



Image of adjacent 100MW Zhanatas Wind Power Plant

Non-Technical Summary

100MW Shokpar Wind Power Plant, Kazakhstan

September 2022

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1. Introduction

The European Bank for Reconstruction and Development (EBRD) is considering providing funding to Shokpar Wind Power Station LLP, a local wind developer in Kazakhstan, to finance the development, construction, connection to the transmission grid, commissioning, and operation of the 100 MW wind power plant (the Project). The Project is located near the town of Zhanatas, Sarysu district, Zhambyl region, Southern Kazakhstan, which is about 650 km west of the city of Almaty.

This Non-Technical Summary (NTS) provides a description of the proposed Project and describes the potential benefits and impacts associated with the construction and the operation of the planned wind power generation facility. It makes recommendations as to how these impacts can be mitigated and managed through all phases of the Project's development.

2. What does the Project Include?

The Project is a new development on a 164-hectare (ha) area comprising twenty-two (22) Envision (EN-156) wind turbine generators, which will be placed on the northern slope of the Ulken Aktau Ridge along the Karatau-Zhanatas R-43 highway. Each turbine will have a generating capacity of 4.8MW and will comprise 95 m high towers with 76.4 m long blades that rotate within a 156 m diameter with the total height of the wind turbine being 173 m. (Figures 1, 2 and 3).

The total installed capacity of the Shokpar Wind Power Plant (WPP) is 100MW. The total annual electricity generation capacity is approximately 350 mln. kWh. Generated electricity will be carried to the national grid through the new 7.6km 220kV power transmission line linking the windfarm and existing 220kV electric substation called "Opornaya", situated in about 2 km south-west from the town of Zhanatas. The windfarm lifespan is 20 years. The windfarm facility will employ about 25 people.

The key Project components are:

- Construction of 22 Envision (EN-156) WTGs;
- Construction of 4 Medium Voltage (MV) cable lines both underground and overhead across the stream's valley;
- Construction of a new Step-Up Substation, including administrative and control buildings;
- A double-line overhead transmission line linking the WPP substation with the existing Opornaya substation connection point; and
- Extension of the existing KEGOC's Opornaya substation.

Construction activities commenced in June 2022. Shokpar WWP commissioning is scheduled for January 2024.

Currently, the Project is in its construction phase. Construction activities commenced in June 2022. Shokpar WWP commissioning is scheduled for January 2024.

Figure 1 General Location of the Project, Southern Kazakhstan



Figure 2 Layout of the Proposed 100MW Shokpar WPP

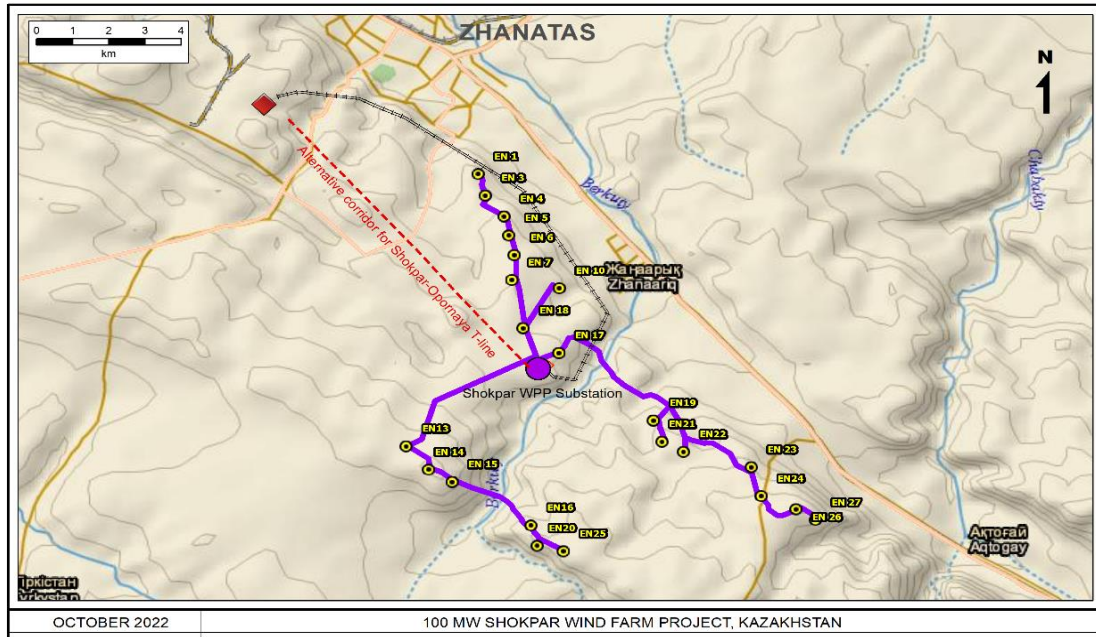


Figure 3 Envision (EN-156) Wind Turbines (source: Envision Ltd, China)



