Absheron Wind Project
Azerbaijan

Environmental and Social Impact Assessment – **Volume 1: Non-Technical Summary**

April 2026

DOCUMENT INFORMATION

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2	Social Capital
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CONTENTS

1 WHAT IS THE PROJECT?

Note: Following completion of this Environmental and Social Impact Assessment, the layout of the Absheron Wind Farm has been revised.

The revised layout results in the removal of wind turbine generators (WTGs), while the majority of the other WTGs remain in similar locations. Due to the fact that the existing ESIA has assessed a Project layout with more WTGs, and a greater impact on environmental and social components, it has been determined that the most suitable means of highlighting the changes to the Project lenders, their advisors, the local communities and the national regulator is in the form of a technical addendum. The technical addendum has also been disclosed, in both English and Azerbaijani.

1.1 Project Overview

Azerbaijan, the host country for the United Nations Climate Change Conference (COP29) in November 2024, has expressed a commitment to developing its renewable energy potential. This initiative forms a crucial part of Azerbaijan's revised Nationally Determined Contributions (NDCs), with a target of reducing emissions by 40% by 2050 compared to 1990 levels.

Renewable energy, particularly solar and wind, is integral to achieving this target. The country's Ministry of Energy has also been active in mapping the renewable energy potential, including the development of an "Atlas" for renewable energy resources. The "Law on the Use of Renewable Energy Sources in Electricity Production" (May, 2021) provides a framework for renewable energy projects, introducing measures such as guaranteed tariffs for electricity produced from renewable sources, priority in transmission, and long-term land leases for project developers. The country intends to increase renewable power capacity to 30% by 2030 and diversify its existing energy system to become a leader in green energy.

Masdar is developing a portfolio of renewable energy projects in the Republic of Azerbaijan in collaboration with key national stakeholders, including the the State Oil Company of the Republic of Azerbaijan (SOCAR), supporting the country's renewable energy and energy transition objectives. The wider programme includes a combination of solar photovoltaic (PV), onshore wind and other renewable energy technologies across multiple locations in Azerbaijan. The Absheron Wind Farm, comprising wind turbine generators (WTGs), platforms, substation, access roads, hereafter referred to as the Project, forms part of this broader

renewable energy initiative and is being progressed in coordination with relevant national authorities and project stakeholders

Two other Masdar Azerbaijan projects, the Neftchala (Banka)[1] and Bilasuvar[2] Solar PV projects reached financial close in November 2024.

SCOPE OF THE DOCUMENT

5 Capitals Environmental and Management Consulting (5 Capitals) has been engaged by Masdar to undertake certain environmental and social studies during the development process of the Project, including the Environmental and Social Impact Assessment (ESIA) package.

This document constitutes the Non-Technical Summary (Volume 1) of the Project's ESIA.

1.2 Key Project Information

Table 1-1 Key Project Information

PROJECT TITLE	Absheron Wind Project
PROJECT DEVELOPER	Masdar and SOCAR Green LLC
EPC CONTRACTOR	TBC
O&M COMPANY	Masdar Specialised Technical Services (MSTS)
MASDAR REPRESENTATIVE	Murad Sadikhov Abu Dhabi Future Energy Company PJSC – Masdar Baku, Azerbaijan
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[1] https://masdar.ae/en/renewables/our-projects/neftchala-solar-power-plant

[2] https://masdar.ae/en/renewables/our-projects/bilasuvar-solar-power-plant

1.3 Project Description

Overview

Wind turbines harness the energy of the wind and convert it to electricity. The amount of energy produced by wind turbines increases with wind speed and modern turbines are able to adapt efficiently to extract energy from a range of wind speeds.

Wind speeds typically increase with height above ground as turbulence (due to topography and ground features) intensity decreases. This typically allows turbines with higher hub heights to produce more energy than a turbine with a lower height at the same location. In addition, longer blades (the rotor radius from the turbine) significantly increase the swept area from which wind energy can be extracted.

The project is a wind farm comprising 26 WTGs. 13 WTGs are located south of the M4 highway and 13 are located north of it. The Envision EN 182-8.0MW Steel Tower Turbine model has been selected and will have the specifications outlined within the following table.

Table 1-2 Project Details

Parameter	Unit	Details
IEC wind turbine class	-	IEC-S
Manufacturer	-	Envision
Turbine type	-	EN-182/8.0
Rated power	MW	8
Number of blades	-	3
Blade length	m	91
Rotor diameter	m	182
Hub height	m	105 / 120
Tip height	m	196 / 211
Blade material	-	GFRP
Tip speed	m/s	90.7
Tower type	ST/CT/HT	Steel
Cut-in Wind Speed	m/s	3
Cut-out Wind Speed	m/s	25

Substation

A GIS 35/330kV sub-station will be located in the centre of the Project area.

External Access Roads

Based on preliminary layouts, the project will have five access roads from the M4 highway. Due to the proximity of the highway, the access roads will be short (< 1km) and typically along existing tracks.

PROJECT ANCILLARY/SUPPORT FACILITIES

The following ancillary facilities will be included in the Project design:

- Site entrance and security building
- Administration building, offices and amenities
- Central Control Room
- Warehouse and stores
- Security
- Lighting
- Access roads and underground transmission lines along the access roads between turbines
- Other mobile plant and vehicles

The indicative layout of the Project is shown on the following figure.

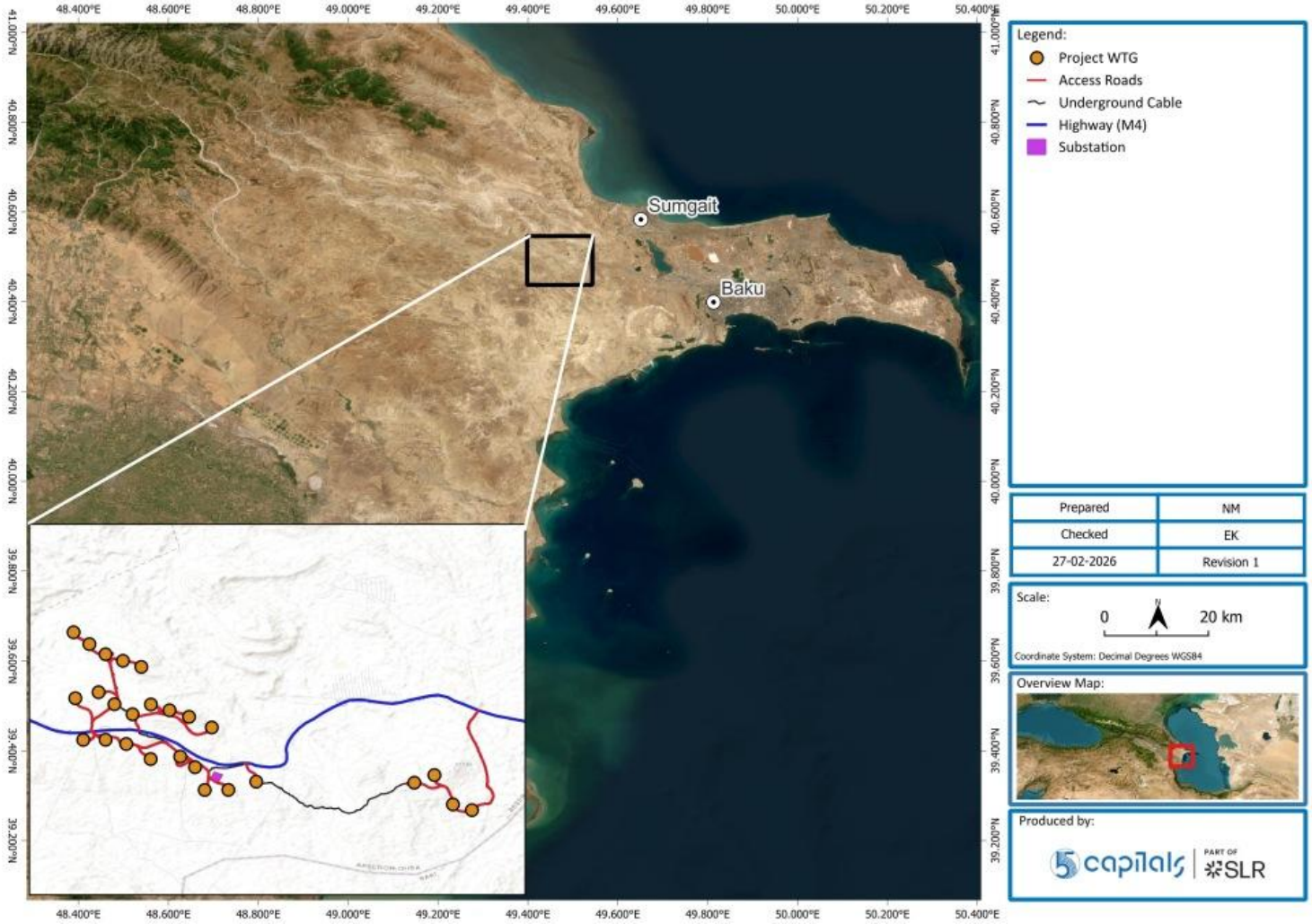

Figure 1-1 Indicative Project Layout

1.4 Construction

1.4.1 Construction Activities

The principal construction activities and associated requirements in relation to the wind farm are anticipated to include the following;

- Transportation of components to the Project site;
- Delivery of machinery & equipment to the site;
- Construction of temporary laydown facilities and building site equipment (e.g. containers at the Project site);
- Site preparation (comprising excavation, grading, levelling, and land clearing at WTG platforms) to create flat land area for preparation of turbine pads, installation of wind turbine towers and various project components;
- Additional facilities to facilitate construction work (comprising excavation and levelling etc.) for access roads and the internal road network, construction of any building infrastructure;
- Erection of WTGs;
- Construction of the substation; and
- Commissioning tests of electrical infrastructure (including WTGs) and inspection of civil engineering quality records.

