

# Banka 315 MW<sub>ac</sub> Solar PV Azerbaijan

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



October 2024

## DOCUMENT INFORMATION

<b>PROJECT NAME</b>	Banka 315 MW <sub>ac</sub> Solar PV
<b>5Cs PROJECT NUMBER</b>	2305/007
<b>DOCUMENT TITLE</b>	Environmental & Social Impact Assessment – Volume 1: Non-Technical Summary
<b>CLIENT</b>	Abu Dhabi Future Energy Company PJSC – Masdar SOCAR Green LLC
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## DOCUMENT CONTROL

VERSION	VERSION DATE	DESCRIPTION	AUTHOR	REVIEWER	APPROVER
1.0	29/07/2024	Initial draft for Client comment	BC, BK, UR	BC BK	MKB
2.0	01/08/2024	Revised following Client comments	BC, BK, UR	BC BK	MKB
3.0	09/09/2024	Revised following Lender comments	BC, BK, UR	BC BK	MKB
4.0	09/10/2024	Revised following updates	BC, BK, UR	BC BK	MKB



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# 1 WHAT IS THE PROJECT?

## 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 signed implementation agreements with Azerbaijan's Ministry of Energy in June 2022 to develop a renewable energy program on a bilateral basis, with a total capacity of 10 gigawatts (GW) across multiple technologies.

Subsequently, Masdar signed joint development agreements with the State Oil Company of the Republic of Azerbaijan (SOCAR) for onshore wind and solar projects, and integrated offshore wind and green hydrogen projects, with a total combined capacity of 4 GW.

The Ministry of Energy of the Republic of Azerbaijan and Masdar signed an Implementation Agreement relating to the assessment, development, and implementation of a 4 GW<sub>ac</sub> pipeline of solar photovoltaic (PV) and onshore wind projects in the Republic of Azerbaijan starting with 2 GW<sub>ac</sub> as the first phase.

The Banka Solar PV Plant, comprising the solar PV array, substation and access road (the Project), is one of three projects making up the first phase and it is the focus of this report. Refer to Section 1.4 for details with regard to the connection of the Project to the grid network.

On the 26<sup>th</sup> October 2023, Masdar and the Ministry of Energy entered into an investment agreement for the Project. The Project will assist in achieving Azerbaijan's 2025 vision and beyond for the inclusion of renewable energy electricity within its generation mix.

## 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**

<b>PROJECT TITLE</b>	Banka 315 MW <sub>ac</sub> Solar PV Project
<b>PROJECT DEVELOPER</b>	Masdar and SOCAR Green LLC
<b>EPC CONTRACTOR</b>	North West Electric Power Design Institute, part of China Energy Group
<b>O&amp;M COMPANY</b>	Masdar Specialised Technical Services (MSTS)
<b>MASDAR REPRESENTATIVE</b>	Murad Sadikhov Abu Dhabi Future Energy Company PJSC – Masdar Baku, Azerbaijan
<b>SOCAR REPRESENTATIVES</b>	Elmir Musayev and Alish Lemberanskiy SOCAR Green LLC Baku, Azerbaijan
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## 1.3 Project Description

### OVERVIEW

The project is a 315 MW<sub>ac</sub> Solar PV Plant utilising N-type bi-facial PV modules. The PV modules will be installed on east-west tracking (single axis) ground mounted racks arranged to ensure the most efficient alignment for the capture of solar radiation. Mounting structures will be established within shallow foundations set into the underlying soils, an overview of project details is provided within the following table.