3. What are the Benefits of this Project?

It is envisaged that the Shokpar WPP Project will improve the reliability of the regional power supply and will contribute to a sizeable reduction in air pollution in the surrounding areas. This will reduce the Kazakhstan’s contribution to climate change in line with the Nationally Determined Contribution and the Green Economy concept in the process.

The Project benefits can be summarised as following:

- It will create a clean renewable energy source, which will go towards meeting Kazakhstan’s national renewable energy goals thereby reducing the reliance on electricity generation from fossil fuel thermal power plant facilities. This will achieve significant greenhouse gas emissions (GHG) savings;
- The provision of much needed power generation capacity in the region and the support of infrastructure development in the region; and
- Although renewable energy sector such as wind power do not generate significant new employment opportunities, some job creation within the Zhanatas area is expected.

4. What will be the Potential Adverse Environmental and Socio-Economic Impacts of the Project and How will they be Mitigated?

The analysis of impacts has been performed for construction and operation stages of the Project. During the construction, and operation periods, the Project Company will implement an Environmental and Social Action Plan (ESAP), which identifies mitigation measures to minimize, reduce, eliminate or control potential adverse impacts. The proposed mitigation measures are based on best management practices applied across the wind power/construction sectors.

The following environmental and social resources and aspects were examined during the Project’s environmental and social appraisal.

<i>Environmental</i>	<i>Socioeconomic</i>
• Air Quality	• Demographics, including population and income
• Surface water and groundwater	• Infrastructure, including roads and power supply
• Land use	• Economic conditions
• Waste management	• Community Health & Safety
• Visual aspects	• Occupational Health & Safety, Security
	• Labour and working conditions
• Geology and soils	• Cultural resources
• Vegetation and habitats	
• Avian and terrestrial fauna	
• Noise and vibration	

The analysis suggests that the wind farm is not located in environmentally and/or socially sensitive areas, and there are no protected or designated nature reserves within a 30-km radius of the Project. The birds' main migratory pathways are found within about 25-30 km north of the Project area. The area's ecological value is considered to be relatively low with the vegetation and animals typical for the waterless zones of the steppe.

Overall environmental and social impacts are judged to be site specific (localised) and manageable in compliance with the Bank's Performance Requirements via implementation of the defined ESAP mitigation measures.

In order to effectively manage the environmental and social impacts of the Project during construction and operation stages, the Project company will develop an ESMS based on an overarching Environmental and Social Policy and environmental and social mitigation measures specified in the comprehensive ESAP. The ESAP was developed and is being agreed between the Project company and the Lenders.

The ESAP will determine major environmental and social issues and risks associated with the Project and will define necessary measures needed to be undertaken by the Project company and its contractors to reduce or avoid adverse impacts of Project's implementation on the environment and people. The Plan will be reviewed during the Project implementation with any amendments in compliance with the laws of the Republic of Kazakhstan and/or EBRD requirements for environmental, health, safety and social performance.

In addition, a site-specific Construction Environmental and Social Management and Monitoring Plan and Operational Environmental and Social Management and Monitoring Plan will be developed by the Project Company. The primary goals of both plans are to set out measures to avoid, reduce or control adverse environmental and social effects associated with construction and operation activities of the Shokpar WWP in line with industry best practice and to provide a vehicle for implementation of various mitigation activities identified in the Project's Environmental Impact Assessment (EIA) and ESAP. It will be the responsibility of the Shokpar Wind Power LLC and Engineering, Procurement and Construction (EPC) Contractor to implement the requirements of the Construction Environmental, Social Management and Monitoring Plan and sub-plans throughout the construction phase and to monitor the performance of its Individual Subcontractors to ensure they meet the appropriate Construction Environmental and Social Management and Monitoring Plan requirements. The responsibility for developing and implementing the Operational Environmental and Social Management and Monitoring Plan throughout the operation phase will be on the Project Operator (Shokpar Wind Power LLC).