There will be no blasting activities required for the Project and borrow pits are not currently expected to be required.

1.4.2 Temporary Construction Facilities

TEMPORARY LAYDOWN AREAS AND OTHER FACILITIES

Temporary laydown areas will be required in the construction phase for the storage of materials and equipment by the EPC Contractor and their sub-contractors. In addition, construction offices, toilets, prayer rooms and car parking areas will be required.

Temporary construction facilities are planned to be within the substation area.

WORKERS ACCOMMODATION

The location of workforce accommodation is not yet confirmed. The EPC Contractor will determine the most appropriate location for the accommodation and will be required to conduct the necessary studies and engagement when selecting its location. It is considered likely that the workforce will be housed in a city such as Sumgayit. This was the approach taken on the adjacent ACWA Power project. Sumgayit is a city of approximately 500,000 people,

and due to the relatively small amount of manpower required for the construction of the Project, any impact on local communities is considered to be unlikely and negligible.

The accommodation will be required to align with IFC & EBRD Workers' Accommodation: Processes and Standards (2009).

1.4.3 Construction Workforce

The workforce during the peak construction period is estimated to be 400 - 500 workers. The manpower power required for the construction will be determined by the assigned EPC Contractor.

During the early stages of construction, the worker numbers will be low but will rise quickly from the time when the civils work begins. After the peak level has been reached, the workforce will gradually be reduced leading up to the start of operations.

The workforce will comprise a mix of highly qualified specialists, technicians and low-skilled personnel. Low-skilled construction workers will receive job-appropriate training before starting work on the Project. This includes basic training on health, safety and environment (HSE), labour management and, where required for specific job profiles, vocational training.

The low-skilled staff workforce will be encouraged to be sourced locally, and the skilled workforce will be first aimed to be resourced locally, then nationally, then internationally. At this stage it is expected that the majority of the workers will be local with 15 – 20% expatriates.

1.5 Operation and Maintenance

As per the Power Purchase Agreement (PPA), the Project lifetime is 30 years.

1.5.1 Activities

Wind farms generally require limited operational activities and typically include the following:

- Operation and maintenance to include normal daily operation of equipment including maintenance (electromechanical and housekeeping) to optimise energy yield and life of the system;
- Management of operations in relation to turbine shutdowns; and
- Routine planned preventive maintenance and unplanned maintenance (if required).

1.5.2 Workforce

The number of people that are to be employed during operation is expected to be approximately 10, of which 90% are expected to be from Azerbaijan.

1.6 Decommissioning

As per the PPA, the plant is to be operational for 30 years. Following the 30 years, the Ministry of Energy can decide whether to continue, upgrade or decommission the plant; this is outside the scope of this study and to be decided at that time.

Upgrading the wind farm will entail either replacing old WTGs with new ones, augmenting the total peak power of the plant, or enhancing the plant by incorporating new elements.

In the event of decommissioning, the site will be restored close to its original condition, with a Decommissioning and Site Restoration Plan devised prior to this phase, by the Project Company. This Plan will be required to be finalised and approved prior to the Project Company exiting from the Project.

The components of a wind farm plant possess value for either reuse or recycling. Hazardous wastes will be disposed of in compliance with the environmental guidelines mandated by Azerbaijan, while non-hazardous materials such as waste metals or plastics will be transported to designated recycling facilities, if available.

1.7 Project Milestones

Table 1-3 Project Milestones

MILESTONE	SCHEDULED DATE
PPA Signature	June 2024
ESIA Disclosure	Prior to Financial Close
Financial Close	June 2026
Notice to Proceed	2026
Commercial Operation Date	2028

2 WHERE IS THE PROJECT LOCATED?

The Project is located approximately 30 km west of Baku, WTGs are located in the Absheron District of the Absheron-Khizi Economic Region. Figure 2-1 depicts the location of the Project in Azerbaijan. The closest communities to the Project are Gobustan, Pirekeshkul, Mushfigabad and Ashagi Guzdak.

The project comprises 26 WTGs. 13 WTGs are located south of the Baku-Shamakhi M4 highway and 13 are located north of it, as is evident in Figure 2-2.