**Table 1-2 Project Details**

PARAMETER	DETAILS
DC Capacity	Approximately 410 MWp

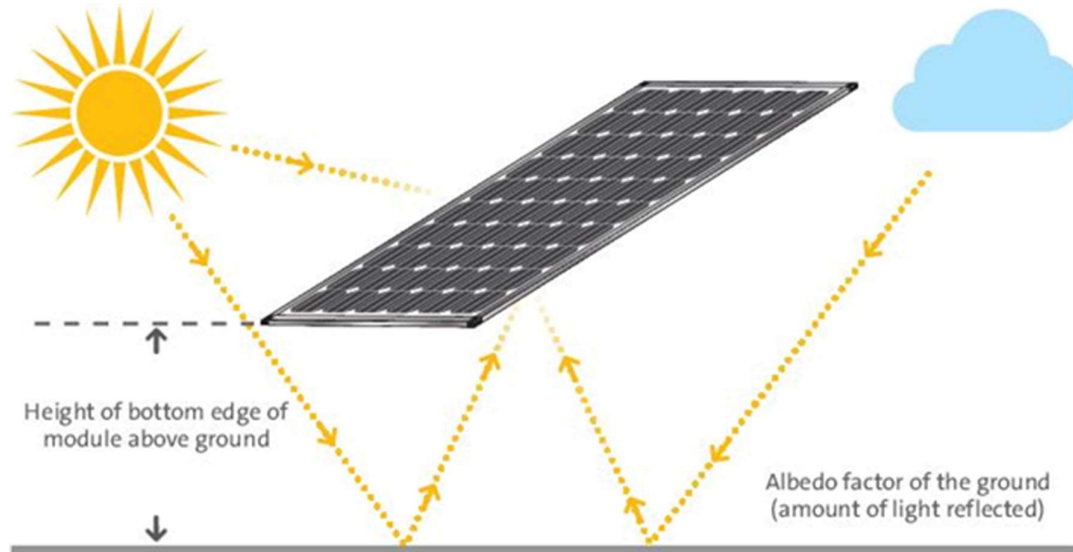
PARAMETER	DETAILS
Module Type	N-type Bifacial Module
Inverter Type	String or Central Inverter
Mounting Structure Type	Single Axis, E-W tracking. Tracking range -55° to +55° or better
Maximum AC Export Capacity at Point of Connection	315 MW
Ground Coverage Ratio	20% – 30%
Interconnection Voltage	330 kV
Grid Compliance	According to Azerbaijan Grid Code
Project Design Lifetime	30 years

#### PROJECT COMPONENTS

The Project will have following main components:

- PV Modules
- Inverters
- Mounting Structures
- LV/MV Transformers
- PV Plant substation including Power Transformer and Switchgears
- Civil Infrastructure (Roads, Fences, drainage as required, etc.)
- Other balance of plant such as cables, protection, SCADA system etc.

The following figures depict bi-facial PV technology and the indicative project layout respectively.



**Figure 1-1 Bifacial Technology**

**ACCESS ROAD**

An access road of 6 m width will be developed, the road is already asphalt and runs along the southern border of the Project, north of the Azerbaijan Fish Farm.

**INDICATIVE LAYOUT**

The indicative layout of the Project is shown on the following figure. As is evident the layout has the following details:

- 3.5 km road dissecting the site which will be left in place;
- The temporary construction area located on the west of the site;
- An access road of 6 m width located to the south of the Project layout;
- The flood avoidance areas across the site, including the water pond, included as an indicative design for rainwater flood protection within the site in response to the hydrological report; and
- Substation to the west of the site.

