Khizi 3 Wind Farm Project
Khizi Region
Azerbaijan

Environmental and Social Impact Assessment (ESIA) Report –

Non-Technical Summary (NTS)

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CONTENTS

LIST OF ABBREVIATIONS

ABBREVIATION	MEANING
ADB	Asian Development Bank
AOI	Area of Influence
Azerenergi	Azerenergi Open Joint Stock Company
BOO	Build Own Operate
BOP	Balance of Plant Design
CESMP	Construction Environmental and Social Management Plan
CHA	Critical Habitat Analysis
CRM	Collision Risk Modelling
CRMP	Collision Risk Management Plan
EAAA	Ecologically Appropriate Area for Analysis
EBRD	European Bank for Reconstruction and Development
EPC	Engineering Procurement Contractor
ESC	Environmental and Social Considerations
ESMMF	Environmental and Social Management & Monitoring Framework
ESMS	Environmental and Social Management System
FDI	Foreign Direct Investment
GBVH	Gender Based Violence & Harassment
GHG	Greenhouse Gas
IRENA	International Renewable Energy Agency
JICA	Japan International Cooperation Agency
MENR	Ministry of Ecology and Natural Resources
MoE	Ministry of Energy
NDC	Nationally Determined Contribution
NOMAC	First National Operation and Maintenance Co. Ltd
NNL	No Net Loss
NTS	Non-Technical Summary
OESMP	Operational Environmental & Social Management Plan
OHTL	Overhead Transmission Line
OFID	OPEC Fund for International Development
PBFs	Priority Biodiversity Features
PCFM	Post-Construction Fatality Monitoring
SDOD	Shut Down on Demand
SEA	Sexual Exploitation and Abuse
SNH	Scottish Natural Heritage
SS	Substation
WTG	Wind Turbine Generators
5 Capitals	5 Capitals Environmental & Management Consultancy

1 INTRODUCTION

1.1 Project Overview

Azerbaijan's National State Programme on *The use of Alternative and Renewable Energy Sources*, 2016-2020, aims to increase the share of alternative and renewable energy sources to 20%. The Programme has identified wind as the preferred source of alternative energy with an estimated annual wind power capacity of 800 MW, based on the International Energy Agency (IEA).

ACWA Power, the Project Developer, signed an implementation agreement with the Ministry of Energy (MoE) in Azerbaijan for developing, building and operating a 240 MW wind power project. The wind project is expected to operate for 25 years on a Build Own Operate (BOO) basis according to the Power Purchase Agreement (PPA). The 240 MW wind project will be split and built on two (2) locations as follows:

- Khizi 3: Capacity up to 162.5 MW and will be generated using 25 x 6.5 MW Wind Turbine Generators (WTG), located in Khizi region; and
- Area 1: Capacity up to 78 MW and will be generated using 12 x 6.5 MW WTGs, located at Absheron region.

ACWA Power appointed 5 Capitals Environmental & Management Consultancy (5 Capitals) to prepare the ESIA for the Project and they have appointed a local consultant Ecoenergy Ltd to undertake baseline surveys and consultations with the authorities and local communities and to obtain the relevant National regulatory permits. The local ESIA has been submitted to the Ministry of Ecology and Natural Resources (MENR) and is currently under review.

This Non-Technical Summary (NTS) of the ESIA provides a description of the Project and the anticipated impacts (both positive and negative) associated with its construction, commissioning, operation and decommissioning phases. It also describes the design process taken to prevent impacts and the mitigation and management measures identified to minimise or manage negative impacts and where possible to enhance beneficial impacts.

The ESIA report has been prepared in accordance with Azerbaijan national environmental and social regulations and standards and the European Bank for Reconstruction and Development (EBRD) Environmental and Social Policy (2019) and Performance Requirements. Other potential Lenders include Asian Development Bank (ADB) and OPEC Fund for International Development (OFID). Environmental & Sustainability policy requirements from these institutions have been considered in the ESIA, together with IFC (International Finance Corporation) EHS Guidelines and Performance Standards on Environmental & Social Sustainability (2012), the latter being applied by ACWA Power on all their projects. The public disclosure period for EBRD is 60 days commencing May 2022. ADB disclosure period is 120 days.

KEY PROJECT INFORMATION

PROJECT TITLE	Khizi 3 Wind Project
LOCATION	Khizi Region - Azerbaijan
PROJECT DEVELOPER	ACWA Power
PROJECT COMPANY	ACVA POVER AZERBAYCAN RENEVABLE ENERGY
OFF-TAKER	AzerEenergi
EPC CONTRACTOR	To Be Confirmed (TBC)
O&M COMPANY	First National Operation and Maintenance Co. Ltd (NOMAC)
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GOALS & OBJECTIVES

This Project will contribute towards Azerbaijan's carbon reduction commitments in reducing its Greenhouse Gas (GHG) emissions 35% by 2030, measured from the 1990 base year set in its Nationally Determined Contribution (NDC) under the Paris Agreement (IRENA, 2019). In addition there will be:

- Environmental benefits: The operation of the WF is a proactive measure towards a low carbon transition for Azerbaijan's economy harnessing the abundant wind resource in the country. This project will reduce the country's dependency on fossil fuel generated power and will reduce atmospheric pollution, in comparison to other power generation technologies in the current energy mix of Azerbaijan.
- Social benefits: The project will create local employment opportunities during the construction and operational phases; and
- Economic benefits: Due to the reduction in GDP growth and substantial drop in oil prices in recent years, the country is planning to diversify its economy and move towards a modernised energy system, which includes renewable energy projects.

Non-oil sector foreign direct investment (FDI) is set to increase from 1.5% to 4% by 2025 and an increase in the share of non-oil sector exports from USD 200 per capita in 2016 to USD 450 by 2025 and USD 1,200 by 2035, as set by the Strategic Roadmap on National Economic Perspectives (approved by Presidential Decree on 6th December 2016) (IRENA, 2019). Khizi 3 and Area 1 WFs will contribute to the diversification and development of renewable energy.

The principal objectives of this ESIA include the following:

- To provide an overview of the Project design, identification of sensitive receptors in the Project's area of influence and assessment of Project alternatives;
- To assess baseline conditions (existing conditions) prior to the development of the project through review of available data and conducting site specific surveys;
- To assess the project's environmental and social impacts during construction and operational phases and future decommissioning;
- To assess E&S compliance obligations, including applicable national regulations and international regulations and standards and lender requirements;
- To engage with key stakeholders and project affected people to disclose Project information, study outcomes, gain local knowledge about the local environmental and social context and seek feedback on the project;
- To determine applicable mitigation and management measures to be implemented in order to prevent, avoid or minimise potential impacts; and
- To prepare an Environmental and Social Management and Monitoring Framework (ESMMF) from which the construction and operational phases of the E&S Management Systems and Supplementary Plans can be developed and implemented.