How Environmental Impacts will be Managed?

The construction of the Project and its facilities will involve activities that will unavoidably create environmental impacts. These disturbances are normally encountered in construction projects, such as traffic congestion, noise, dust, and gaseous emissions of construction equipment and vehicles. The disturbances during construction are transient and most are confined to the construction site. Good construction management practices and construction methods will be able to minimise potential environmental and physical disturbances.

Emissions to Air

The impacts on air quality will primarily take place during the construction period. The overall effects on local air quality during construction will be minor and temporary. During the



Figure 4 - Dust generation during construction works.

construction period, the effects on air quality would include release of fugitive dust emissions and pollutant emissions from vehicles and construction equipment. Material moving activities, site preparation and vehicle traffic, if not properly monitored and controlled, have the potential to generate large amounts of fugitive dust. Typical fugitive dust emissions sources during construction include movement of earthmoving equipment (e.g. scrapers and dozers) over disturbed surfaces, drilling, material/aggregate loading and unloading, dusting of soil stockpiles and vehicular travel on unpaved surfaces (Figure 4). Movements of vehicles and construction equipment will also result in

emissions of carbon monoxide, nitrogen oxides, sulphur oxides, and hydrocarbons.

The measures to reduce potential adverse effects needed to include minimising land surface clearing, restricting unnecessary traffic around the construction sites, minimising size of material/spoil storage piles, regular water spraying of dirt roads used for vehicles and construction equipment and keeping vehicles and equipment well-maintained.

Potential effects on air quality will be managed through full implementation of air quality management plan by the EPC Contractor.

Noise and Vibration Management

Ambient noise levels will increase during the commencement of construction works. Site noise would originate from construction equipment and drilling required to develop the wind tower and other civil facilities foundations. Noise during construction will be controlled by measures as set out in the noise management plan for construction, which will be developed by EPC Contractor and include measures to reduce noise effects, such as: ensuring noise abatement technologies on large construction equipment are operating correctly at all times; concentrated equipment use along the edges of the plot space where other structures are present will be scheduled during the day, whenever possible, and the night-time activities in this area will be limited to hours before 8pm; engine idling will be limited to periods no longer than 10 minutes; to the extent possible, activities that require pile driving will be limited to daylight hours; and areas within the construction site that have high sound pressure levels will be clearly marked and workers, suppliers, visitors and consultants will be required to wear ear protection devices when working in these areas.

Noise assessment (modelling) as advised to be completed within the ESAP is to ensure that appropriate measures to avoid, reduce or otherwise control potential adverse noise effects are required to be implemented for the operation phase of the Shokpar wind park.

Hazardous and Non-hazardous Waste Management

The Project's hazardous and non-hazardous waste types will be managed through waste management plans, developed for construction and operation phases. Both non-hazardous and hazardous wastes will be generated during the construction phase. Most of this waste will result from the use of construction equipment and from packing materials used when preassembled components and other materials are delivered to the site. Generated construction waste will be segregated (where possible using recycling and waste bins on site), temporarily stored on-site for further collection and disposal by a local certified non-hazardous waste disposal company (Figure 5).



Figure 5 - Construction waste will be segregated and temporarily collected on-site for further proper disposal/recycling off-site.

Hazardous waste will be temporarily collected at designated places on-site for further disposal by a local certified hazardous waste disposal company.

Water Resources, Wastewater Management and Soils

There might be minor and limited impacts on shallow aquifer groundwater resources (quantity and quality) and soil quality due to accidental spillages of diesel, gasoline and oil leakages from vehicles and construction equipment used on-site. Stormwater management across the construction site will be governed by soil erosion control/stormwater management plan.



Figure 6 - Silt fence installed around soil storage stockpiles to prevent soil erosion and excessive sedimentation with stormwater runoff.

The use of best management practices to protect soil surface from erosion due to stormwater runoff of excavated materials and accidental spill events could considerably reduce potential risks impairing shallow groundwater and soil quality. Examples of standard erosion control practices would be silt fencing of excavated material (soil/sand stockpiles), re-vegetation of bare ground as appropriate (Figure 6).