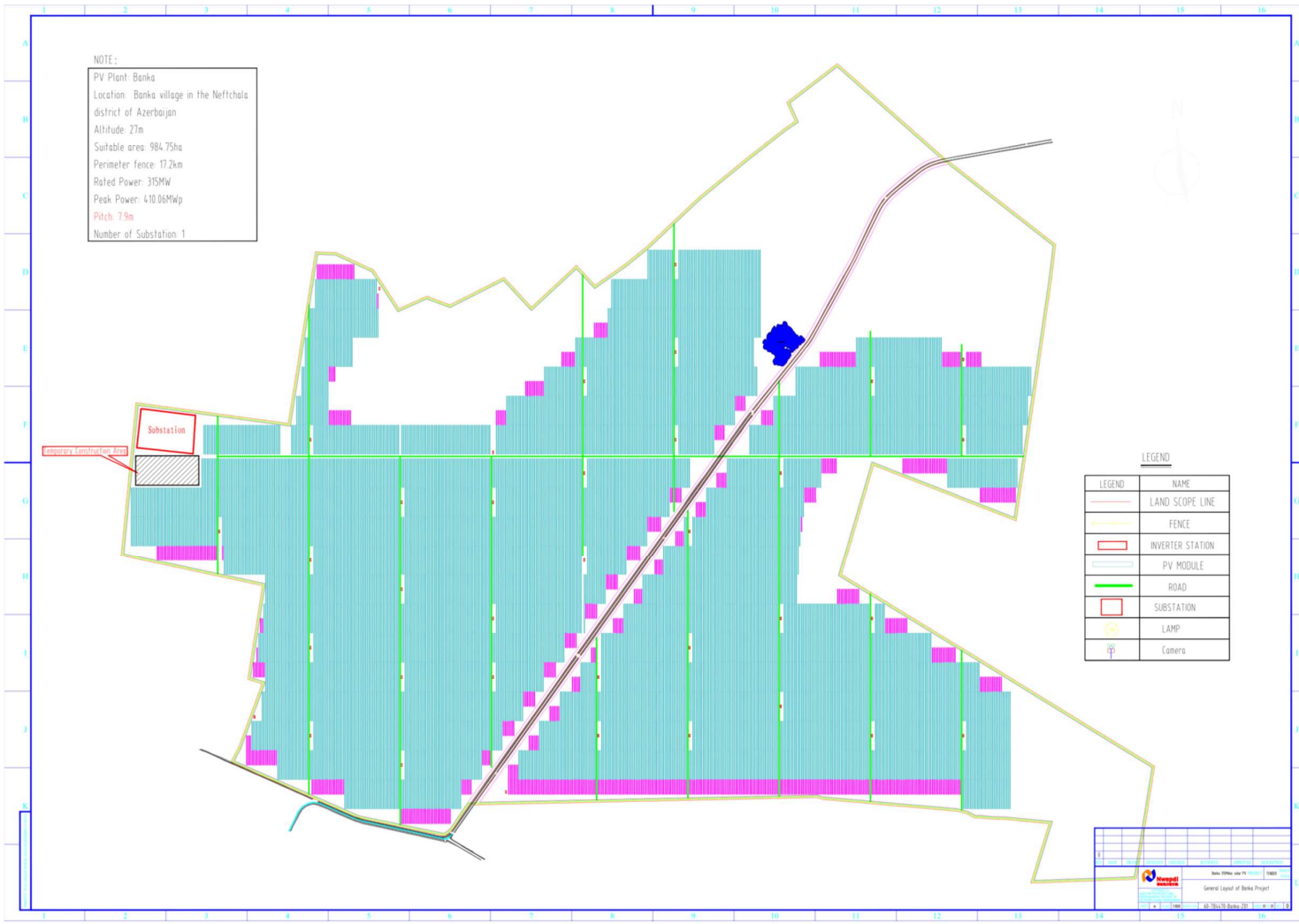


Figure 1-2 Indicative Project Layout



## 1.4 Grid Connection

### 1.4.1 Overview, Responsibility and Status of Assessment

The connection to the grid will be via an 80 km 330 kV double circuit line to the Navahi substation. The line is considered as an associated facility to the Project. The line heads north and passes to the west of the Shirvan National Park, with a previously considered option passing through the national park (refer to Volume 2. for a discussion on alternatives).

Enhancement of the grid network, including the construction and operation of the transmission lines, construction and enhancement of substations, investments in SCADA upgrades, control systems, and battery energy storage, are being jointly financed by the World Bank and by the Government of Azerbaijan, with the entities funding different assets. The World Bank refer to the Project as Azerbaijan Scaling-Up Renewable Energy Project (AZURE) and the Appraisal Environmental and Social Summary<sup>1</sup> and Environmental and Social Commitment Plan<sup>2</sup> were published in late August 2024. The plan is for the transmission lines for Banka Solar PV and Bilasuvar Solar PV be operational by April 2026.

Although the Government of Azerbaijan is developing the transmission line which connects the Project to the Navahi substation, the commitment plan and associated mitigation measures and monitoring will be agreed with the World Bank and will be required to follow World Bank's Environmental and Social Standards. The World Bank are therefore still overseeing any gaps in the building and design of transmission line and ensuring alignment with their requirements.