1.2 Project Design and Alternatives

The following project alternatives were considered:

- No Project Alternative: Should the "Do Nothing" scenario be applied, then the anticipated negative impacts discussed in the ESIA would not occur. However, as assessed in the ESIA report, the impacts which are most likely to happen during the construction phase, are not expected to pose significant risks and can be adequately controlled through the implementation of the ESMMF (ref. Volume 3 of the ESIA). The potential for significant impacts during operations on migrating birds will be mitigated through a range of adaptive measures.

  If the project were not to go ahead, the positive benefits that will result from this clean Renewable Energy including cutting carbon emissions, reducing the reliance on fossil fuel power sources, socio-economic benefits and promoting alternative energy sources would not be achieved. Therefore, the implementation of the WF will have a positive impact in its contribution towards meeting the country's commitments to transition towards clean renewable energy and the "No Project Scenario" would adversely impact the governments initiatives in achieving this national goal;

- Site Selection: In January 2020, three (3) sites were considered for the 240 MW Wind Projects in Azerbaijan (Khizi 3, Area 1 and Area 7). Out of the three (3) sites, Khizi 3 and Area 1 were selected due to the wind potential at these project areas and possible construction and operations synergies and the close proximity of the two selected sites compared to the distance to third site (Area 7 site).

- Technology (Turbine) Alternatives; Four (4) turbine models were considered for the Project including Siemens Gamesa - SG 6.0-155, Goldwind GW136-4.8, Goldwind GW165-5.2 and Envision EN171 6.5.

  Different turbines were considered for the Project which would have required up to 45 WTGs for the site, but this was reduced to 25 Envision EN 171-6.5 MW model resulting in a much smaller footprint than was originally proposed, reducing the impact on critically important habitat for vulnerable and endangered species. The chosen technology finally selected also achieved the following:

  - Technology allowing flexible use and maximising energy generation during high and low wind conditions;
  - Ability to quickly slow and stop the rotating blades, called "shut down on demand" (SDOD) to prevent impacts with endangered birds of prey such as Steppe Eagle and then restart quickly after the bird(s) are at a safe distance. This flexibility significantly reduces energy losses and risk of bird mortality;
  - Least Cost of Energy (LCOE) which results in highest generation at lowest cost;
  - Site Suitability of the chosen WTG Model and least footprint on natural and critical habitats and species; and
  - The Project Schedule agreed with the Ministry of Energy,

- WTG Layout: The layout and number of WTGs has been progressively refined since the commencement of the ESIA study (March 2020) based on preventing or minimising environmental and social impacts. The layout and number of WTGs is based on wind resource assessment, distance from identified human, ecological and archaeological receptors and the outcome of the Collision Risk Modelling (CRM) for birds and Noise and Shadow Flicker Modelling. The studies have minimized potential impacts on birds, bats, existing houses and settlements and as well as taking consideration of facilities including underground cables, access roads, constructability and operability.

- OHTL Route: A review of the preliminary OHTL route and surrounding areas was carried out by 5 Capitals using satellite imagery and the initial environmental and social risks have been identified along the route.

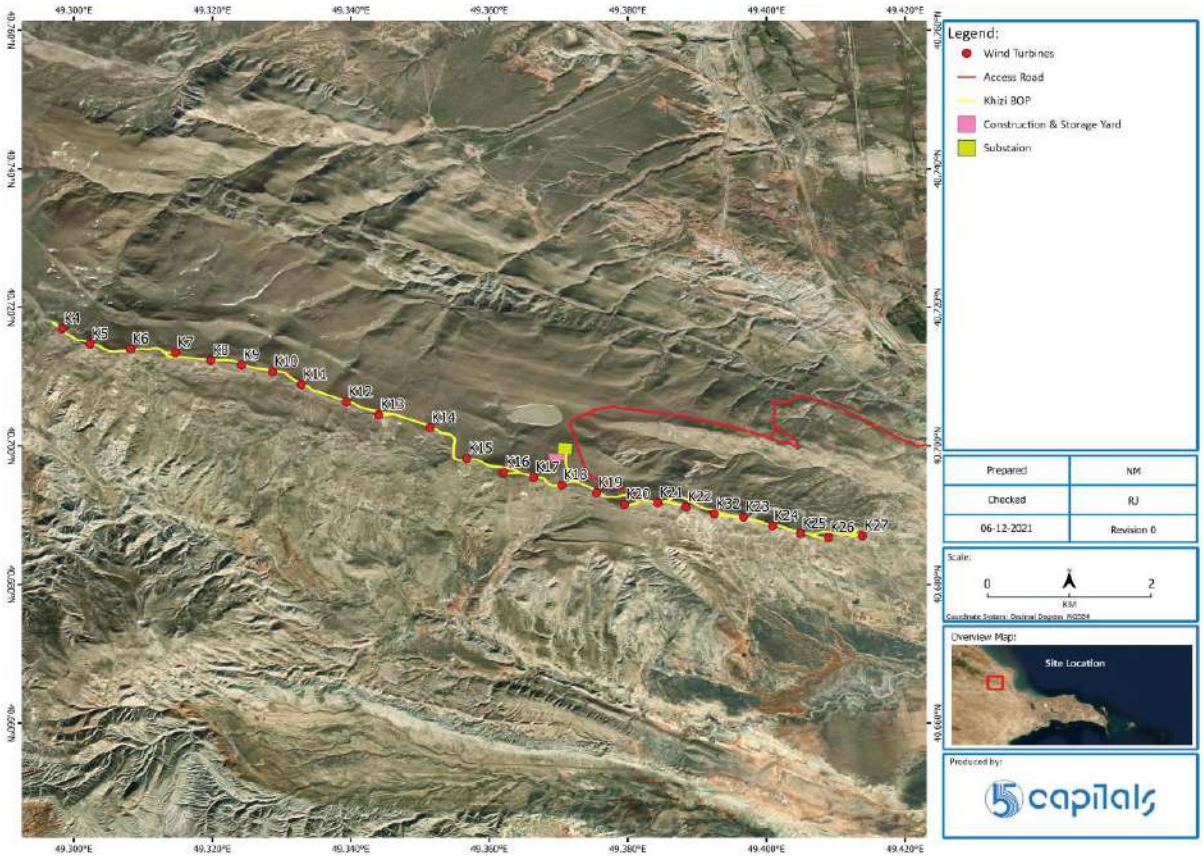
  Azerenergi revised their preliminary OHTL route to minimise social impacts and avoid sensitive ecological habitats and species. This was following a site reconnaissance in May 2021 along the OHTL route and immediate surroundings which also identified key environmental and social receptors along the route. Based on the outcome of the survey, Azerenergi further refined the route to avoid, farms and other human and ecological receptors where possible. The OHTL has also been informed by the outcome of baseline surveys undertaken as part of the scope of this ESIA.

2 PROJECT DESCRIPTION

2.1 Location

The Project is located on the hilltops of the Khizi region, approximately 55km north west of Baku.

Figure 2-1 Project Location



2.1.1 Site Conditions

The Project site is open and in a natural condition and lacks anthropogenic influences/activities. The landscape includes large undulations with rounded hilltops. The land is elevated from the surroundings to the north and once within the hills, the topography is not as steep (not a plateau), but with softer gradients. There is little or no physical infrastructure on the land. There are no roads, electrical connections, or other utilities.

