold-resistant lubricants, hydraulic fluids, and insulative coatings to wind turbine components and substation equipment to maintain mechanical performance in freezing conditions.	X				X		X		X		X		X																					
CLC-29	Climate Change	Risk of Extreme Cold	Avoidance	Develop strategies for ice removal and mitigation, such as remote-controlled mechanical removal and chemical de-icing agents, for access roads to ensure safe transportation and maintenance access.	X							X	X				X																					
CLC-30	Climate Change	Risk of Extreme Cold	Minimization	Use materials with high impact tolerance and flexibility in the design of overhead lines and underground cables to prevent mechanical degradation and brittleness in extreme cold.	X					X			X				X																					
CLC-31	Climate Change	Risk of Extreme Cold	Minimization	Establish cold-weather operational protocols, including adjusted maintenance schedules and emergency response plans for substations and BESS, to prevent system failures due to extreme cold conditions.		X			X		X			X			X																					
CLC-32	Climate Change	Risk of Drought and Water Stress	Avoidance	Conduct long-term soil moisture and hydrological monitoring at wind turbine foundations and substations to detect early signs of subsidence risks due to prolonged drought conditions.		X			X		X			X			X																					
CLC-33	Climate Change	Risk of Drought and Water Stress	Minimization	Apply soil stabilization techniques, such as bioengineering, deep-rooted vegetation, and geosynthetics, around wind turbines and substations to maintain ground integrity and reduce the risk of foundation settlement.		X			X		X			X			X																					
CLC-34	Climate Change	Risk of Drought and Water Stress	Minimization	Use drought-resistant vegetation and soil treatments in areas with expansive clays near turbine foundations and access roads to minimize soil shrinkage and prevent erosion-related instability.		X			X			X		X			X																					
CLC-35	Climate Change	Risk of Drought and Water Stress	Minimization	Implement controlled irrigation or moisture-retention strategies at critical infrastructure sites, such as substations and wind turbines to mitigate extreme soil drying effects in prolonged drought conditions.		X			X		X			X			X																					
CLC-36	Climate Change	Risk of Drought and Water Stress	Minimization	Develop contingency plans for foundation maintenance at wind turbines and substations in case of significant soil shrinkage, including reinforcement options and adaptive foundation designs for high-risk areas.		X			X		X			X			X																					
CLC-37	Climate Change	Risk of Strong Winds	Minimization	Use compact or low-profile conductor configurations to reduce wind exposure and minimize line sway.	X				X	X			X				X																					
CLC-38	Climate Change	Risk of Strong Winds	Minimization	Install vibration dampers and spacers on overhead lines to control wind-induced oscillations and prevent mechanical fatigue.	X					X			X				X																					
CLC-39	Climate Change	Risk of Strong Winds	Minimization	Use advanced aerodynamic designs and reinforced materials for wind turbine blades and nacelles to minimize wind-induced vibrations and structural stress.	X				X						X		X																					

CLC-40	Climate Change	Risk of Strong Winds	Minimization	Strengthen anchoring systems and support structures for overhead lines to reduce the risk of damage or collapse in extreme wind conditions.	X					X			X				X																						
CLC-41	Climate Change	Risk of Strong Winds	Minimization	Install real-time wind monitoring systems at wind turbines and substations with automated response capabilities, such as adaptive load redistribution and predictive shutdown mechanisms.	X				X		X		X				X																						
CLC-42	Climate Change	Risk of Strong Winds	Minimization	Enhance structural reinforcements for substation enclosures and BESS housing to withstand high wind loads and prevent damage to critical equipment.	X				X		X		X			X	X																						
CLC-43	Climate Change	Risk of Strong Winds	Avoidance	Conduct regular structural integrity assessments for wind turbines, substations, and BESS foundations to identify and address potential vulnerabilities related to prolonged exposure to strong winds.		X			X		X			X			X																						
CLC-44	Climate Change	Risk of Strong Winds	Minimization	Develop contingency plans for high-wind events, including rapid inspections, emergency shutdown protocols, and accelerated maintenance for wind turbines and electrical infrastructure.	X				X	X	X		X				X																						
CLC-45	Climate Change	Risk of Strong Winds	Minimization	Apply wind-resistant coatings and protective barriers to exposed components of overhead lines to mitigate wear and potential damage from wind-driven debris.	X					X			X				X																						
CLC-46	Climate Change	Risk of Flooding	Minimization	Substations and BESS will be eventually elevated to reduce vulnerability to flooding.	X				X		X		X			X	X																						
CLC-47	Climate Change	Risk of Flooding	Avoidance	Flood-resistant enclosures and monitoring systems for early detection of water ingress will be incorporated in substations and BESS.	X				X		X		X			X	X																						
CLC-48	Climate Change	Risk of Flooding	Minimization	Design and implement site-specific drainage systems around critical infrastructure and access roads to direct water away, preventing water accumulation.	X				X	X	X	X	X				X																						
CLC-49	Climate Change	Risk of Severe Storms	Avoidance	Reinforced anchoring systems for substations and BESS will be employed to withstand storm-induced mechanical stress.	X				X		X		X			X	X																						
CLC-50	Climate Change	Risk of Extreme Precipitations and Precipitation variability	Avoidance	Real-time precipitation monitoring systems will be installed to manage water-related risks and provide early warnings for wind turbines, substations and BESS.	X	X			X		X		X				X																						
CLC-51	Climate Change	Risk of Extreme Precipitations and Precipitation variability	Avoidance	Rain-resistant enclosures will be used for sensitive equipment in substations and BESS to protect them from water damage.	X				X		X		X			X	X																						
CLC-52	Climate Change	Risk of Hail	Avoidance	Real-time weather monitoring systems will be implemented to detect hailstorms and allow for operational adjustments for wind turbines, substations, and BESS.	X				X		X		X				X																						