Stormwater management practices across the construction site and erosion control will be managed/governed by soil erosion control/stormwater management plan. Portable toilets and septic tanks will be used for sanitary wastewater at all work locations.

No issues regarding the Project's use of water during operation have been identified. The primary source of raw water during Project operation will be bottled water. All sanitary wastewater and stormwater generated at the wind park administrative and control building will be collected in septic tanks for periodic collection and disposal by a local certified wastewater management company LLC Zhanatas-Du-Zhylyu", based in the town of Zhanatas.

Fuel and other chemicals spill prevention practices would include storage of small quantities of fuel at each construction site and availability of clean-up materials to clean-up accidental fuel spills (Figure 7). All these measures will be defined in the Refuelling and Spill Prevention and Clean-up Procedure developed by EPC Contractor.



Figure 7 - Fuel/chemicals emergency prevention and clean-up kits will always be available at construction site.

Plants and Living Organisms

Potential impact on fauna include:

- collision of birds or bats with turbine towers, blades (moving or stationary) and/or associated infrastructure;
- displacement of birds and other fauna due to loss of suitable feeding and/or breeding/wintering habitat;
- disturbance of fauna within and around the turbine envelope;
- creating a barrier to dispersal, regular movements of fauna or migration routes; and
- habitat loss or fragmentation.

Mitigation of impacts will involve the practice of adaptive management in which the implementation of mitigation and management measures will be responsive to changing conditions and the results of monitoring throughout the project's lifecycle. The mitigation strategy will be commensurate with the project risks and should take a risk-averse approach that explicitly identifies and accommodates uncertainty about outcomes of mitigation measures. Also, in areas of natural habitat, mitigation measures will be designed to achieve 'no net loss of biodiversity' where feasible. Appropriate actions include:

- Avoiding impacts on biodiversity through the identification and protection of set-asides;
- Implementing measures to minimize habitat fragmentation, such as biological corridors;
- Restoring habitats during operations and/or after operations; and
- Implementing biodiversity offsets.

A Biodiversity Management Plan will be produced outlining all the impact mitigation, management and post construction monitoring protocols to be followed at Shokpar WPP facility.

Landscape and Visual Amenity

A high-level landscape and visual assessment was conducted to consider relevant sensitive receptors and the likelihood of significant landscape and visual impacts (including cumulative effects). Visual impacts introduce a human element to the landscape assessment by changing how humans perceive the landscape. The degree of impact will be subjective and

thus will vary between individuals. However, general predictions of impact significance can still be made. Therefore, visual impact is concerned with:

- The direct impacts of the development upon views of the landscape through intrusion or obstruction; and
- The reactions of viewers who may be affected.

The landscape effects on landscape character and visual amenity will result from the areas for temporary works, construction compounds, access road and on-site roads, areas for wind turbines, construction equipment and machinery.

In addition, it should be noted that operationally there will be landscape effects as the wind turbine generators are tall structures in a mainly grazing with a low and open landscape.

The nearest residential areas surrounding the Project area are:

- The village of Zhanaaryk (Suzdykbayuly) situated within 1.5-2 km north off the Project site (closest to the Shokpar western flank of wind turbine generators (WTGs));
- The village of Aktogay located in some 3.5 km east off the Project site;
- The town of Zhanatas, located in approximately 2 km from the eastern flank of the wind farm layout; and
- The village of Turkestan, which is situated at some 15 km north-east from the Project site.

The main source of landscape and visual impact during operation is the erection of 22 x 4.8MW turbines, each approximately 173 meters high (from the surface). These turbines will be seen within the context of an open landscape that is currently largely devoid of engineered structures. Given the requirements of wind power, they will also be located on the highest ground, which comprises the peaks and ridge line of the Ulken Aktau Ridge. Due to presence of gently rolling, hilly treeless landscape, the turbines are likely to be visible from peaks and ridges for some distance from the site, depending on atmospheric conditions.

What about Social and Economic and People's Health & Safety Effects?

Land and Economic Impacts

The total land area acquired for the Project is 163.68, inclusive of all turbines, power transmission line and new substation. Most part of the land leased by the Project Company is not used for any agricultural or grazing purposes. During the period of 2020-2021, the Project company signed long-term land lease agreements with Akimats and LLC Kazphosphate. The total of three land lease agreements were signed with local herders. As of November, 2022, all required permits for land use were received by Project company.