2.1.2 Surrounding Areas

Two villages and small settlements are located within 15 km of the Project Site. The two villages are Sitalchay Village and Shuraabad located approximately 9.9 km and 15.9 km north east of the Project area, respectively. There are 11 seasonal farms identified surrounding the project boundary (within 7 km radius). The farms are used for seasonal farming / grazing during the

winter months (October to May). From June until September, livestock are moved to the north of Azerbaijan to summer pastures. In addition, a poultry farm is located approximately 3.5 km south east of WTG K27. Not all of these farms are used, some are abandoned and not leased under any agreement. Also, not all farmers use the project site for herding activities.

Other land uses include:

- Takhtakorpu-Jeyranbatan water canal located approximately 2.2km to 9.3km to the east;
- Yeni Yashma Wind Park, located approximately 3.5 km to the closest WTG on the lower land to the south east of the project area. The WF is owned and operated by Azerishiq OJSC and started operation in October 2018 (IRENA, 2019);
- A two (2) turbine pilot project wind farm (2 x 850 kW by Vestas) located approximately 9 km to the north east of project area, however not operational or connected to the grid; and
- A four (4) 900 kW turbines located approximately 8.6 km to the north east of project area (farm closest WTG K27), however not operational or connected to the grid.

Table 2-1 and Figure 2-1 below show the land-uses surrounding the Project site.

Table 2-1 Land Use

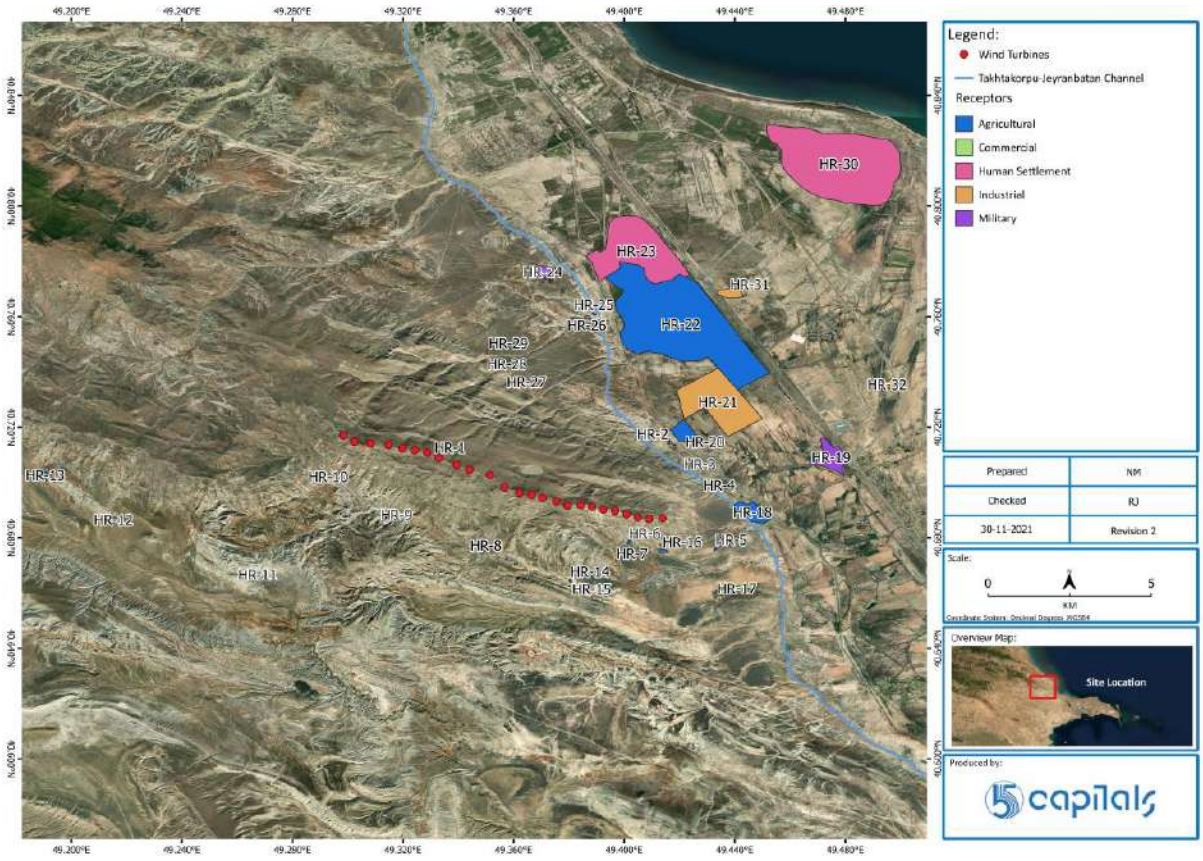
ID	NAME	LAND USE/ CATEGORY	DISTANCE (m)	NEAREST WTG
1	HR-1	Tent and Fenced Area	487	K11
2	HR-2	Seasonal Farm	2,961	K27
3	HR-3	Seasonal Farm	2,389	K27
4	HR-4	Seasonal Farm	2,104	K27
5	HR-5	Seasonal Farm	1,991	K27
6	HR-6	Seasonal Farm	950	K25
7	HR-7	Seasonal Farm	1,796	K24
8	HR-8	Seasonal Farm	2,291	K15
9	HR-9	Seasonal Farm	2,604	K8
10	HR-10	Seasonal Farm	1,567	K5
11	HR-11	Seasonal Farm	6,013	K4
12	HR-12	Seasonal Farm	7,699	K4
13	HR-13	Seasonal Farm	9,142	K4

ID	NAME	LAND USE/ CATEGORY	DISTANCE (m)	NEAREST WTG
14	HR-14	Agricultural Field	2,948	K20
15	HR-15	Agricultural Field	3,136	K32(O)
16	HR-16	Agricultural Field	1,223	K27
17	HR-17	Poultry Farm	3,329	K27
18	HR-18	Agricultural Field	2,259	K27
19	HR-19	Military Base includes residential blocks	4,995	K27
20	HR-20	Agricultural Field	3,124	K27
21	HR-21	Yeni Yeshma Wind Farm	3,821	K27
22	HR-22	Agricultural Field	5,637	K27
23	HR-23	Sitalchay Village	8,483	K22
24	HR-24	Military Compound	7,756	K14
25	HR-25	Agricultural Field	7,184	K19
26	HR-26	Houses	6,931	K14
27	HR-27	Houses	3,859	K14
28	HR-28	Houses	4,201	K13
29	HR-29	Houses	4,377	K11
30	HR-30	Shurabad Village	13,756	K27
31	HR-31	Pilot Wind Project (2 turbines)	9,077	K27

In order to confirm land use at the project site, consultation meetings were held with the Municipality of Sitalchay and consultation letter was issued to the Executive Power of Khizi region to confirm the land use at the project site in February and June 2021 respectively. In addition, key informant interviews were held with farmers from surrounding farms in February & August 2021 and in March 2022.