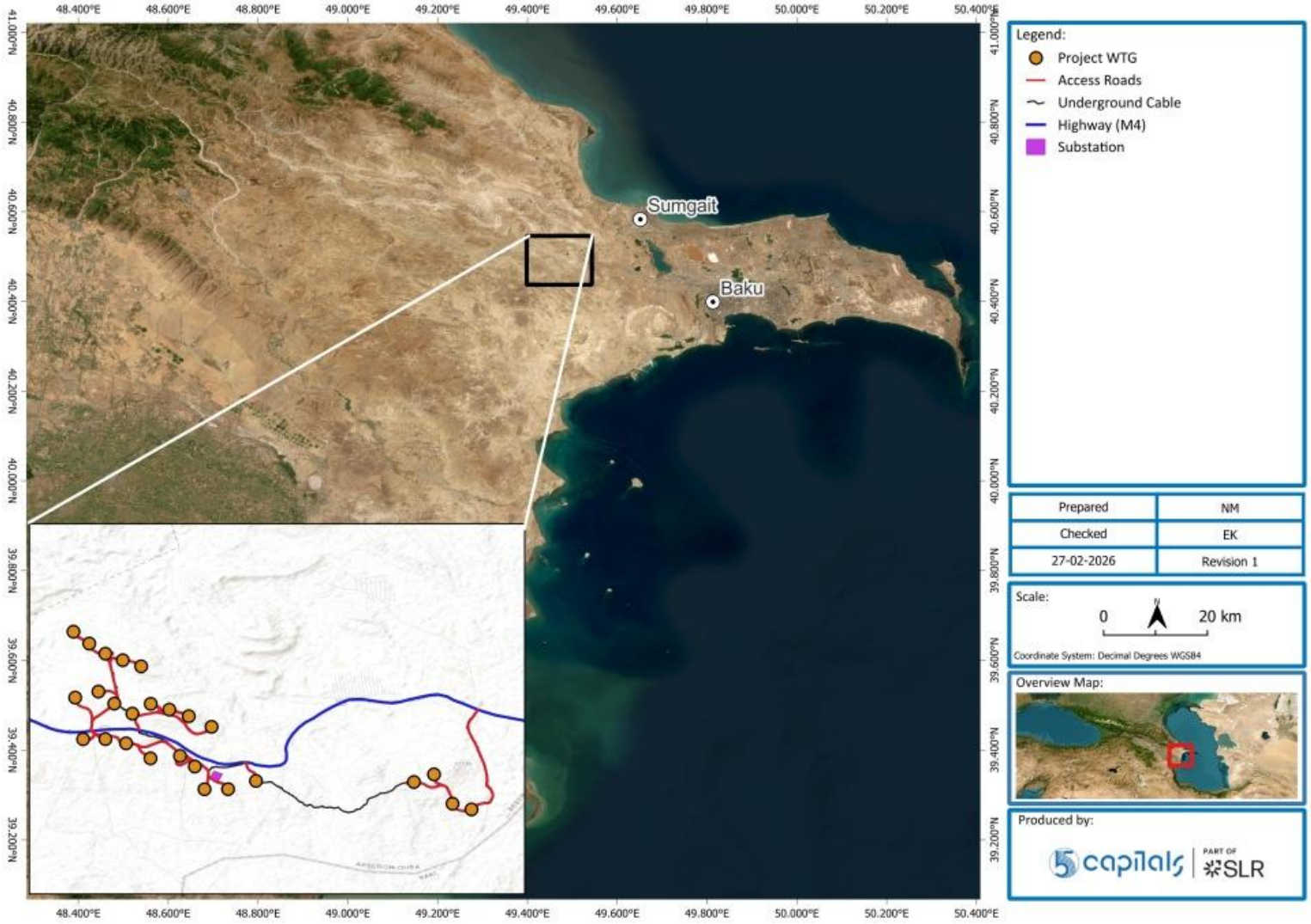

Figure 2-1 National Project Context

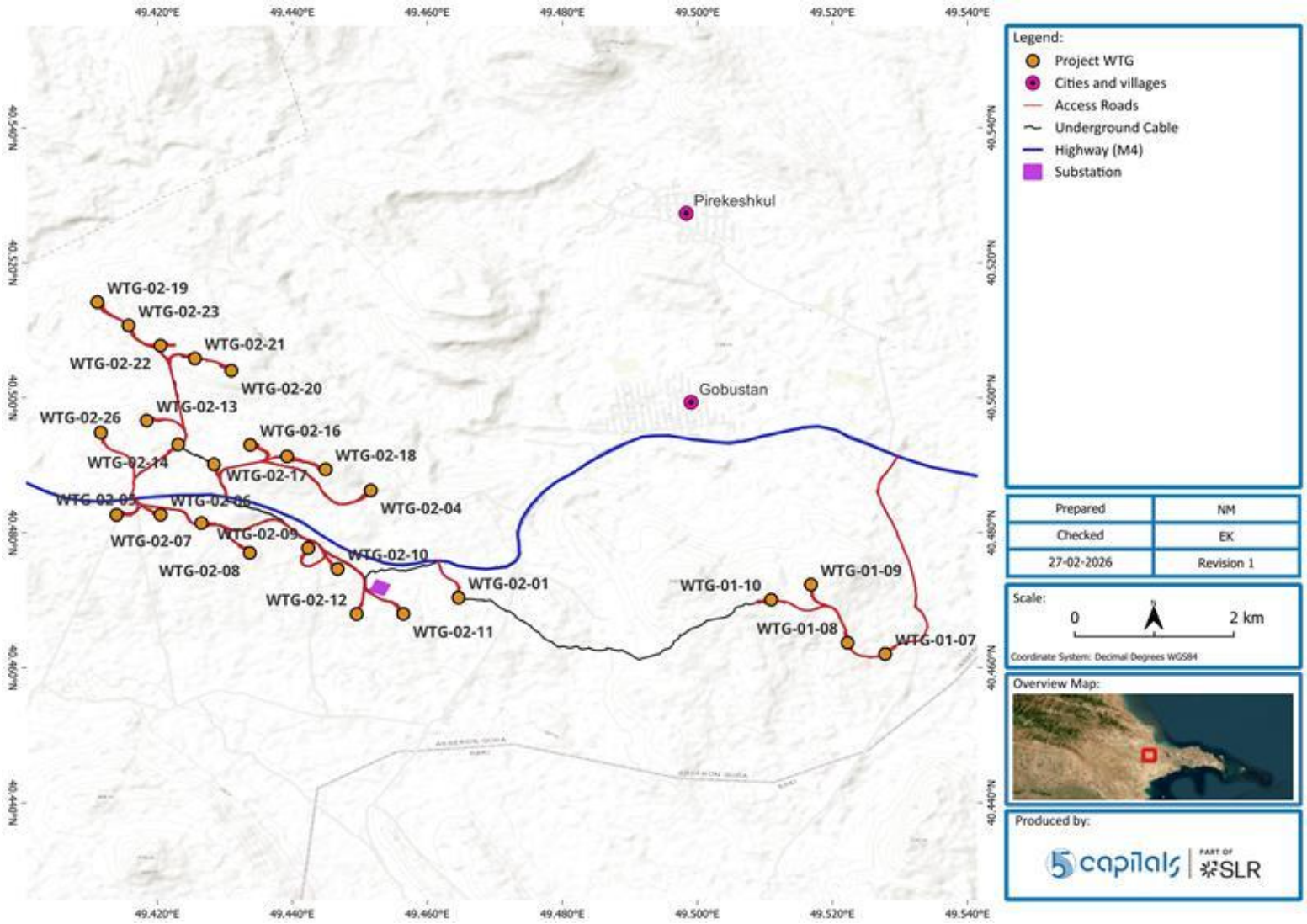

Figure 2-2 Local Project Context

3 What is the Current Situation?

3.1 Land Ownership

The Project lands consist of plots that are to be consolidated and announced as 'Renewable Energy Land Category' State Land under the possession of the Ministry of Energy by Decree of the Prime Minister. The land plots are as follows:

- 19.875 ha agricultural category (state land) Absheron district
- 11.25 ha agricultural category (municipal land) Absheron district

Upon completion of the land category change, the land certificate and land lease agreement are to be approved by the Cabinet.

3.2 Land Use and Site Conditions

The entire Project area is classified as semi-desert habitat with light to moderate grazing pressure. When grazing is conducted, it is typically conducted in the winter months, when the temperature in the region is more moderate than that of other regions in Azerbaijan.

The land allocated for the development of the Project WTGs does not include any structures or other permanent land use. With regards to structures closest to the Project, the closest is a herder structure approximately 400 m away from a WTG and another herder structure is approximately 650 m from the nearest WTG, and two fuel stations (neither of which are operational) and poultry farm are both within 700 m of the nearest WTG. All other identified receptors are located over 1 km from the nearest WTG.

3.2.1 Military Land Use

Military activity has been observed in areas close to the site, and a former barracks, understood to be abandoned, is located 4 km from the nearest WTG. An image of the abandoned barracks is shown in the following figure. In addition, an active military facility is located approximately 5 km from the nearest WTG.

Figure 3-1 Former Military Barracks

A consultation letter was sent to the Ministry of Defence to provide information about the Project and to request data and feedback that will be relevant to the preparation of the Project ESIA, including any details with regards to the abandoned barracks, military activity in the area and the potential for unexploded ordinance.

In response to the letter, representatives from the Ministry of Defence's Training Center and the project team (including staff from 5 Capitals and Masdar) conducted a joint site visit to the project area on 16 May 2025. After inspecting the proposed WTG locations, the Ministry representatives noted that, based on visual observation, no interference or restrictions are expected on the military lands during project implementation. In addition, the Ministry of Defence requested the coordinates of the WTGs located near military lands.

Following submission of the coordinates, the Ministry responded saying that there were some interferences with Military lands. Masdar, the Ministry of Defence and the Ministry of Energy had discussions to align on a path forward and subsequently the Project layout was revised.

3.2.2 Site Surroundings

COMMUNITIES AND SCHOOLS

The site is located approximately 3 km from Gobustan and over 5 km from Pirekeshkul, Ashagi Guzdak and Mushfigabad.

Two schools are located on the outskirts of Ashagi Guzdak, with the closest approximately 5.4 km from the nearest WTG.

COMMERCIAL RECEPTORS

WTGs will be developed to the north and south of the M4 highway and there are commercial receptors located along the road, these include restaurants, cafés, an almond orchard and two gas stations, neither of which are operational.

A number of poultry farms are present within the surrounding area, two are located within 2 km of the Project, with the closest (referred to as P-2) approximately 700 m from the nearest WTG.

ISOTOPE PLANT

An Isotope Plant is located along the Baku-Shamakhi highway, the plant is over 2 km from the nearest WTG.

The Plant falls under the responsibility of the Ministry of Emergency Situations of the Republic of Azerbaijan, as per The Ministry's website[3], *"Isotop" Special Enterprise functions in direction of radiological monitoring, receiving radioactive sources and wastes, rendering them harmless, their long-time storage and burying, transportation of radioactive sources, materials and equipments with radioisotope, decontamination of special clothes and personal protection equipments, radiological monitoring and decontamination in territories, organizations and enterprises exploiting radiation installations.*

Consultations were conducted with the Isotope Plant Director and the Deputy Head of the Department for Organizing Work with Regional Centres of Ministry of Emergency Situations on the 2nd May 2025. During this consultation the representatives of the Plant and the Ministry highlighted that one of the main documents referred to in the management of the Isotope Plant are the sanitary rules and regulations on radioactive waste management. According to these regulations, no construction and installation work that is not related to the activities of the Plant is allowed to be carried out within a 1 km sanitary zone.

AREA 1 AND KHIZI 3 WIND FARMS

Two wind farms are being developed to the north of the Project, the Area 1 wind farm and the Khizi 3 wind farm. Area 1 is approximately 5.2 km from the nearest Project WTGs, and Khizi 3 is approximately 19 km. The location of the wind farms relevant to the Project are shown in the following figure.