Employment Opportunities

It is expected that the Shokpar wind farm will employ up to 25 staff, providing local employment opportunities in facility operation, on-site, and management positions. Limited job opportunities for local residents of Zhanaaryk, Zhanatas, Aktogay and other local settlements will be available during the construction phase of the Project (July 2022-January 2024)

Pressure on Social Infrastructure and Services

No extended pressure on local infrastructure or services (e.g., medical facilities) is expected. Most of construction workers will be accommodated on-site – in temporary living quarters

installed on-site. Management of workforce will be made through Labour force management plan developed by EPC Contractor and approved by the Project Company. Maximum workforce at peak (about 160 construction workers) is not anticipated to cause any impacts on existing medical facilities in the area.

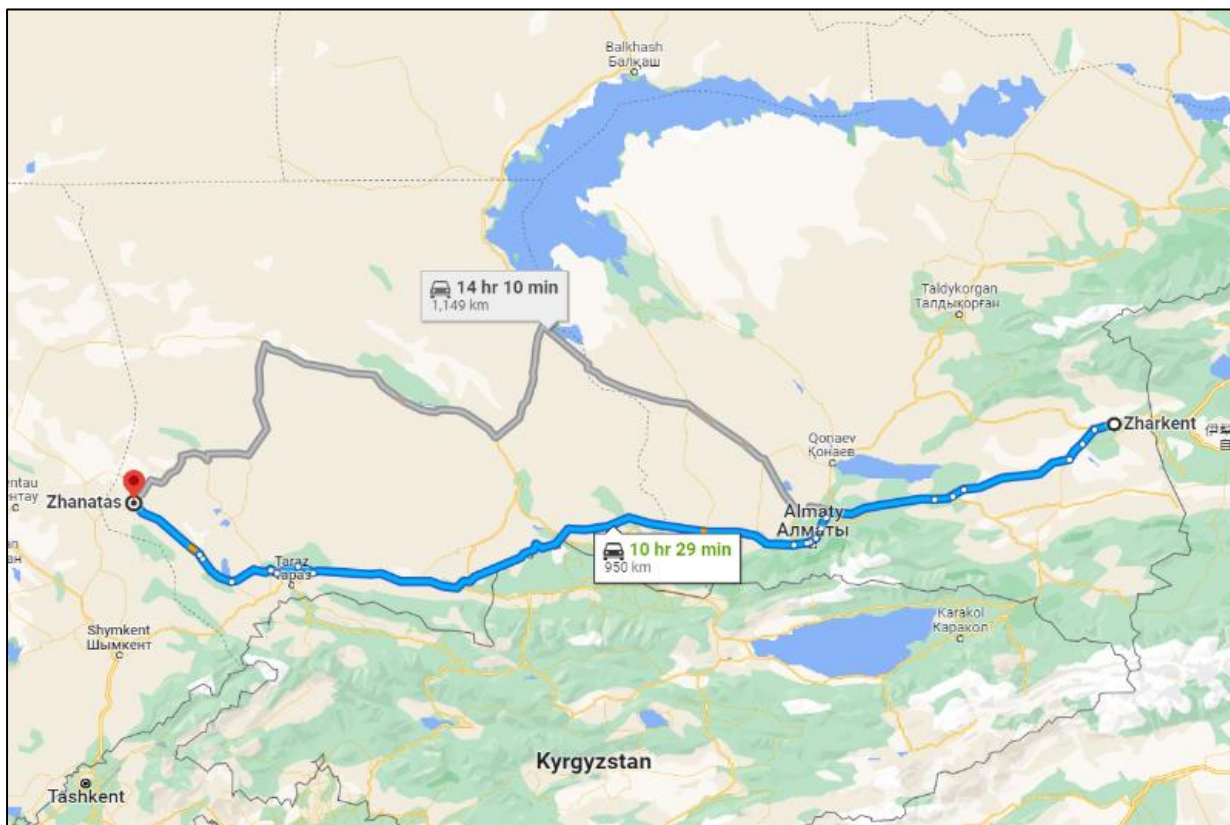
Traffic Safety and Logistics

Given that construction will be operating over a 19-month period, some pressure (limited in duration) on local road infrastructure could occur with the movement of contractors, materials, and machinery on and off-site. Traffic management and safety measures will be included in the Construction Environment and Social Management and Monitoring Plan, which will be produced by the Project company and/or EPC contractor for construction phase.