Both Azerenerji and the World Bank have engaged environmental and social consultants to undertake ESIA's for their respective parts of the grid enhancement. The ESIA conducted on behalf of Azerenerji, which covers the 330 kV transmission line which will connect the Project to the Navahi substation, is being prepared by Azerbaijan Scientific-Research and Design-Prospecting Energy Institute (The Scoping Report Is dated August, 2024).

World Bank financing will also cover energy grid strengthening and system performance improvement, as well as supporting project implementation and capacity building. Construction works financed by the Government of Azerbaijan and the World Bank will be

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<sup>1</sup> <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099082824173027860/p50520815b0cda0961a0bb17294c1dff0e0>

<sup>2</sup> <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099082824173040751/p5052081e30efe091b02b159a8759b9abc>

carried out in parallel, while priority will be given to the early completion of the 330 kV transmission lines.

### 1.4.2 Key Risks

From review of the line route and the available project information, the key risks associated with the development of the line include:

- Potential for avifauna collision, particularly in the sections of line closest to the site (near the 'Kura Delta' Important Bird Area), within the 'Shorgel lakes/Shirvan reserve' Important Bird Area and closest to Shirvan National Park, an IUCN category II Legally Protected Area. These sites may represent Critical Habitat because they contain significant seasonal populations of Little Bustard, Red-crested Pochard, Dalmatian Pelican, Pygmy Cormorant, Great Cormorant, Caspian Gull, Eurasian Oystercatcher and White-tailed Eagle, among others. Azerenerji's Scoping Report refers to the implementation of bird flight diverters in some locations to make the lines more visible and reduce collision risks.
- Land acquisition, where the transmission line route will require land which is currently being utilised. The Scoping Report states that '*all land acquisition, either permanent or temporary will be done in compliance with the relevant Azerbaijan legislation and international requirements (WB ESS 5)*'. In addition, following the meeting on the 9<sup>th</sup> August 2024, a list of Project Affected Persons (PAPs) has been received.

Other impacts which have been screened include:

- Cumulative air and noise construction phase impacts, when the construction activities are located close to one another during interconnection works;
- Landscape and visual (including cumulative impacts);
- Archaeology and cultural heritage; and
- Electromagnetic Field impacts (EMF) and electrocution/fire risk.

These impacts are discussed in the relevant chapters of the ESIA Volume 2.

## 1.5 Project Milestones

**Table 1-3 Project Milestones**

MILESTONE	SCHEDULED DATE
PPA Signature	June 2024
Site Handover	1st November 2024
Mobilisation	Quarter 1, 2025
Main Construction Works Commencement	Quarter 2, 2025
Commercial Operation Date	January 2027

## 2 WHERE IS THE PROJECT LOCATED?

The Project is located in Banka village in the Neftchala District of Azerbaijan, approximately 120 km south of Baku.

Figure 2-1 depicts the location of the Project in Azerbaijan and Figure 2-2 depicts the regional location of the Project.

As is evident from the images, the Project is located approximately 2 km from the coastline of the Caspian Sea and 500 m north of the Kura River.