[3] https://fhn.gov.az/en/ministry/bodies/isotope-special-enterprise

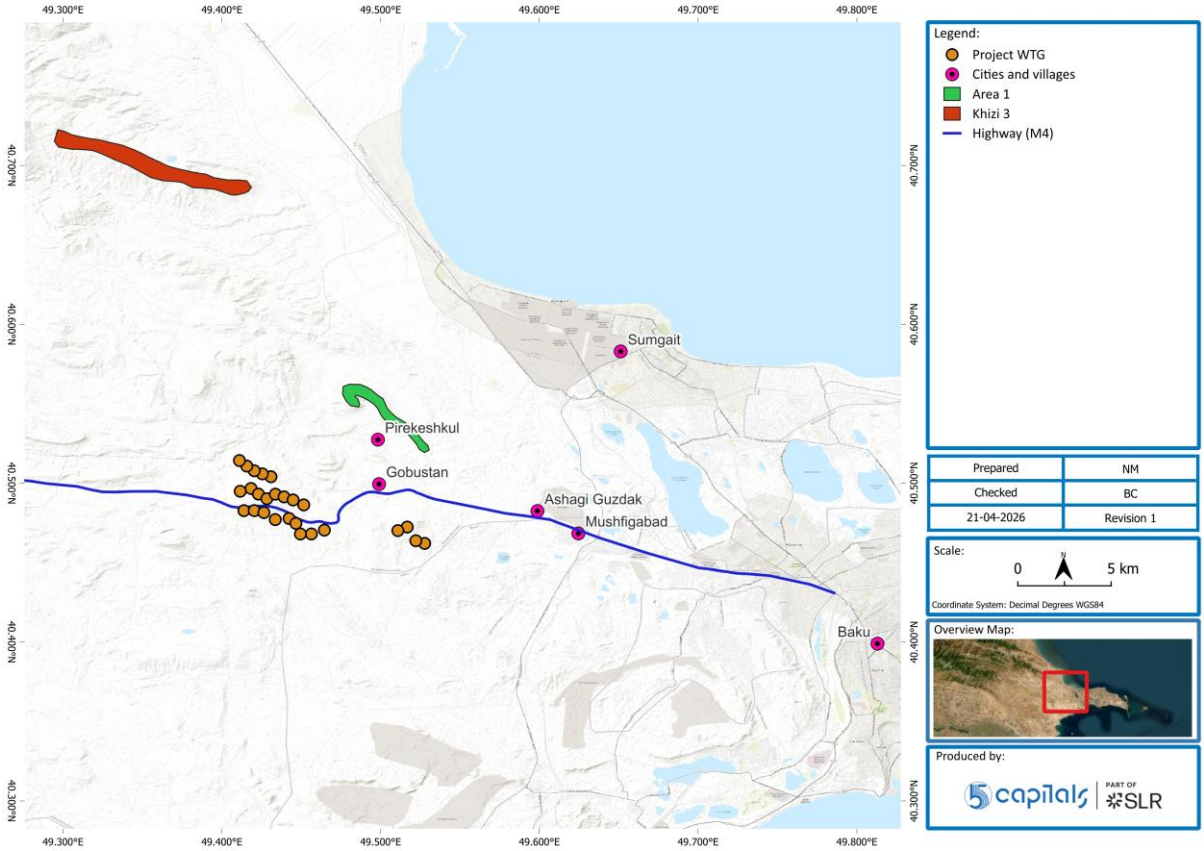

Figure 3-2 Relative Proximity of the Area 1 and Khizi 3 Wind Farms

The wind farms make up the Absheron-Khizi Wind Farm project in Azerbaijan, developed by ACWA Power[4]. EBRD[5] and the OPEC Fund for International Development (the OPEC Fund) have provided senior debt financing facilities for the Absheron-Khizi 240 MW Wind Farm in the Republic of Azerbaijan.

The ESIA considered cumulative impacts from the wind farms.

MUD VOLCANOES

Mud volcanoes are common in Azerbaijan, particularly in the Project area, and three are located close to the Project area, as shown in the following figure. The location of these three mud volcanoes was also confirmed during consultations with Ministry of Ecology and Natural Resources (MENR). Within their response to the consultation letter, a recommended setback distance of 600 m from the volcanoes was stated. This setback distance is respected for all WTGs, with the Pirekushkul Vulkan (Mud Volcano 1) being 600 m from the nearest WTG (02-09) and with the topography and major highway separating the WTG from this mud volcano.

[4] https://acwapower.com/en/projects/azerbaijan-wind-ipp/

[5] https://www.ebrd.com/home/work-with-us/projects/psd/52735.html

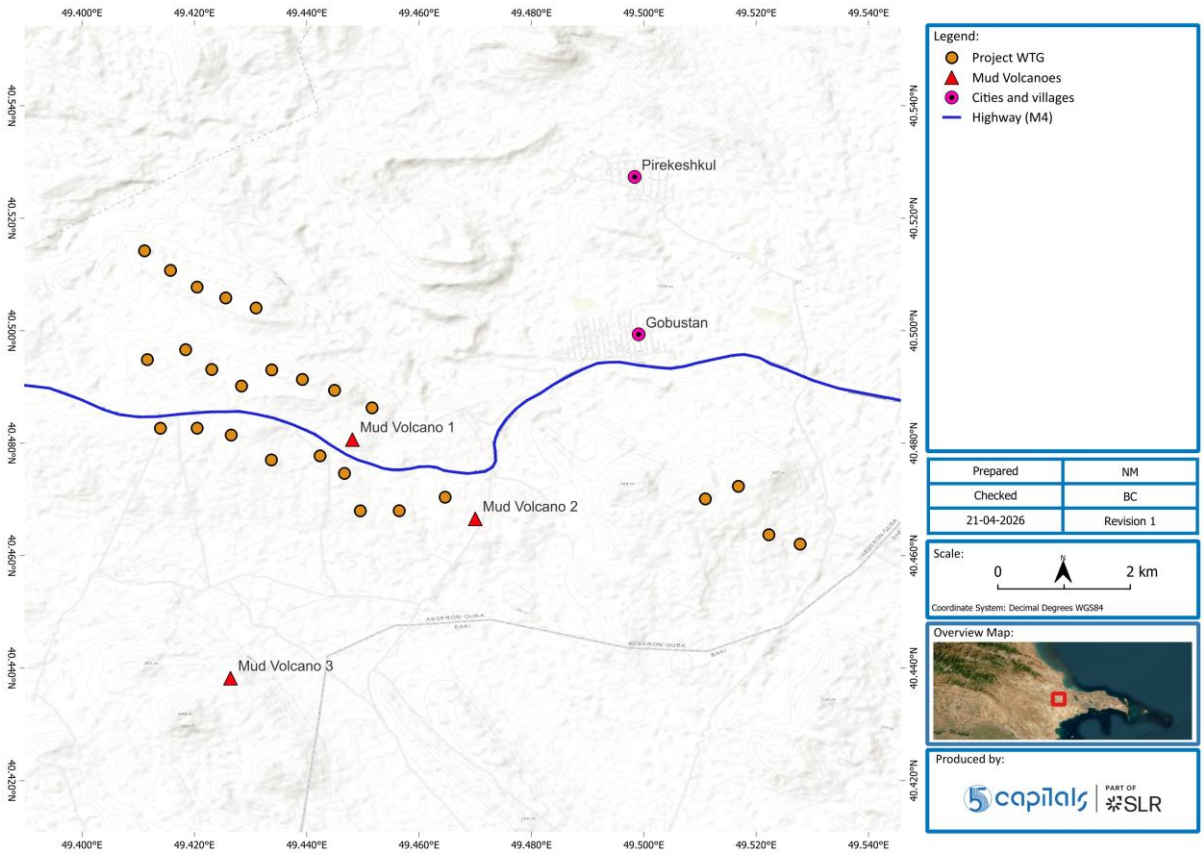

Figure 3-3 Location of Mud Volcanoes

AZERCOSMOS

The Space Agency of the Republic of Azerbaijan (Azercosmos), a public legal entity under the Ministry of Transport, Communications and High Technologies of the Republic of Azerbaijan, is the first satellite operator in the Caucasus region entirely owned by the Government of Azerbaijan.

There is an Azercosmos facility located centrally within the area allocated for the placement of the WTGs, however, it is approximately 2 km from the nearest WTG.

Azercosmos were consulted by 5 Capitals in a face-to-face meeting in February 2024 and have subsequently been consulted throughout the ESIA phase. In addition to this, in September 2023, Azercosmos were consulted with directly by Masdar, and a visibility analysis was conducted and the Project layout amended.

HERDER STRUCTURES

There are a number of herder structures located within 3.5 km of the Project boundary. Two herder structures are located within 700 m of the nearest turbine, with the nearest one located approximately 400 m from the nearest WTG.

Site visits and consultations have been conducted with the herders. These structures are used seasonally, typically in the winter season, further details are outlined within the Livelihood Restoration Plan (LRP).

3.3 Social

The closest communities to the Project are Gobustan, Pirekeshkul, Mushfigabad and Ashagi Guzdak.

Socioeconomic baseline information was collected through a combination of desktop research and field-based social surveys, including key informant interviews (KIIs), focus group discussions (FGDs), and a household socio-economic survey. KIIs were held with representatives of the Absheron and Garadagh Executive Powers, as well as the Ashagi Guzdak and Mushfigabad Municipalities. FGDs were conducted separately with men and women from the communities of Pirekeshkul, Gobustan, and Mushfigabad. Based on KII data from the Mushfigabad Municipality, the local communities near the Project area comprise approximately 3,026 households.

In May 2025, a household socio-economic survey was carried out, covering a sample of 264 households (around 10% of the total), representing 1,111 individuals.

With regards to herders and land use of the site, verification of land ownership, land lease agreements and land use is provided within the LRP.

Full details are provided in Volume 2 of the ESIA.