The oversize parts like towers, nacelles and blades will be transported by the so-called “New Silk Way” highway A-2, which runs all the way from the Chinese border with Kazakhstan at the city of Khorgos, passing by Almaty and Taraz to the town of Zhanatas (by regional highways R-43 and R-44) (Figure8).

Envision, the Chinese Wind Turbine Generators (WTG) manufacturer, will be transporting parts of WTGs from its two locations in China to the China-Kazakhstan border, where another sub-contractor, Kazakhstani logistics and transportation company will be responsible for in-country delivery of loads from the boundary to the site. The requirements for deliveries of oversize items will involve usage of special trucks supplied with police convoys.

Figure 8 - Approximate transport route for oversize and heavy weights from China (e.g. WTGs etc) (sourced from GoogleMaps)



Community Health and Safety

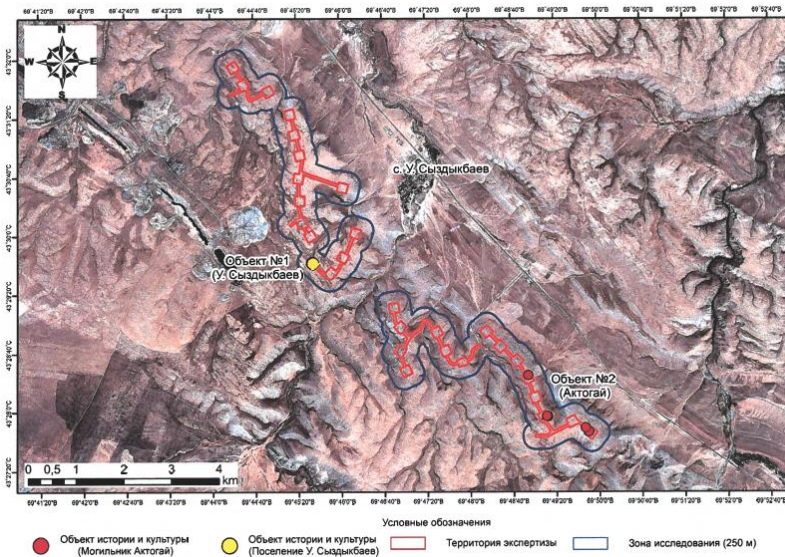
No significant issues with regard to community safety are envisaged. The Project company will develop a set of management plans to mitigate potential impacts associated with community health and safety, including the above-mentioned traffic management plan, as well as noise management plan and emergency response procedures. Some measures to reduce, avoid or control potential community health and safety impacts may include securing the construction site with a 24/7 security guards presence; adequate lightning and security lights and signage. EPC Contractor will also require individual sub-contractors to implement procedures to protect public health and safety, including implementation of a traffic management plan for all drivers and equipment operators (speed limits, training, etc.), distributing public notices of construction operations near areas open to the public, security as needed to prevent unauthorised access to project locations, with appropriate training for guards, notice to local authorities, hazard notices/signs/barriers to discourage/prevent access to construction sites.

The closest residential houses to Shokpar wind turbines are situated within 1.2 km and therefore there is no risk of direct ice throw from turbine blades. Additionally, the Company will employ de-icing of wind turbine blades in winter months to protect the wind turbines for technical reasons. Access to the turbines across the wind park will be restricted by installation of barriers with proper no trespassing/no unauthorised access) signage.

Prior to commissioning of the Shokpar wind park, the Company will develop an Emergency Response Plan, which will address all issues, associated with wind turbine fire (e.g fire in a turbine's nacelle or fire at electric substation).