Based on consultations undertaken with Government of Azerbaijan, Municipality, local community and affected local community (Project Affected Persons), it has been confirmed that the land acquisition process did not involve any physical resettlement, land expropriation or forced evictions for this project.

Figure 2-2 Land Use Map



2.1.3 Project components

WIND FARM

The project will include a maximum of 25 WTGs. The proposed WTG for the Khizi 3 WF is the Envision Energy EN-171/6.5 Wind Turbine model. '*The EN-171/6.5 WTG* has a rated power of 6.5 MW, hub height of 100m , 171m rotor diameter, and three (3) blades, horizontal axis, upwind direction, variable speed and pitch control' (Envision Energy Co., Ltd, n.d.).

Auxiliary facilities for the Project will include site entrance and security building; administration building, offices and amenities; central control room, warehouse and stores, security, lighting; other mobile plant and vehicles; access roads; and electrical connections (underground) and substation.

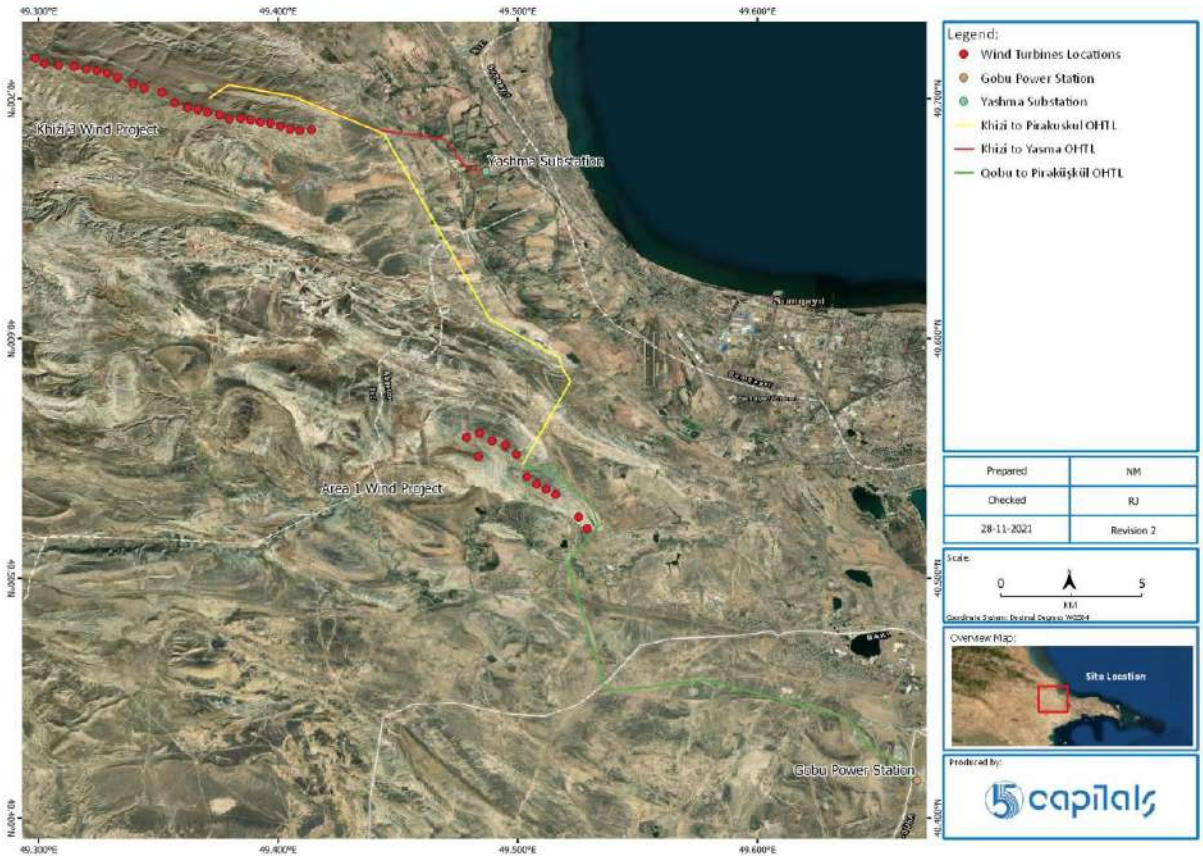
OVERHEAD TRANSMISSION LINE (OHTL) - ASSOCIATED FACILITY

The OHTL will connect both Wind Farms (Khizi 3 and Area 1 WFs) together and to the national grid. The responsibility for developing the OHTL lies with Azerenergi Open Joint Stock Company (Azerenergi), the Project off-taker and as such, the OHTL is considered an 'Associated Facility' to the Project; as it is not being directly funded under the loan agreement with lenders.

The OHTL is divided into three (3) lines as follows:

- 220 kv Khizi 3 - Yashma OHTL: This OHTL will connect the Khizi 3 WF substation (SS) to the existing Yashma SS and is approximately 20 km long – assessed as part of Khizi 3 ESIA report;
- 220 kv Khizi – Pirakashkul OHTL: The OHTL line that will connect Khizi 3 and Area 1 WFs SS and is approximately 30 km long - assessed as part of Khizi 3 and Area 1 ESIA report; and
- 220 kv Pirakashkul – Gobu OHTL: The OHTL line that will connect the Area 1 WF SS to the existing Gobu Power Station and is approximately 30 km long - assessed as part of Area 1 ESIA report.

Figure 2-3 OHTL Routes



3 BASELINE CONDITIONS

3.1 Air Quality

The area has a temperate-hot semi-desert and dry desert climate. The Project site is located in a remote area and based on site visits and review of satellite imagery, there are no anthropogenic air quality influences in the Project area. Continuous monitoring was undertaken at one (1) location using a mobile monitoring station. All the measured parameters were found to have average ambient air values within Azerbaijan, WHO and EU standards.

3.2 Noise

The undeveloped and remote nature of the Project site means that there are very limited sources in the project footprint likely to result in anthropogenic sources of noise or vibration. A baseline noise survey was undertaken at six (6) locations; all recorded noise levels exceeded the national standards and this is attributed to noise from the wind (>10m/s), with the highest noise reading coinciding with the highest wind speed recorded.

3.3 Land Use

Based on the outcome of the interviews, consultations and herders survey undertaken for the Project, the following land users have been confirmed for Khizi 3 WF Project site:

- Seasonal framers of who graze livestock at the project site – These farmers are informal land users as they do not have valid land lease agreement with the Municipality); and
- Herb collectors.

3.4 Biodiversity

Flora

Azerbaijan lies at a crossroads where the flora and fauna of at least three biogeographic provinces converge, resulting in high levels of biodiversity; representatives include species typical of Europe, Central Asia, and Asia Minor.

Biodiversity baseline studies were undertaken to assess the existing biodiversity and ecosystem services in the area that may be affected by the project. Ecology surveys were undertaken to provide site-specific baseline information on habitats, flora and fauna species within the project area. Survey boundaries were determined by understanding both the potential area of influence (AOI) of the proposed project as well as the Ecologically Appropriate Area for Analysis (EAAA) for various species.