3.4 Ecology

3.4.1 Survey Effort

A comprehensive programme of ecological fieldwork was undertaken between February 2024 and October 2025. Bird monitoring involved a total of 844.3 hours of vantage point (VPs) surveys across six VPs from February 2024 to January 2025, supplemented by eight days of raptor nest searches and eight days of breeding bird transect surveys during the 2024 breeding season. Nocturnal bird surveys were conducted over six nights in spring 2025. Botanical surveys were carried out over ten days between April and June 2024. Bat surveys included 12 night and six-day sessions, with passive detector monitoring from March to October 2024 and additional elevated-height surveys are ongoing through the 2025 active season. Mammal and reptile surveys were each conducted over eight field days between March and October 2024.

3.4.2 Natural Habitat

Based on field assessments and land use analysis, the majority of the Project area is classified as a Natural Habitat under the IFC PS6 guidelines. Although subject to widespread livestock grazing, the area remains ecologically functional. It retains native plant assemblages and key ecological processes.

3.4.3 Critical Habitat

A Critical Habitat Assessment was conducted, and it identified a set of 36 Priority Biodiversity Features for the Project, of which two species Cinereous Vulture and *Astragalus geminus* trigger a Critical Habitat determination.

While Cinereous Vultures were recorded throughout the year, both the baseline data and expert input (obtained during consultations with national specialists) indicate that the Project area is of greatest importance during the winter period.

The high winter abundance of Cinereous Vultures within the Project area is most plausibly explained by the availability of predictable anthropogenic food sources, particularly poultry farms and associated waste management practices within and around the Project area. These food sources are likely to provide reliable carrion resources during winter, when natural prey availability is reduced, and are considered the primary driver of winter aggregation, with broader livestock presence playing a secondary role.

It is important to note that national population estimates of Cinereous Vulture are largely derived from the identification of breeding colonies during the summer period. As highlighted by national experts, this approach is challenging in Azerbaijan's mountainous terrain and may therefore underestimate the true national population size. In addition, breeding-season surveys do not reflect winter population dynamics, when individuals disperse from breeding areas and aggregate around key foraging landscapes. This uncertainty is important to recognise when interpreting both the reported national population figures and the proportion of the population potentially utilising the Project area during winter.

3.4.4 Avifauna Survey Results

The VP surveys recorded a total of 1,740 bird observations, representing at least 28 identified species. Bird activity demonstrated clear seasonal variation, with the highest number of observations recorded during autumn, followed by spring, summer, and winter. Vultures dominated the observations.

Survey results indicate that Cinereous and Eurasian Griffon vultures are common, year-round visitors to the Project area. Their presence is likely influenced by the availability of carrion, from

large herds of domestic sheep in the landscape and improperly managed livestock carcasses, including poultry, from nearby farms. This localized carrion availability is likely an important factor contributing to vulture activity and highlights the importance of implementing a robust carcass management program during Project operations to minimize associated risks.

3.4.5 Bat Survey Results

Based on the baseline surveys, the Project area supports notable bat diversity, with 18 species recorded in the baseline surveys. Importantly, ten species observed in the area are considered to have a high collision risk with wind turbines.

3.5 Archaeology and Cultural Heritage

In March 2025, two archaeologists from the Azerbaijan Academy of Sciences conducted a seven-day archaeological field survey across the proposed Project area, including the WTG sites, access roads, and substation location. The survey involved visual inspections, walked transects, and photographic documentation.

No state-registered archaeological monuments or significant archaeological sites were identified. A few pottery fragments from the Late Middle Ages (17th –18th centuries) were found in scattered locations, mainly near the northern turbine zone, which has since been removed from the Project layout. Laboratory analyses confirmed that these ceramics originated from local Baku-Absheron pottery centres. The findings do not indicate any archaeological risk within the Project area.

3.6 Other Environmental Aspects (Air, Noise, Soils, Water)

The site does not have significant sources of air and noise emissions, with the primary source being the M4 highway. Soil and water samples were collected and analysed and did not indicate anything significant to note.

4 What are the Key Benefits?

4.1 Generation of Renewable Energy

The Project will reduce the country's reliance on fossil fuel sources for power generation. This initiative aligns with Azerbaijan's 2025 vision to integrate renewable energy into its electricity generation mix. By utilising wind resources, the Project will contribute to a more sustainable energy framework in Azerbaijan. This transition supports national energy security by diversifying energy sources and reducing the environmental impact associated with fossil fuel consumption.

One of the main environmental benefits of this wind project is the reduction in greenhouse gas emissions. Fossil fuel-based power plants are major contributors to carbon dioxide and other harmful emissions, which contribute to climate change and air pollution. Generating electricity through wind turbines will significantly decrease these emissions, promoting cleaner air and a healthier environment. This is particularly relevant as Azerbaijan hosted COP29 in November 2024, demonstrating the country's commitment to global climate goals and its efforts to address climate change.

Socially, the project will provide several benefits. The development and operation of wind power facilities create job opportunities, from construction to operations and maintenance, boosting local economies and providing livelihoods for individuals. Access to reliable and sustainable energy can also improve the quality of life for communities, particularly in remote areas where electricity access may be limited or unreliable. With stable and clean energy, there are improved prospects for education, healthcare, and overall socio-economic development.

4.2 Project Employment and Economics

The primary economic impact during construction is likely to result from limited project timeline centric employment creation during this phase. The Project is expected to create employment opportunities during the construction phase for unskilled and applicably skilled workers.

As well as the direct monetary uplift to the families of those employed, money paid to workers will also stimulate the local economy via the multiplier effect, whereby money earned on the Project expended locally will re-circulate within the local economy.

The operation phase will also create employment opportunities, however, in comparison to the construction phase, fewer jobs will be available, the vast majority of which will be skilled.

4.3 Training and Dissemination of Skill as Part of on-the-job Training

In addition to the direct monetary impact of employment created during construction, there also exists the potential for the Project to promote the dissemination of construction and construction support skills from expatriate workers into the local labour force, therefore, this will create increase in skills sets of the population. This will open job opportunities to the unemployed and increase their probability of securing similar jobs after completion of the Project construction phase.

Whilst the size of the required workforce for the operation of the Project is smaller, the type of work and the increased timescales involved offer an opportunity for greater dissemination of skills. Local recruitment and investment in the human capital of the local workforce will enhance this process and consequently increase the benefit to the local economy.

5 What are the Key Negative Impacts or Uncertainties and How Are These to be Managed?

5.1 Collision Risk – Birds and Bats

Wind farms pose a unique risk to avian species, primarily due to the potential for collisions with moving turbine blades. Evidence from existing wind farms globally has shown that such collisions can lead to bird mortality.

To assess potential collision risks at this site, a dedicated bird collision risk assessment was carried out. This assessment was species-specific, location-specific, and seasonally informed. Quantitative analysis was conducted using data from seasonal VP surveys, analysed through a CRM based on the Scottish Natural Heritage guidelines. It is important to highlight that the CRM was conducted on a layout with 32 WTGs, however, the Project layout has since been revised to include 26 WTGs, therefore, the CRM overestimates the collision risk.

The results of the CRM, using the most realistic Collision Avoidance values from the literature, indicate that several bird species are predicted to experience collisions with wind turbine blades over the operational lifecycle of the Project. Notably, species such as the Lesser Kestrel, Eurasian Griffon, and Cinereous Vulture show the highest predicted collision rates, with estimates of 9.09, 2.93, and 1.97 collisions per cycle, respectively. The Eurasian Kestrel is also expected to experience approximately 0.82 collisions per cycle). These results highlight a relatively high collision risk for certain raptor species, particularly those with frequent flight activity over the Project area.

Bat collisions from wind turbine collisions are documented world-wide. These impacts can lead to direct mortality, particularly during migration and high-activity foraging periods. The risk is elevated for species that fly at rotor-swept height. The removal of WTGs in the areas of highest bat activity is considered to be a significantly positive action with regards to potential bat collisions.

In terms of mitigation, the Plant will implement Shutdown on Demand using either Automated Shutdown on Demand or Observer Led Shutdown on Demand to reduce collision risk to priority bird species populations. In addition, a Post-construction Fatality Monitoring (PCFM) for birds and bats will be implemented in accordance with the site PCFM Study Plan, which is in conformance with the 2022 IFC, EBRD and KfW authored Good Practice Handbook for PCFM.

Adaptive management measures shall be triggered in case mortality exceeds agreed limits.

5.2 Impacts to Critical Habitat

In accordance with IFC Performance Standard 6, the presence of critical habitat triggered by two species (as outlined in Section 3.3.3) requires the implementation of measures to ensure no net loss and, where feasible, a net gain of biodiversity values. Mitigation will follow the mitigation hierarchy: avoiding, minimizing, restoring, and, as a last resort, offsetting residual impacts, to safeguard these species and their habitats. A Biodiversity Action Plan (BAP) will be developed to outline the strategy for achieving measurable conservation outcomes, while the Biodiversity Management Plan (BMP) defines the specific management actions, monitoring, and responsibilities needed to implement these commitments effectively.

5.3 Land Use Change

The land allocated for the development of the Project WTGs does not include any structures or other permanent land use. With regards to structures closest to the Project, the closest is a herder structure approximately 400 m away from a WTG and one other structure is located approximately 650 m from the nearest WTG. In addition, there are other herder structures in the surrounding lands. The structures are used to support winter grazing activities.