Archaeology and Cultural Heritage

Potential impacts to cultural heritage could involve direct physical disturbance of archaeological and cultural heritage sites as a result of construction activities and ground disturbance. In order to avoid potential impacts on cultural heritage, the EPC Contractor will develop and implement a Chance Find Procedure and ensure that relevant personnel among contractors are trained in its use. This document will establish the procedure for actions in case of discovering objects that are classified as of having archaeological importance. During



the EIA process, presence of archaeological/cultural heritage objects was identified within the Project allocated land plots. The archaeological survey of the Project area (completed by Almaty based consultancy in 2020) revealed/confirmed presence of two cultural heritage objects, namely (i) Aktogay Burial Ground (dated appr. IV-I cent. BC) and (ii) ancient settlement Syzdykbaeva (est. ~40m²;

dated appr. IV-I cent. BC). Following the local legislative requirements (in line with the

procedure defined in the Kazakh Historic and Cultural Protection Law, 2019), the Project Company submitted the findings of archaeology survey report to obtain a formal Archaeological Expertise conclusion. All archaeological finds have been collected from both sites and are currently temporarily stored at LLC Archaeological Expertise awaiting the Ministry of Culture and Sport decision to which museum the findings be delivered for collection and exhibition. On July 2020, the Project Company received a formal expertise conclusion stating that the cultural objects identified during the survey are not culturally and/or historically significant, therefore, the area is not restricted for further development activities.

5. What about Workers' Health & Safety and Wellbeing?

In line with the construction standard practice of the Republic of Kazakhstan and as described within the ESAP, the EPC Contractor and Project operator will produce Occupational Health and Safety Plans, for construction and operation phases, accordingly. All individual contractors (and staff during Project operation) will be required to implement the health and safety features included in the plans. All tasks will be subject to work permits. Work permits will cover working at height, excavations and others. A health and safety manager will be responsible for the site and will conduct intermittent unannounced audits of construction contractors.



6. What about Stakeholder Engagement?

Shokpar Wind Power Plant LLC has been engaging with various project stakeholders since 2020, which coincided with the preparation phase of the Screening EIA report. The Project Company has engaged with the following institutions and stakeholders:

- Zhanatas Akimat
- Zhanaaryk Akimat
- Aktogay Akimat
- Kazphosphate LLC
- EuroChem LLC
- Local public (residents of Aktogay and Zhanaaryk)

Screening EIA: Disclosure and Public Hearings

As required by local legislation, no later than 30 days prior to EIA report disclosure and public hearings, the announcements for public hearings were advertised through local newspaper “Sarysu”, through local Radio Zhanatas and via announcements on information board at the Akimat’s entrance.

Formal screening EIA public disclosure/hearings meeting was held in the village of Zhanaryyk at 18:00 on 21 January 2022. The total of 27 attendees participated in the public meeting. The Company representatives disclosed information about the proposed Project and answered the questions from participants. In accordance with the meeting’s protocol, the key issues raised by local residents involved the following:

- a concern about noise generated by construction and operation of the wind park; and
- employment opportunities for local residents.

Shokpar Wind Power Plant LLC plans to set up a contact website alongside a social media page for the community to observe ongoing construction and submit their queries.



Regular dialogue and interaction with stakeholders and authorities is important for sustainable realisation of the Project.

Additional stakeholder engagement and consultation activities

On August 17, 2022, as part of Lender's project's E&S due diligence assessment, the Project Company and Project Investors carried out a number of additional high-level consultations with Project stakeholders. It was noted that the Project Company and the Project Investor had managed to build a constructive relationship with the local authorities.

The Akimats expressed deep interest in wind power development taking place in the region and promised full support as needed to the wind developers and investors.

Akim of Sarysu shared information about prospective plans for wind power resource development in the area. According to the received information, there is a memorandum between local authorities and (collectively) investors and wind developers to expand the total wind resource development capacity to 400MW – all attached to the northern slope of the Ulken Aktau Ridge along the Karatau-Zhanatas highway.

The Project company has developed a Stakeholder Engagement Plan, a public document, which will define the way Shokpar Wind Power Plant LLC will communicate with Project stakeholder groups throughout the Project phases. The Stakeholder Engagement Plan will also provide the external grievance mechanism - a procedure defining how complaints, concerns, comments and feedback from Project stakeholders and affected local public regarding the Shokpar wind park Project can be filed or submitted and how the Project company will handle and response to them.

The Plan will be made available at Shokpar Wind Power Plant LLC website or alternatively an interested person may formally request it via phone or email as specified in Section 7 below.

7. Contact Information about the Project

If anyone is interested in receiving additional information about the Shokpar Wind Power Plant project, or wants to submit any comments or raise any concerns on the Project, please refer to the following contact details:

Name: Nauryzbek Zhumagazin, *Local Administrative Manager*

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