Habitat mapping exercises and botany surveys were undertaken to understand land use and land cover and to identify any rare or endemic floral species. The ecosystems that the WF, BOP and laydown footprints encompass lowland steppe, highland mountain habitat and salt depressions/ salt ponds, which can provide potential mudflat/wetland-like habitat. The associated OHTL corridors passes through pockets of forest habitat and modified agricultural habitat. A total of 241 plant species were recorded, of which 13 species are threatened and/or endemic species.

Birds

The project area lies within important migratory flyways; the Black Sea/Mediterranean Flyway and West Asian-East African Flyway. There are three Important Bird Area (IBAs) within 15-25 km of the project site; Yashma Island, Alty Agach area and Mount Kargabazar and Mount Gush-gaya.

Given the potential for sensitivity of birds to wind farm developments, baseline surveying was undertaken utilising the Scottish Natural Heritage (SNH) guideline methods to provide adequate data for numerical Collision Risk Modelling (CRM). The wind farm area was surveyed year-round to ensure that seasonal changes in avifauna abundance and diversity due to migration and breeding were captured.

A number of species listed as Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) as per the Global IUCN Red List as well and endemic, range restricted and migratory species were found to have spatial distributions which overlap with the site. The surveys identified 85 species of which 4 are described as target species of concern because of IUCN status. Spring 2020 and 2021 surveys saw highest species diversity with 53 and 59 species respectively. Autumn and Winter seasons recorded similar number of species (39) and Summer seasons registered the lowest at 35 species (shorter, number of species and by season).

Breeding bird surveying, including nest searches comprised breeding bird walkover mapping survey to quantify bird flight activity. Surveying during Summer 2020 and Summer 2021 included nest searches and transects focused on identifying breeding birds. Lesser Kestrel was identified as likely breeding in colonies in the area.

Bats

The proposed site is located on the northern shores of the Azerbaijani sector of the Caspian Sea between the Caspian Lowland and the south-western end of the Greater Caucasus Mountains. It is located within a broad route known to be used by migratory bats *Pipistrellus nathusii, Nyctalus noctula and Vespertilio murinus*. The EAAA was surveyed using passive and active acoustic monitoring, and mist netting techniques to determine potential swarming and migration movements. Roost searches were undertaken to identify colonies and roosting locations in the wind farm area. Bat activity was determined to be relatively low. A total of 15 species of bats were identified during the surveys. No roosts were located within the project area.

Mammals

A total of 13 species of mammals were recorded in the survey area including the Small five-toed jerboa, Libyan jird, European hare, Golden jackal and Red fox using a combination of diurnal and nocturnal surveying. Only one threatened species, the Goitered Gazelle listed as Vulnerable on the global IUCN Red List was recorded at the WF (was rarely recorded) area as well as at the OHTL segment furthest from the WF.

Reptiles and Amphibians (Herptiles)

A total of 15 herptile species were registered in the survey area. The majority of species are listed as Least Concern (LC) on the IUCN Red List as well as the Azerbaijan Red Data Book. The exceptions are; European Pond Turtle *Emys orbicularis* recorded as NT, and Mediterranean Tortoise *Testudo graeca* recorded as VU on the IUCN Red list.

Insects (Entomofauna)

Entomofauna survey finding of the wind farm area reflected the diverse and rich entomofauna of Azerbaijan. Among the 25 insect species recorded in the Khizi-3 project site, three are rare and have been listed in the Azerbaijan Red Data Book; *Saga ephippigera, Deleproctophylla variegata and Bubopsis Andromache*.

Critical and Priority Species

The findings of the biodiversity baseline studies confirmed that the project area has a diverse and abundant distribution of flora and fauna species. A number of these biodiversity elements has been identified as elements of conservation concern. The EBRD PR6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources requires that baseline studies conclude with a critical habitat assessment (CHA) to determine if any features in the project area qualify as priority biodiversity features or critical habitat.

A CHA was undertaken for the project, which identified species of concern which have the potential to trigger criticality for the project's area of influence. It was found that the project area has a relatively low risk of triggering criticality for the majority of identified potential species of concern. The review indicated that Critical Habitat has been triggered in reference to one species: Steppe Eagle. Other identified species of concern, including nationally listed bird, mammal, and reptile species, as well as range-restricted and endemic flora species, were classified as Priority Biodiversity Features (PBFs).

3.5 Soil, Geology and Groundwater

Soil samples were collected from the WTG site, laydown area, BOP and OHTL route. Laboratory analyses established that the area has a slightly alkaline pH and the majority of parameters are well within the national standards; however, nickel and zinc samples often exceeded the

national standard but comply with the Dutch Intervention Values and are typical of the region. Groundwater was not encountered at any level during drilling works at the Project site.

3.6 Drainage and Water

Surface water in the Project area is very limited and includes a water harvesting structure and a dry lake which only fills during rainfall events. The closest surface water is Takhtakorpu-Jeyranbatan water canal located approximately 2.2 km to the east (from closest WTG) of the project area.

Water samples were collected from surface waters near the WTG's and surrounding area and also at two locations along the OHTL to characterise the natural baseline. The results show highly varied water quality with two samples from the lake showing high salinity (conductivity >42,000 uS/cm) whilst all other samples indicated "freshwater". The lake samples also had relatively high cadmium compared with other sample locations. Turbidity and suspended solids also varied by 10-fold from 27.3 to 276 NTU and 18 to 202 mg/l., respectively.

The sewage indicator *E. coli* was detected in three samples, including the water harvesting structure used by seasonal herders.

In terms of flooding, the entire region has unstable flow patterns with dry riverbeds in summer and seasonal streams in spring and autumn with potential for local flood events.

3.7 Waste and Wastewater

At the local level, the waste management services including proper waste collection, transportation and disposal are non-existent. Villagers of Sitalchay and the villages in the Project area manage waste by burying it in the land around their homes, burning, or dumping it outside the village. The waste management facility closest to the Project area is in Sumgayit, around 20 km southeast of the Project. This has been confirmed in consultation letters with the Head of the Khizi District Executive Power, received on 7th October 2021, however, based on consultations with the local consultant, this facility is not suitable for waste arising from the Project.

Regarding wastewater, consultation has been conducted with "Azersu" Open Joint Stock Company, and in a letter received on 8th October 2021 they confirmed that, at the local level, there are two sewage pumping stations and one wastewater treatment plant in the territory of the Khizi district.

3.8 Archaeology

Four (4) archaeological surveys were carried out by the Azerbaijan Academy of Sciences, Institute of Archaeology and Ethnography of ANAS (AAS IAE) for the Khizi 3 WF project (WTG, roads, cables, substations, laydown, access roads and OHTL) from May 2020 to July 2021.

The surveys undertaken to date identified 60 sites within the project area. Based on the survey findings, all archaeological sites were found by the survey team to be of local significance. No sites of national or international significance were identified throughout the survey.