There are minor noise and moderate shadow flicker impacts on these structures. Ownership and land use verification is provided in the LRP. The preferred approach is to undertake monitoring and engagement (including access to the grievance mechanism), with the implementation of adaptive mitigation measures if grievances are received and substantiated, in order to avoid relocation of structures. One structure is required to be relocated due to potential ice throw impacts; this is further detailed in the LRP.

Additionally, the socioeconomic survey indicated that some households collect seasonal natural resources such as medicinal plants, wild fruits, and firewood in the general vicinity of the Project area. These resources are used solely for household consumption and are not sold. The collection activities typically occur in open fields located within the broader project surroundings. Further consultations and mapping confirmed that these activities occurred outside of the Project area. Additional information on user groups involved and the relative importance of natural resources is included within the LRP.

5.4 Operational Noise

During the operation of the wind turbines, noise will be generated from mechanical and aerodynamic sources. Both mechanical and aerodynamic noise may result in propagation to areas within 2 km of the WTG.

Noise modelling for the Project identified that some herder structures exceed the applicable noise limits. Following the noise modelling study, the Project team conducted site visits to the herder structures to better understand their construction materials and specifications. The structures were observed to have 20 – 25 cm thick shell limestone walls, single-glazed windows, and corrugated iron roofs in the living spaces.

Based on these observations, the estimated sound insulation of the structures, including windows and roofs, is approximately 20 dB Rw, assuming the walls provide 35 dB, the roof 22 dB, and the single-glazed windows 26 dB of attenuation.

With the preference to avoid resettlement, and with physical noise barriers not feasible due to required height, it was necessary to establish a benchmark for acceptable internal noise levels. The most appropriate criteria are those outlined in the WHO guidelines, namely 35 dB $LA_{eq,Day}$ and 30 dB $LA_{eq,Night}$.

Considering the predicted sound attenuation, all receptors would comply with the WHO internal noise limits, apart from one which exceeds the nighttime guideline by just 1 d(B)A. These noise levels are considered acceptable. In addition, the structure which exceeds the limit by 1 d(B)A is to be relocated due to potential ice throw impacts.

An Operational Noise Management Plan will be prepared. Impacted herder structures will be consulted throughout the Project, including prior to the start of operations and will have access to the grievance mechanism. This system is designed to ensure that any concerns or complaints raised by individuals within these areas are appropriately addressed.

Within the first quarter of operations, 24-hours of noise measurement will be conducted at each impacted receptor. This data will be compared against the detailed background noise data collected as part of this baseline to determine if perceptible noise impacts are evident at receptors. If a grievance is submitted, dedicated monitoring procedures will be initiated. These procedures are intended to assess the nature of the grievance and determine the most suitable response to the issue at hand.

Where complaints are substantiated, a range of mitigation measures are available to resolve the identified issues. Such measures include improvements such as enhanced roof insulation or the installation of double-glazed windows, aimed at addressing specific concerns and improving overall conditions.

5.5 Shadow Flicker

Shadow flicker is the effect of the sun shining through the rotating blades of a wind turbine and casting a shadow on the window of neighbouring properties under certain wind & light conditions. Turbine shadow flicker was modelled using 'WindPRO', an industry-leading

software package for the design and planning of wind energy projects. The model software considers the sun's path with respect to every turbine location during every minute over a complete year.

Exceedances of IFC limits are predicted at a school and the herder structures also impacted by operational noise. Additional exceedances are also noted at non-residential or educational receptors of lower sensitivity. Under the realistic scenario, exceedances at human receptors are limited to two herder structures.

The school does not exceed the IFC guideline for annual shadow flicker duration under the worst-case scenario; however, it exceeds the IFC daily limit by one minute on a single occasion (21st February). The realistic shadow hours per year are within limits. The school is closed when this impact occurs.

With a similar approach to noise impacts, a Shadow Flicker Management Plan will be prepared. impacted herder structures will be consulted throughout the Project, including prior to the start of operations and will have access to the grievance mechanism. If a grievance is submitted, dedicated monitoring procedures will be initiated. These procedures are intended to assess the nature of the grievance and determine the most suitable response to the issue at hand. If complaints are substantiated, a range of adaptive mitigation measures are available to resolve the identified issues.

5.6 Other Environmental and Social Impacts

Other environmental and social impacts are typical for a Project of this magnitude, and the vast majority are temporary impacts during the construction phase (e.g., construction phase noise, dust and waste generation), these impacts are readily mitigated to acceptable levels by good international practice mitigation measures as outlined within Volume 2 of the ESIA, which will be included in the HSSE-MS.

6 What Alternatives Were Considered?

6.1 No Project Alternative

The No Project Alternative would place a greater reliance on generating power from fossil fuel sources and would not be in line with achieving Azerbaijan's 2025 vision for the inclusion of renewable energy electricity within its generation mix, with Azerbaijan hosting the COP29 in November 2024. On the COP29 website[6], it states that "*Azerbaijan is committed to developing its renewable energy potential, which is an important part of the country's plan to reduce greenhouse gas emissions by 40% by 2050. The country intends to increase renewable power capacity to 30% by 2030 and diversify its existing energy system to become a leader in green energy.*"

The website further states that, due to Azerbaijan's favourable wind energy, there is the potential for up to 3 GW of onshore wind and 157 GW of offshore wind. The Project is therefore an important project in Azerbaijan realising its wind energy potential.

6.2 Alternative Layout

6.2.1 Overview

As is expected with a wind farm project, numerous different layouts have been considered. The comparison between three selected layouts (initial, alternative option 1 and selected layout) is provided within this section.

This initial layout had six WTGs located to the west of the villages of Gobustan and Pirekeshkul, these are circled in Figure 6-1 and are referred to as 'northern WTGs' throughout this section. The baseline surveys undertaken for the Project considered this initial layout and therefore those areas were surveyed. The results are outlined within the following section, with the benefits of the removing these turbines highlighted.

Following preparation of the ESIA, the layout was again revised, to remove another six WTGs. The far eastern string of WTG, closest to the communities of Ashagi Guzdak and Mushfigabad to the east have been removed. North of the highway, two turbines have been added to the west of the development footprint, and one WTG removed. This is outlined in Figure 6-2.