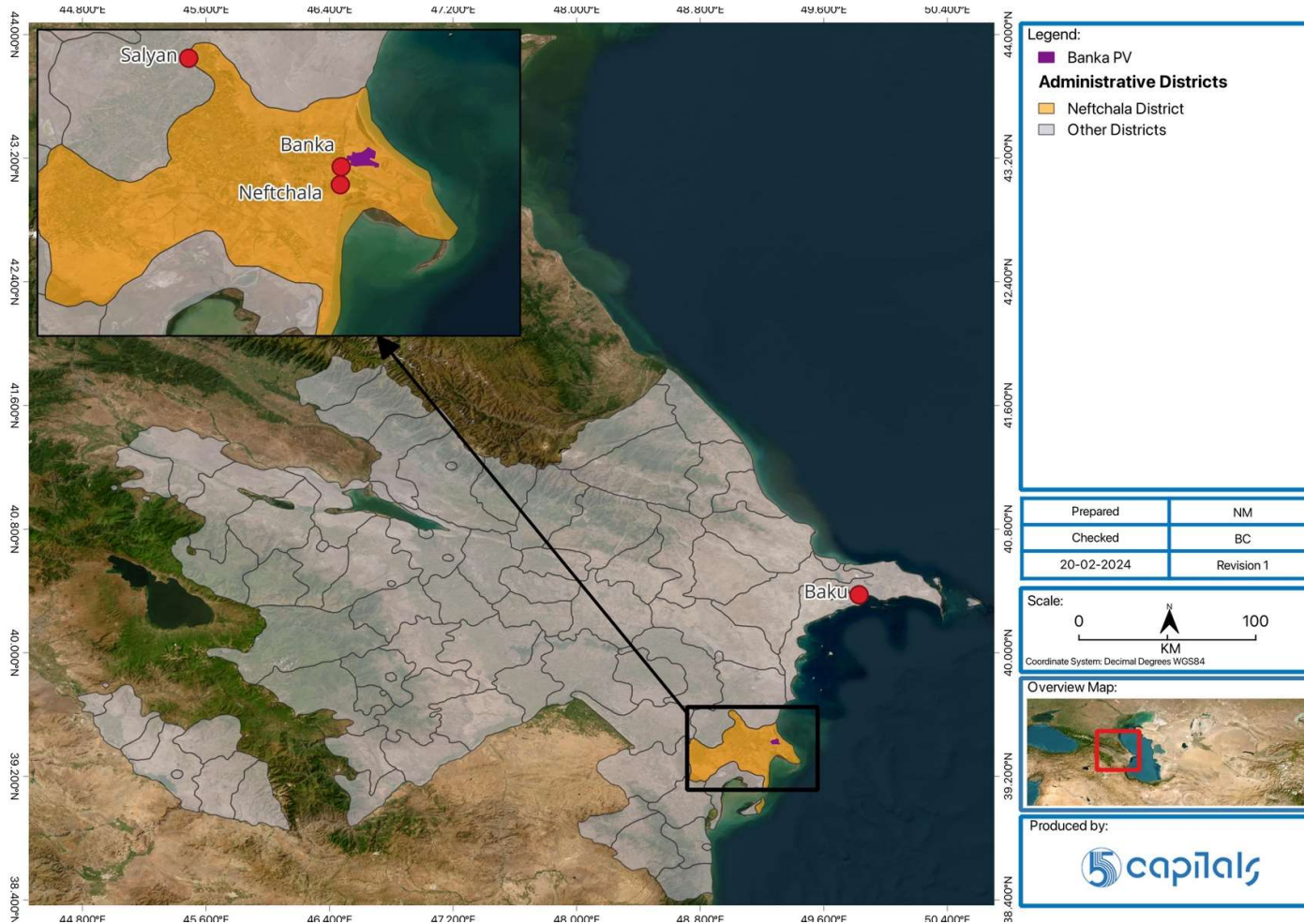
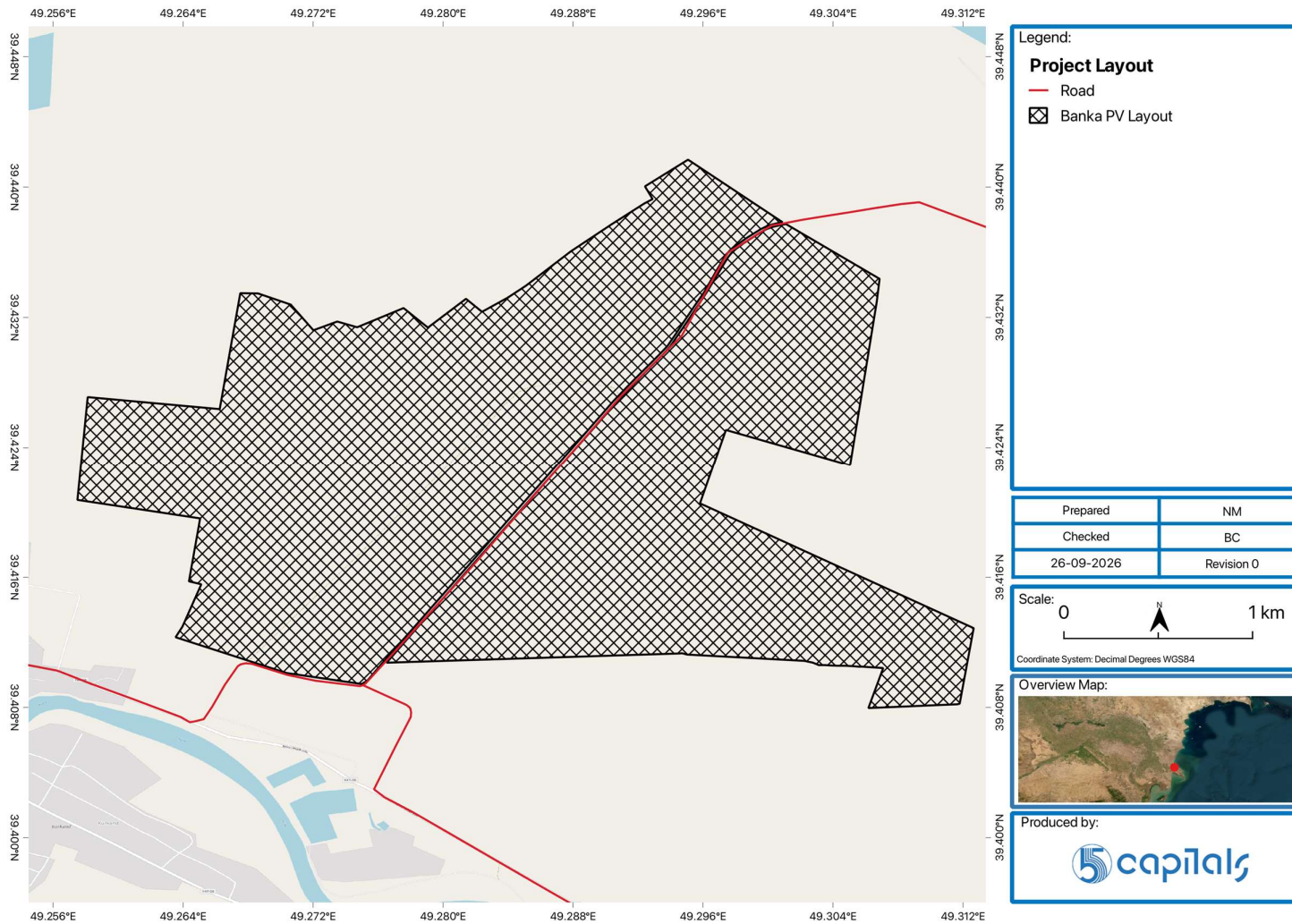