The area with highest sensitivity was identified around the dry lake where remains of a human settlement and potential graves with together with three burial mounds have been identified. The final survey report and Letter issued by the Institute recommends that this area 'salt/dry lake' and all project areas to be monitored by a team of archaeologists during earth works and construction works.

3.9 Landscape Character, Visual Amenity and Lighting

Within the study area there are three distinct landscape character areas, ranging from 'Medium' to 'Low' sensitivity.

There are no receptors that are considered to be 'critical visual receptors' There are also no national historic sites locally, where the visitors could be considered critical receptors nor are there any tourist sites or recreational destinations nearby where the views of the project area are valued either locally, nationally or internationally.

Generally, the site is intrinsically dark. A lack of light sources was noted across the site and surrounding areas, with the only sources of light being security lighting and internal residential illumination.

3.10 Climate Affairs

There has been an Increase in temperatures across Azerbaijan of 1.3 °C in 2010, relative to the normal average annual temperatures observed in the period 1961 – 1990. Temperatures during the summer months of June, July and August 2010 for the Capital city Baku were 2.9 – 3.2 °C higher than the 1961 – 1990 baseline.

Trends in precipitation in Azerbaijan are variable with a degree of uncertainty. The amount of precipitation, seasonal and annual is determined by the interaction of air masses with the landscape and the Caspian Sea. Azerbaijan has also seen an increase in extreme events such as floods and droughts in recent years.

4 SUMMARY OF MAIN ENVIRONMENTAL & SOCIAL IMPACTS

4.1 Air Quality

Temporary construction activities may result in increased dust generation and gaseous emissions on local agricultural receptors and a seasonally used shelter. Such impacts are expected to be minor in significance and able to be well managed through the implementation of the CESMP. The operation of the project is not expected to result in any impacts to air quality.

4.2 Noise

Temporary construction noise and vibration impacts are expected to arise from construction activities at the site and OHTL route and the use of access roads. Impacts are expected on a range of receptors including the shelter, and agricultural and military receptors, however, after implementation of mitigation measures, impacts are expected to be negligible to minor.

4.3 Operation Noise

A noise assessment has been undertaken for the Khizi WF project in accordance with the World Bank Group/International Finance Corporation's guidelines for Wind Energy as well as that permitted under national legislation of the Republic of Azerbaijan. The 162.5MW wind farm will comprise of 25 Envision (6.5MW) and ancillary equipment. The EN171 turbines are at a hub-height of 100m.

Noise levels at a sample set of receptors were calculated using a modified version (for wind farms) of ISO 9613-2:1996, for each of the turbine options and assessed against the criteria outlined by WBG/IFC environmental guidance on Wind Energy projects. The WB/IFC guidelines are considered in two parts; part one is for the initial study to ascertain whether any of the receptors are above a threshold value of 35 dB LA90,T and part two is the assessment of receptor noise levels against the general guidance criteria of, for example, residential receptors, 55 dB LAeq,day or 45 dB LAeq,night (corrected to 53 dB LA_{90},day and 43 dB LA_{90},night). In addition, criteria based on measured background noise levels is also permitted.

The assessment concludes that two receptors are below the initial WBG/IFC guideline value of 35 dB LA_{90},T and therefore further background noise surveys have been undertaken. These surveys indicated that all receptors (including the cumulative effects of the existing Yeni Yashma Wind Farm) are in compliance with either the WBG/IFC General Guidelines or the background noise level derived criteria based upon the Azerbaijan national standards.

4.4 Biodiversity

A comprehensive biodiversity impact assessment was undertaken. Sensitive ecological receptors anticipated to occur within the area of influence were identified and evaluated against potential impacts arising from different phases of the project. The construction phase of the project was initially predicted to have major to moderate impacts within the AOI including potential habitat loss, biodiversity loss, biodiversity displacement, biosecurity risks and deterioration of environmental quality. With the implementation of both general control measures as well as species-specific mitigation measures, residual impacts are predicted to be minor to moderate.

Operation of the wind farm project poses a threat to birds and bats due to the potential for collision with moving turbines. The magnitude of risk and significance of the potential impact is highly dependent upon the location of the wind farm and landscape context, spatial layout, height and length of turbines, and the types and numbers of birds present. Quantitative assessment was undertaken by utilizing a Collision Risk Model (CRM) developed as per SNH Guidelines.

No tier 1 target bird species are predicted to experience collisions more frequently than one fatality per 4 years (Steppe Eagle) under the most likely collision avoidance rate scenarios modelled and collisions for Egyptian Vulture, Pallas's Fish Eagle and Saker Falcon, would be less than once in 74 years. Three tier 2 target species are predicted to experience more than one fatality per year under the most likely collision avoidance rate scenarios including (Cinereous Vulture Eurasian Griffon and Lesser Kestrel.

The mitigatory measures that serve to reduce impact as well as compensatory measures to offset any net loss will minimise the impact to minor to moderate for all species. In particular, adaptive management programs are proposed for long-term monitoring of avian turbine collision mortality, along with shut-down on demand (SDOD) programs for peak migration period in select areas of the wind farm.

The following mitigation measures will be implemented to further reduce collision risk:

- Upfront Shut-down on Demand (SDOD) will be in place for Egyptian Vulture, Steppe Eagle, Saker Falcon, Greater Spotted Eagle, and Eastern Imperial Eagle. This means that turbines will be stopped when any of these three species approach WTGs within a risk radius (currently being defined). The mechanism of SDOD will be observer-led for the first three years, after which time, an automated process led by technology sensors may be installed. The exact methodology for SDOD will be detailed in the Collision Risk Management Plan (CRMP).
- Planned infrastructure within the wind farm shall not include elements attractive for birds, such as lattice towers that provide perching possibilities
- The turbine towers shall be painted black from ground level until the beginning of the rotor swept area; a single blade shall be painted black from

the tip to halfway up the blade to reduce motion smear and increase visibility of moving turbines to birds.

- A Collision Risk Management Plan will be formulated which includes the following:
  - Acceptable Mortality Thresholds in line with No Net Loss (NNL) for all priority species, which are calculated on the basis of Potential Biological Removal;
  - 3 years of Post-Construction Fatality Monitoring (PCFM), which includes carcass searches, searcher bias trials, and persistence trials, and correction factors to be applied for estimating fatalities;

For bats, cut-in curtailment is proposed as a precautionary approach to reduce bat collision risk, which will be tailored and site-specific based on seasonal and meteorological conditions.

Upfront Experimental Curtailment will be in place from the start of operations. This means that half of all turbines (in an alternating pattern) will be curtailed (stopped from spinning) during the following 6-week period when all the following conditions are met:

- Time Period: August 15 - October 1
- Wind Speed <6m/s
- Duration: 2 hours immediately before and after sunset; 2 hours immediately before and after sunrise

The upfront experimental curtailment will be in place for a total of 3 years. After this time, should there be no significant difference between experimental curtailed turbines and control turbines, the upfront curtailment will be stopped following consultation with lenders.