[6] https://cop29.az/en/green-energy-transition-initiatives

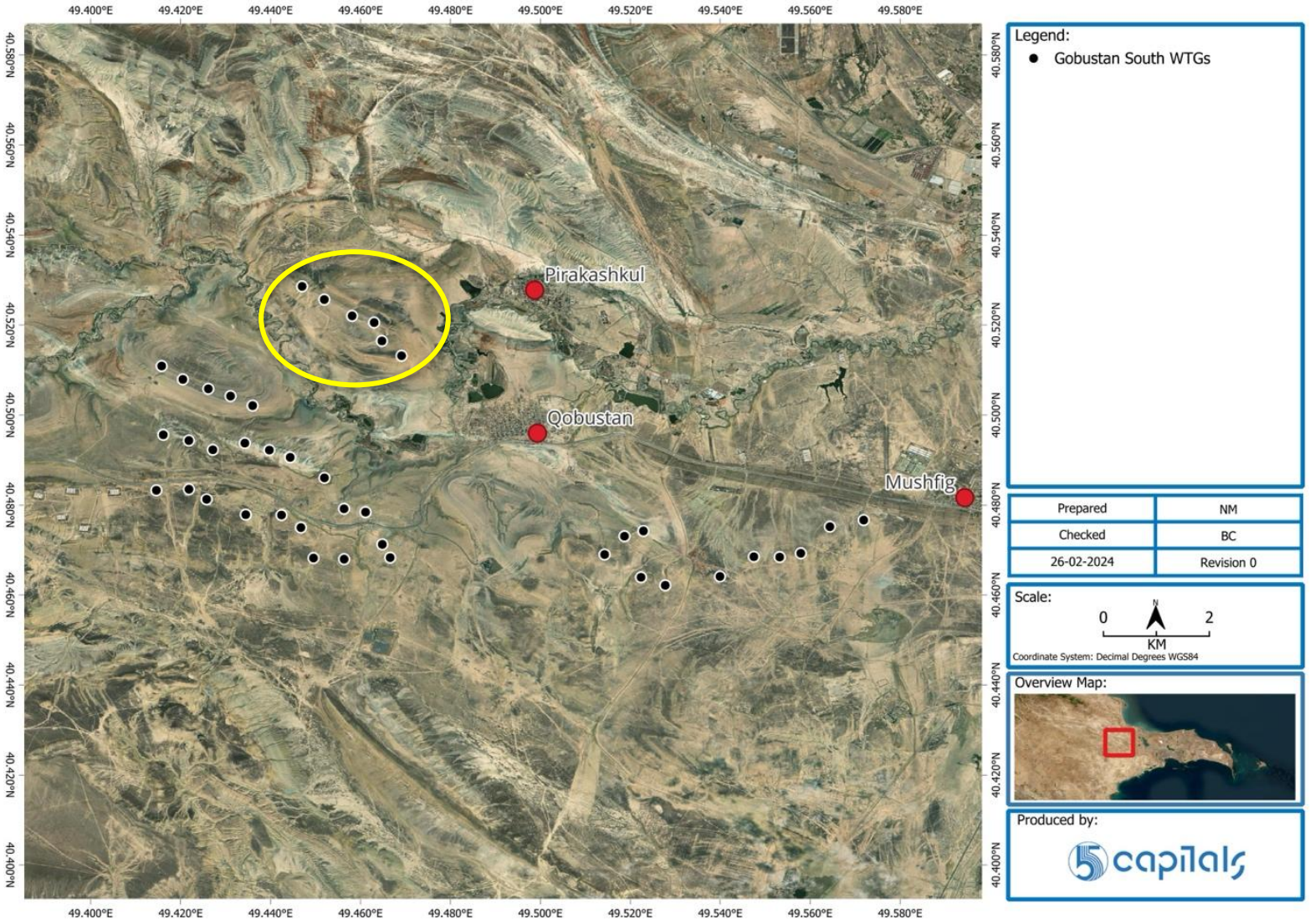

Figure 6-1 Initial WTG Layout, Northern WTGs Circled

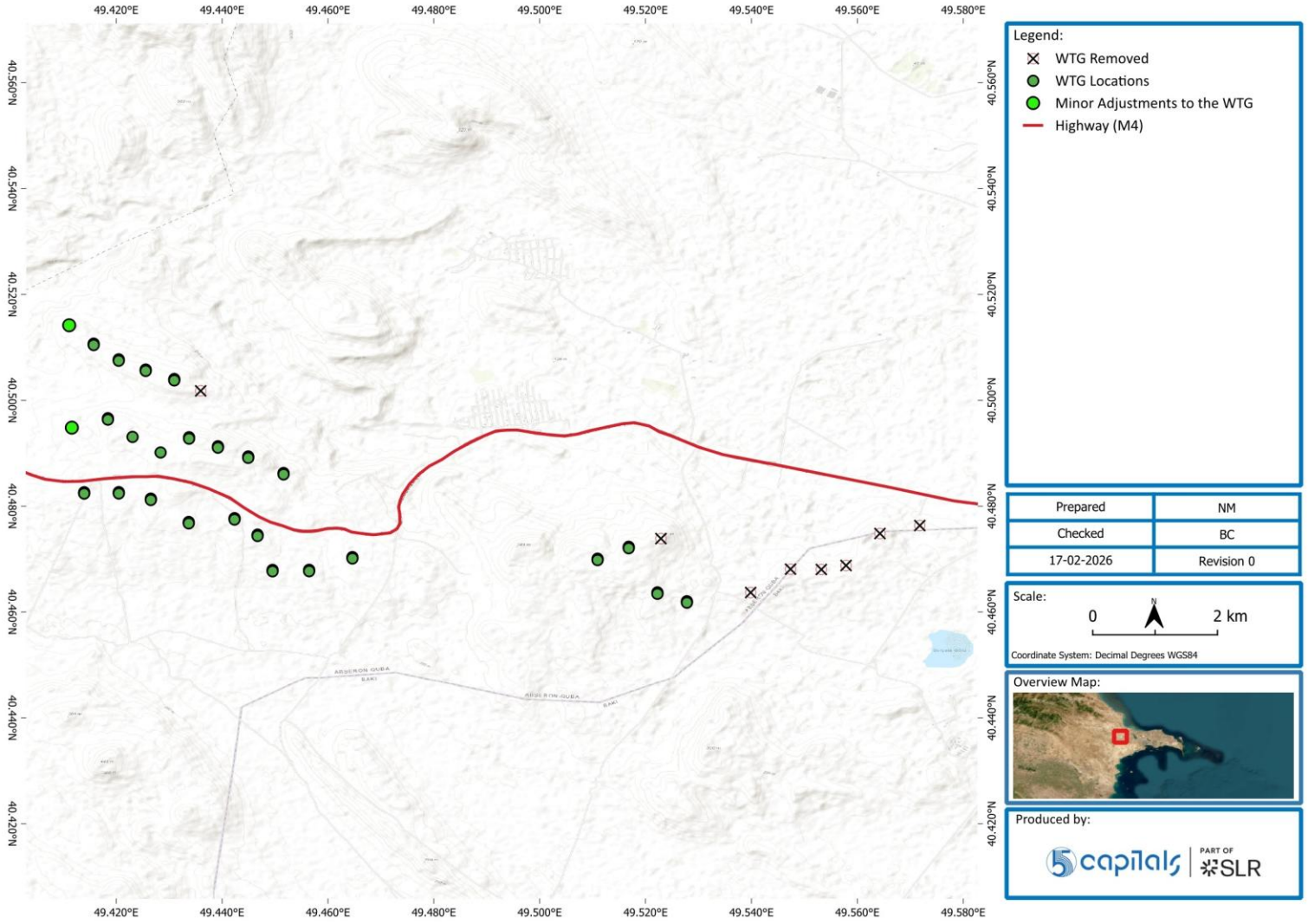

Figure 6-2 Differences Between Final Layout and Alternative Option 1

6.2.2 Ecology

AVIFAUNA

With regards to avifauna, the full results of the baseline surveys are outlined within Chapter 9 of the ESIA.

The baseline VP surveys identified the area of northern WTGs covered by VP5 as a critical hotspot for avian activity, accounting for approximately 47% (1,571 of 3,311) of total observations across the six VPs, with a recorded diversity of at least 21 identified taxa.

The following figure depicts the VP survey locations and previously considered layout.

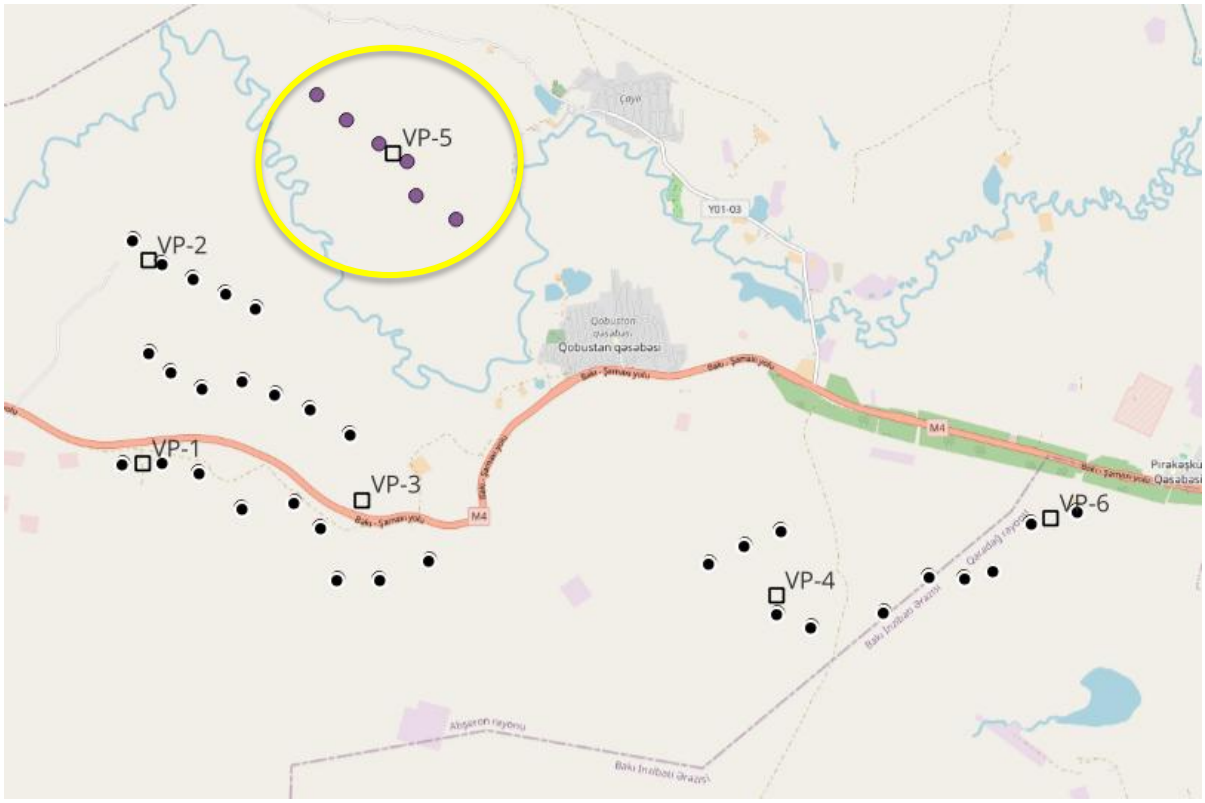

Figure 6-3 VP Locations and Previously Considered Layout

This northern area, now-excluded, exhibited an exceptional concentration of collision-prone soaring raptors, with VP5 hosting 48.6% of Cinereous Vulture observations (549 of 1129), 43.7% of Eurasian Griffon (328 of 749), 41.6% of Steppe Eagle (62 of 149), 52.2% of Eastern Imperial Eagle (47 of 90), and 72.7% of other unidentified vulture sightings (270 of 371). These species are among the most vulnerable to turbine collisions, as confirmed by the original CRM, which estimated collision rates of 5.66 collisions per cycle for Cinereous Vulture, 6.77 for Eurasian Griffon, and 5.36 for other unidentified large vultures. The data further reveals that over 50% of total observations for these high-risk species were concentrated at VP5, while the remaining VPs (VP1-VP4, VP6) each contributed an average of approximately 10%, highlighting the

northern area's disproportionate ecological significance. The data clearly demonstrated that the northern WTGs would have contributed disproportionately to avian mortality risk.