Figure 2-1 National Project Context



**Figure 2-2 Local Project Context**



### 3 WHAT IS THE CURRENT SITUATION?

#### LAND OWNERSHIP

The Project lands consist of three 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 three land plots are as follows:

- 400 ha agricultural category (Yenikend municipal land)
- 50 ha agricultural category (Banka municipal land)
- 523 ha special category<sup>3</sup> (Neftchala Executive Power land)

Upon completion of the land category change, the decision to designate certain state and municipal land in the administrative territory of Neftchala district as areas for renewable energy sources for the Banka Solar PV Project, was made by the Cabinet of Ministers of the Republic of Azerbaijan on April 16, 2024.

#### LAND USE AND SITE CONDITIONS

The site is flat, homogenous semi-desert with a 3.5 km asphalt road cutting through the site, a 6 kV Overhead Transmission Line (OHTL) runs parallel to the road as well as a 35 kV within the Project site. The 35 kV line will remain in place, however, the 6 kV line may be relocated closer to the asphalt road.

A channel is located on the north-eastern boundary of the Project, and one cuts across the site, parallel to the asphalt road, during site visits and baseline surveys the channels were often dry, however, has been noted to have water, dependent upon recent rain events. Through consultations it has been determined that the channel is a result of historic excavations and not used by anyone for any specific purpose, but periodically fills with rain.

A herder structure was evident at the site during initial visits. In consultations with Yenikend Municipality in February 2024 it was revealed that the structure belonged to a herder who used to lease the land from the municipality. The herder has two workers who used to graze livestock (both the herder's and their own) on the land. During ESIA stage consultations between February and June 2024, and a site visit conducted on 12 June 2024, it was identified that the herder's agreement for 70 hectares of grazing area had been terminated in 2023, and his structure was dismantled by the herder and his workers in March 2024. Alternative land has been allocated for the herder by Neftchala Executive Power, and he has accepted the land. The two workers are still employed by the herder.