For many endangered species worldwide, electrocution by powerlines is considered to be the number one conservation threat contributing to population decline. In particular, larger-bodied birds which tend to prefer perching at high altitudes have the highest risk for electrocution. As there are a number of susceptible species including the critical Steppe Eagle, the significance of unmitigated bird OHTL electrocution impact was found to be major. However, OHTL design interventions are proposed including the use of appropriate insulators as well as adequate spacing of the live components. These are highly effective mitigation measures, thus the residual significance is negligible to minor.

Overhead transmission lines are visually difficult to detect. Particularly at risk are birds migrating between 20-50m altitude, birds flying at night, birds flying in flocks, and / or large and heavy birds of limited manoeuvrability. Unmitigated OHTL collision risk of various bird species was predicted to be of major to moderate impact significance. Given the implementation of mitigation measures such as inclusion of bird visual diverters as well as habitat modification to reduce flying through the risk zone, the residual significance is down listed to minor.

Khizi 3 WF will have neighbouring developments located near Cayli, termed Area 1 WF. Further, an existing wind farm, Yashma Wind Farm, is located near Khizi 3 WF. Three windfarms in the same region may have cumulative biodiversity impact. The potential cumulative effects of the

operational wind farms are mainly on avifauna. The cumulative impact from sister windfarms Khizi and Area 1 remains minor, due to the implementation of anti-collision and anti-electrocution design and management mitigation.

However, when assessing the cumulative impact inclusive of Yashma Wind Farm, a precautious approach has been taken due to the lack of data regarding bird and bat mortalities, and/or management programs at the existing wind farm. The cumulative potential impact of all three wind farms due to bird and bat turbine collisions is calculated to be of moderate significance. However, this could be reduced if Yani Yeshma introduced similar adaptive mitigation measures.

4.5 Soil, Geology and Groundwater

During construction, impacts on soil and groundwater could arise from a number of activities. These include excavation and soil compaction, accidental spills or leaks, disposal of wastewater and inadequate management of waste. Since groundwater was not encountered at the Project site, it is not expected that any contamination will reach groundwater. Specific project impacts to soil, groundwater and geology are not expected during the operational phase. Potential risks of concern during the operational phase are expected to be limited to the management and storage of the very small quantities of materials/wastes/wastewater, chemicals and fuels. With the provision of the mitigation measures recommended in the ESIA, no significant environmental impacts are envisaged.

4.6 Drainage and Water

During construction, the water environment has the potential to be impacted directly and indirectly by the construction activities. However accidental spillage of fuels, chemicals, and wastewater which might contaminate nearby water sources (water harvesting feature, lake, etc) used by herds and native fauna as a source of water is unlikely, as they will be contained within bunded structures with 110% storage volume as a minimum. Any impacts however unlikely would be temporary and limited to the construction phase and be generally within the Project area.

The key uses of water during the construction are expected to be for personal consumption, domestic use, dust control, batching plant, civil works and commissioning. The water required for the project will be sourced from the State Water Agency (Sumgait City Water and canal Department of "Azersu" JSC) and will be supplied to site through tankers. EPC will ensure a Water Management Plan is implemented to reduce and monitor water consumption. The ESIA outlines appropriate mitigation and management measures that can be implemented to suitably manage water consumption during the construction phase.

The construction activities may result in changes in the direction or natural flow of surface water from the site and associated facilities which can potentially divert water flows away from vegetated areas or result in flooding having a direct impact upon nearby communities and land. Therefore, the EPC will provide an Erosion and Sediment Control Plan to establish the management controls to prevent sediment runoff and flooding prior to clearance of the site.

During operation, limited impacts are expected from the management and storage of hazardous materials, wastes, wastewater and during operation. These include accidental leaks and spillage, inadequate temporary storage and handling of sanitary wastewater prior to being removed for disposal. Such instances are considered most unlikely as all such chemicals, wastewater etc. will be stored inside bunded structures and buildings with impermeable base and where appropriate with secondary containment. Potential risks may occur from improper stormwater management which can result in significant negative impacts. With the provision of the mitigation measures and adhering to the recommendations in the Hydrology Study undertaken for the project and in the ESIA, no significant environmental impacts are envisaged

4.7 Waste and Wastewater

Construction of the project will result in the generation of waste due to excavations, packaging wastes, and very small quantities of hazardous wastes (such as used fuel containers, spent paint cans, lubricant cans and oil cans, vehicle/plant maintenance wastes). During operations, there will be relatively few waste streams, although maintenance wastes may be generated in small quantities on a continued basis. Wastes will be minimal and varied but may contain small quantities of hazardous components. The ESIA outlines appropriate mitigation and management measures that can be implemented to suitably manage waste during both project phases.

4.8 Archaeology

There is a high frequency of archaeological features on the site and construction activities have the potential to damage or impact these archaeological sites. To prevent any damage during construction, these will be clearly marked and/or fenced off (temporarily) by EPC Contractor, to ensure equipment and construction activities do not encroach onto the known archaeological sites. As required by the Ministry of Culture and Tourism, a number of archaeologists will be on site during construction to monitor construction in these sensitive areas. The archaeologists conducting the observation and monitoring will also regularly inform construction workers about the archaeological procedure and conduct induction sessions. An archaeological 'Chance Find Procedure' will be developed prior to any access road earthworks, site survey, preparations or early construction.

The operational phase will not result in further impacts to archaeology, as the site will be static and further excavations are unlikely to be required. During maintenance works there is a very low risk of damage to archaeological sites due to a vehicle accident in the event of "off-roading" and not using the service road.

A Cultural Management Plan will be developed for the construction and operational ESMS to include locations and procedures to ensure protection of all known archaeological sites.

4.9 Landscape Character, Visual Amenity and Lighting

The development of the Project will lead to changes in landscape character and visual amenity; however, it is noted that there are no critical visual receptors or listed heritage sites and the landscape character has capacity to manage the change. Lighting of the WTGs will be limited to the red lights required for aviation safety.

The area already has existing wind farms, including the Yashma Wind Farm, which are situated approximately 4 km from the Project and closer to the M1 highway and the settlements of Sitalchay and Shuraabad. Therefore, the installation of turbines will not be setting a new precedent for the region.

4.10 Shadow Flicker

A shadow flicker assessment has been undertaken for the proposed Khizi WF project in accordance with the WBG/IFC guidelines for Wind Energy. The Shadow flicker effects have been considered by using by the software suite 'WindPRO' (v3.5). The 162.5MW wind farm will comprise of 25 Envision (6.5MW) and ancillary equipment. The EN171 turbines are at a hub-height of 100m. The existing Yeni Yashma project comprises of 20 Fuhrlander FL 2500 WTGs with total capacity of 50MW (hub-height at 85m).

None of the modelled receptors exceed the IFC criteria (30 hours per year or less than 30 mins per day, worst-case) and therefore, mitigation measures are not required for any of the receptors.