Focusing on the eight most commonly recorded raptor species, Cinereous Vulture, Griffon Vulture, Eastern Imperial Eagle, Steppe Eagle, Egyptian Vulture, Common Kestrel, and Lesser Kestrel, around 46% sourced from the area covered by the northern WTGs. This highlights the area's significance as a raptor activity hotspot. The contribution also varied seasonally, accounting for 51% of observations in spring, 32% in summer, 30% in autumn, and peaking at 75% in winter.

In addition, the removal of all VP6-associated WTGs significantly reduces the collision risk previously attributed to that eastern cluster. The partial reduction at VP4 (2 of 6 WTGs) represents a reduction in WTG density within that viewshed and delivers a proportionate but partial reduction in risk for species observed within that viewshed, noting that one WTG in the western area of the Project was moved and another WTG was added. Considered together, the current layout modifications constitute a significant and positive change to the Project's avifauna collision risk profile.

By avoiding development in these high-activity area,s the Project is expected to achieve a significant reduction in potential collision risk for the most vulnerable species. This can be demonstrated by the comparison of original CRM findings and the results of the CRM presented in the ESIA. Comparative analysis of key species reveals substantial reduction in predicted collision rates following the exclusion of the northern WTGs

RAPTOR NESTING AND BREEDING BIRDS

The raptor nest surveys revealed at least two active nesting sites of Eurasian Hobby, listed as Vulnerable (VU) in the Azerbaijan Red Data Book (AZRB), and Lesser Kestrel located in the northern area. In addition, at least three potential nesting sites of Lesser Kestrel, Marsh Harrier and Lanner Falcon were also recorded in this area around northern WTGs. Among these Lanner Falcon is listed as Critically Endangered (CR) in AZRB.

In addition, the surveys identified one active nest of Lesser Kestrel (*Falco naumanni*), located approximately 200 m north of the easternmost WTG location. This represented the closest confirmed nesting site to the Project infrastructure, indicating a potential zone of elevated sensitivity, particularly during the breeding season when foraging activity is concentrated around nest locations and repeated flight movements increase collision exposure.

The revised layout and removal of the eastern turbines results in a substantial increase in the separation distance between operational turbines and this active nest, from approximately 200 m to over 4.1 km from the current easternmost turbine (WTG-01-07). As a result, the

potential for collision risk and disturbance to breeding Lesser Kestrels in the eastern areas is reduced.

By removing turbines from this area, the revised layout will help avoid direct disturbance to these nesting sites, preventing potential abandonment due to construction noise, increased human activity, or collision risks.

BOTANY

The majority of the Project area is classified as natural habitat with evident grazing pressure. The northern area exhibited relatively better-preserved conditions, characterised by infrequent grazing and minimal anthropogenic pressures. Relatively higher number of observations of protected species were recorded in northern area. In addition, occurrence of *Ferula persica* (AZRB VU) was recorded solely in this area.

Excluding the northern WTGs without relocating them elsewhere is expected to reduce potential habitat impacts across the landscape, minimising disturbance to this less disturbed area. The revision will help preserve the existing habitats and vegetation in that region.

Four nationally threatened plant species were recorded within the now removed eastern cluster. This included three nationally Endangered species viz. *Astragalus geminus* (also an IUCN Endangered species), *Dianthus schemachensis*, and *Ferula capsica*, and one nationally Vulnerable species, *Suchtelenia calycina*. Across the entire Project area, these EN species were predominantly restricted in their distribution to the eastern cluster zone, with *F. caspica* recorded solely as a single occurrence within this eastern area. The removal of majority of the WTGs from the eastern cluster provides a clear and direct reduction in potential impacts to botanical receptors.

BATS

The revised layout is expected to lead to a considerable reduction in bat collision risk relative to the number of turbines removed, by removing turbines in area where both high-risk species dominance and peak rotor-height activity coincide, resulting in a lower and relatively diffuse residual risk profile across the remaining Project area.

6.2.3 Operational Noise and Shadow Flicker

The northern WTGs were to be located between two communities, Pirekeshkul and Gobustan.

The initial layout had a WTG within 2 km of Pirekeshkul, following removal of the northern WTGs, the nearest WTG to Pirekeshkul community is 5 km, in addition the distance from the nearest WTG to Gobustan has also increased.

The increased distance to the communities has benefits in terms of operational noise impacts on the communities from the WTGs. Noise levels at a herder structure were modelled to exceed

the IFC nighttime noise criteria, however, following the layout change, the structure is now approximately 3.5 km from the nearest WTG and therefore noise impacts are not expected. In addition, the removal of WTGs has benefits in terms of shadow flicker impact.

In addition, ACWA Power's Area 1 wind farm is located just north of Pirekeshkul, therefore, the removal of these northern WTGs, means that potential cumulative noise and shadow flicker impacts have been significantly mitigated, by increasing the distance between the two wind farms.

6.2.4 Construction Phase Impacts and Community Health, Safety and Security

In the initial layout, an access road was originally planned to pass through Pirekeshkul. This would have introduced several potential impacts during both the construction and operational phases, including:

- Construction phase noise and dust impacts; and
- Construction phase traffic impacts;
- Community health and safety impacts due to the movement of construction vehicles, equipment and WTG components.

Additionally, by increasing the distance between the WTGs and nearby communities, the risk of community health, safety, and security impacts, such as blade or ice throw, is reduced.

While there may also have been some operational phase impacts related to noise and traffic, these were expected to be minimal compared to those during construction.

6.2.5 Archaeology

An archaeological survey was carried out for the Project, as summarised in the ESIA. This survey was based on the previous layout and included the northern WTG area.

The survey outcomes indicated that ceramics were most frequently found in the northern WTG area. While the survey report concluded that the overall Project area is not archaeologically sensitive, removing the northern WTGs offers clear benefits in terms of reducing potential archaeological impacts. Ceramics were found at the location of the removed eastern WTGs, however, the locations were not considered particularly sensitive with regards to archaeology.

6.2.6 Landscape and Visual

The removal of the northern WTGs, which were planned to be located between two villages, and the eastern WTGs brings clear benefits in terms of preserving landscape character and reducing visual impacts on the villages and for the landscape as a whole.

As a result, the elevated area between Gobustan and Pirekeshkul will remain unchanged, maintaining its existing landscape character. This is particularly important given that the ACWA Power wind farm is situated to the north of both villages, without the removal, the villages would have been surrounded by WTGs.

6.2.7 Reduction and Transportation of WTGs

The removal of the WTGs, and the resulting overall reduction in turbine numbers, means fewer WTGs are required for the Project. This reduces both supply chain demands and transportation requirements. Each WTG requires multiple trips by oversized load vehicles, so having fewer turbines significantly decreases the number of transport trips needed. This has numerous benefits in terms of road safety and air and noise emissions arising from the supply chain.

6.2.8 Reduction in Potential Cumulative Impacts

The Area 1 wind farm is located north of the two villages and north of the Project. At the closest point, the Area 1 Wind Farm would have been within 2 km of the Project, therefore, cumulative impacts with regards to noise, shadow flicker, landscape and visual and ecology (particularly bird and bat collisions) would have been expected.

As a result of the moving of the northern WTGs, the closest turbine to the Area 1 Wind Farm is now >5 km and therefore the potential for cumulative impacts has significantly reduced, although cumulative impacts are still assessed within Volume 2 of the ESIA.

7 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING

Both the construction and operational phases will need to 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 and the Lenders.

Volume 3 of the ESIA provides a framework for the development of the HSSE-MS for the construction and operational phases of the Project. The framework has been developed to ensure that all Environmental & Social impacts identified for both construction and operational phases are appropriately identified and controlled through the development of a robust construction and operational phase HSSE-MS.

In addition, there will be dedicated competent Project teams put in place by the EPC Contractor and the O&M Company overseen by the Project Company to ensure the implementation of the E&S mitigation measures.

The primary documents/systems guiding the environmental and social management of the construction and operational phases will be the HSSE-MS respective to construction and operational risks, impacts and compliance requirements.

INDEPENDENT AUDITING AND MONITORING

The Project will be subject to periodic independent monitoring in accordance with the requirements of the Lenders. The scope of the independent audits will include the implementation of the Project HSSE-MS and will evaluate on-site activities and documented controls and monitoring efforts, with respect to the Project's compliance obligations.

APPENDIX A – PROJECT CONTACT INFORMATION

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