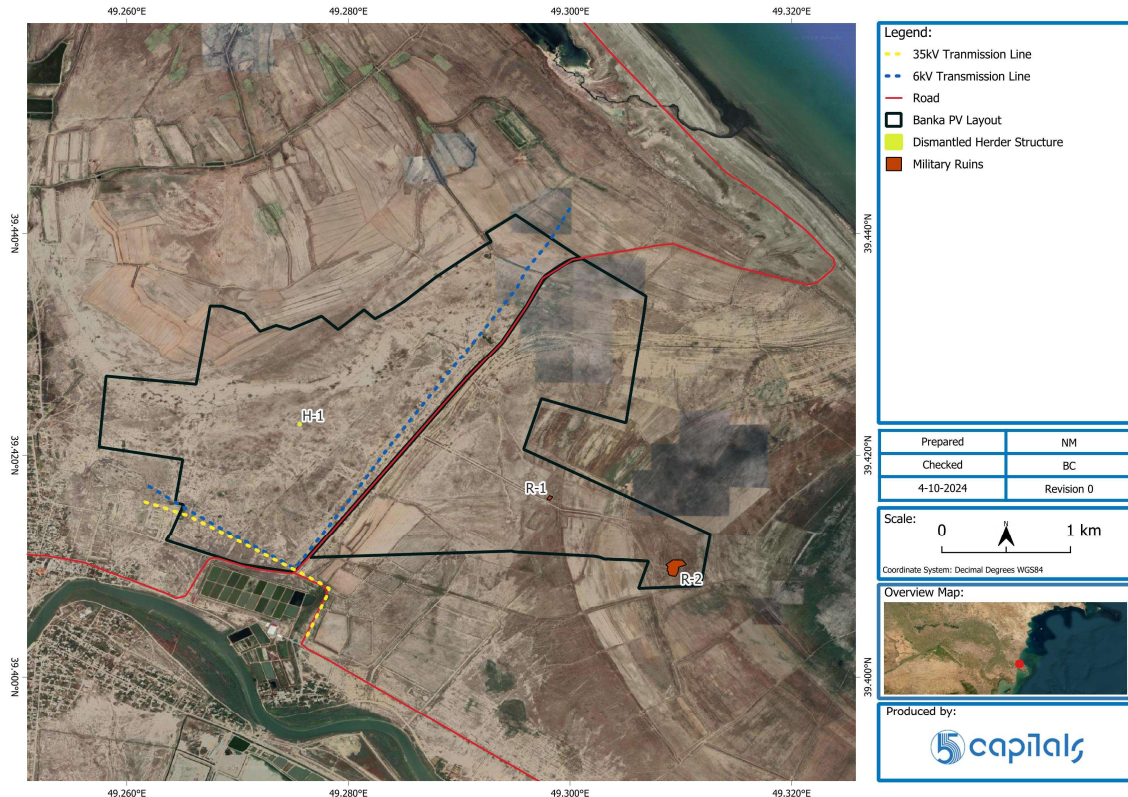
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<sup>3</sup> 'Special category' refers to former military land which had restricted access.

The project site is currently unused and there are no seasonal land users.

Refer to the Livelihood Restoration Plan (LRP) for further information.

Ruins of abandoned military structures are present at the site, however, in consultations with the Ministry of Defence, the Ministry stated that the land has not been used by them since the Soviet era and structures are of no importance and can be removed. It is to be noted that the Ministry of Energy have committed to providing the site in a clean state. The following figure depicts the locations of the OHTLs, military ruins and the dismantled structure location.



**Figure 3-1 OHTLs, Military Ruins and Dismantled Structure**

Images from the site are shown in the following figures.





**Figure 3-2 General Site Conditions**



**Figure 3-3 Site Features: Existing OHTL (left) and Military Building Ruins (right)**

**SITE SURROUNDINGS**

At its closest point, the site is around 1.8 km southwest of the Caspian Sea, and 500 m north of the Kura River. A water channel, noted to be completely dry during the August 2023 site visit, is located towards the north of the Project. It is understood this water channel was/is used by the adjacent agricultural fields which are located to the north and northwest of the Project.