4.11 Traffic and Transport

Wind turbines are manufactured abroad and transported to the country then transferred to the Project site for assembly and installation. The transport method will be carried out using a combination of road and sea transport. The Project will require an estimated number of 19 shipments for transporting the components. Appropriate roads are needed for site access and the hauling of equipment and turbines. Given the number of turbines expected for the Project, this will entail a total of 300 trips from the port to Project site. If improperly planned and managed, the trailers hauling the heavy Project components can potentially damage the existing highways, bridges, overpasses, roads, utilities, and other structures. Construction

activities will also result in an increase of the numbers of movements of HGVs and other vehicles for the delivery of heavy plant, equipment, materials, and transportation of Project staff. Close coordination will be required with the maritime and road transport authorities to manage the transport of materials for the Project, which will be detailed ion a Traffic Management Plan. .

4.12 Community Health, Safety and Security

All construction projects have potential risks relating to public safety that could arise, particularly in regard to the use of high-powered equipment, heavy construction plant, excavations, transportation amongst others, including fire and pollution releases. Public risks during construction have the potential to result in isolated incidents, which could be of a devastating magnitude to a person or group of people in the wrong place at the wrong time. Risks that could be experienced include worker influx and disease (such as COVID-19, Sexually Transmitted Illnesses (STIs) and skin infections), Gender Based Violence and Harassment (GBVH), Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH). The Project will develop a Worker Influx Management Plan to manage the potential risks associated with worker influx in the Project area. Other risks will be appropriately assessed and prepared in the construction phase 'Emergency Preparedness and Response Plan' and training. Furthermore, security staff will be onsite during both the operation and construction phase.

The operational phase of the Wind Farm will include various risks that could result in impacts to public safety. With regards to blade throw, the minimum set back is set to 273 m for the project. This is based on IFC EHS for Wind Energy setback requirement, which is 1.5 x turbine height (tower + rotor radius).

For ice throw, the maximum falling distance of ice for the Envision EN 171/6.5 is calculated to be 406.5 m. This is based on the International Energy Agency on Wind Energy Projects in Cold Climates and referenced in the IFC EHS Guideline on Wind Energy 1.5 x (rotor diameter + hub height).

There are no local communities/villages within close proximity to the WTG. Sitalchay village is located approximately 10 km from project area, therefore will not be impacted in the highly unlikely event of failure of a wind turbine. The seasonal farms surrounding the WTGs are all located outside the project boundary and Area of Influence; therefore, all receptors are considered of Low significance. Given the distance of the WTGs to the nearest local community and the fact that the wind turbines will be subject to continuous monitoring and regular maintenance, the likelihood/risk of blade and ice throw is anticipated to be negligible.

4.13 Labour and Working Conditions

The risks associated with the construction and operational phase of the project are anticipated to be related to occupational health and working conditions risks. ACWA Power HR Policies and Management Plans will be prepared for the Project to ensure that workers'

rights and conditions are fully protected in accordance with ILO, in addition to EBRD/IFC guidance on worker accommodation, together with a grievance mechanism process. The plans will also be fully adopted by the EPC and sub-contractors. The impacts during operation are expected to be significantly less than during the construction phase due to reduced site activity and requirements for heavy plant and machinery. These risks will be managed through effective risk assessment, development and implementation of an Occupational Health & Safety (OH&S) Plan.

4.14 Climate Affairs

Fuel combustion during the construction phase for diesel generations and mobile plant will results in GHG emissions, however, the primary operation of the Project will lower the carbon intensity of Azerbaijan's grid electricity and result in avoidance of CO_2 emissions. Fuel combustion from the use of operation vehicles and emergency diesel generators will be negligible.

Although climate change will result in increased temperatures, droughts and flood risks, these are not expected to pose a significant risk to the Project. As a renewable project, climate transition risks are also not anticipated.

5 Environmental & Social Management & Monitoring

Both the construction and operational phase of ESMS will need to incorporate mitigation and monitoring requirements established within Volume 2 of the ESIA as well as requirements set out by the MENR and the Lenders.

Volume 3 of the ESIA provides a framework for the development of the Environmental and Social Management System (ESMS) for the construction and operational phases of the Project. The framework has been developed to ensure that all environmental and social impacts identified for both construction and operational phases are appropriately identified and controlled through the development of a robust construction and operational phase ESMS.

Both the construction and operational phase of the ESMS will incorporate mitigation and monitoring requirements established within Volume 2 of the ESIA as well as requirements set out by the Ministry of Ecology and Natural Resources (MENR) (national Environmental Regulator) and the Lenders.

The primary documents guiding the environmental and social management of the construction and operational phases will be the Construction Environmental and Social Management Plan (CESMP) and Operational Environmental & Social Management Plan (OESMP) respectively. These will be supported by Supplementary Management and Monitoring Plans.

5.1 Independent Auditing and Monitoring

The Project will be subject to periodic independent monitoring in accordance with the requirements of the lenders Environmental and Social Action Plan (ESAP) and an Equator Principle Action Plan (EPAP) if the Project is financed by institutions signatory to the Equator Principles . The scope of the independent audits will include the implementation of the project ESMS and will evaluate on-site activities and documented controls and monitoring efforts, with respect to the Project's compliance obligations

6 PUBLIC CONSULTATIONS

Stakeholder engagement and consultation commenced during the scoping stage of the Project and progressed through to the ESIA. A systematic approach was used to identify the project impacted stakeholders and those who may have interest in the project. Public consultation and meetings were held with directly affected communities, local government authorities and land users including member of Sitalchay village, local municipality and herders using the Project site Where community members or land users were not able to attend due to COVID-19 restrictions, the local consultant team distributed Project brochures which included Project information and grievance mechanism. Interest based stakeholders such as national, regional, local authorities and experts were engaged via letters, emails, virtual meetings, telephone calls and telegram.

Two (2) public disclosure meetings were undertaken on 8 and 10 January 2022 at Sitalchay village. The objectives of the meetings were to provide information on the project, publicly disclose the results of detailed ESIA and give an opportunity for national and local government and stakeholders and interested parties to comment on the ESIA findings.

Due to the COVID restrictions imposed in Azerbaijan, a maximum of 50 people were allowed to attend each meeting. The meetings were held over a weekday and weekend, to ensure maximum number of participants of attendance. The meetings were held at the village Sports Club yard. Meeting announcement and invitations were sent out 10 days prior to meetings and announced in the press and project website (www.azerwind.az). Invitations letters were also posted in the village and sent out to NGOs and state agencies as shown below.

A Public Information Centre (PIC) was established by ACWA Power at Sitalchay Village on 15th June 2021 to provide information on the Project to the members of the community, receive grievances and facilitate local recruitment for the Project. A Stakeholder Engagement Plan (SEP) has also been developed for the Project which outlines the proposed methodology for stakeholder engagement throughout the lifecycle of the Project. The grievance mechanism for the Project during the construction and operation of the project is also outlined in the SEP.

During the 60 day ESIA Public Disclosure process there will be further consultations with NGOs and local community at the PIC to obtain feedback and the resulting report will also be disclosed on the website of the Lenders and ACWA Power.