The closest settlements to the Project are Banka Village (400 m), Yenikend Village (800 m) and Neftchala City (1 km).

There is one herder structure located 70 m east of the planned project area. During the consultation stage, it was identified that his land lease agreement for 13 hectares had expired in 2022 and it will be renewed for the same location. The herder stated in consultations that he does not graze on the Project area.

The Azerbaijan Fish Farm (AFF) LLC was founded in 2017 and includes the following facilities:

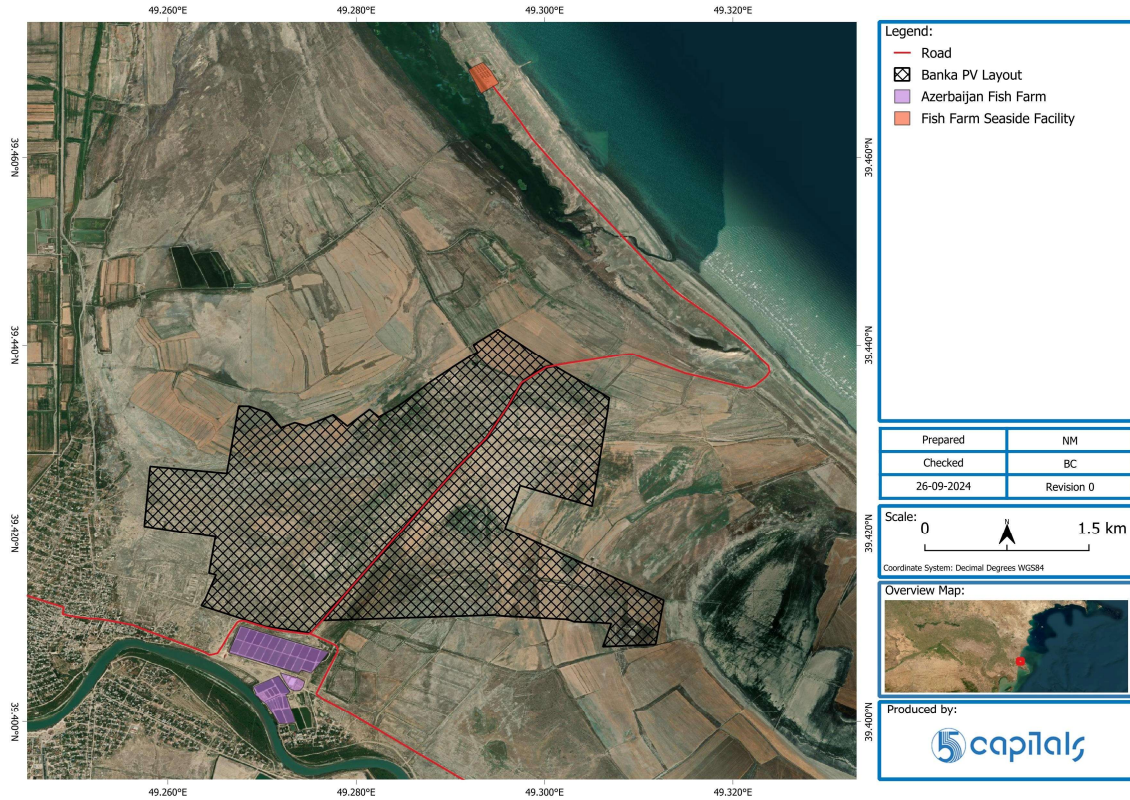
- The Recirculatory Aquaculture System (RAS) facility which is located about 100 m south of the project site. There is also an adjacent cafeteria (the Yenikend Fish House),
- The AFF Seaside Facility which is located approximately 3 km north of the project site.

The two facilities are located outside the project boundaries; however, their connection to the grid is via two OHTLs that pass through the project site. In addition, the AFF have highlighted



that the road that passes through the site (and will not be impacted by the project) is vital for their daily operations.

The following figure depicts the relative locations of the AFF facilities.



**Figure 3-4 AFF Facilities**

The following figure depicts the Project relative to its surrounding features.

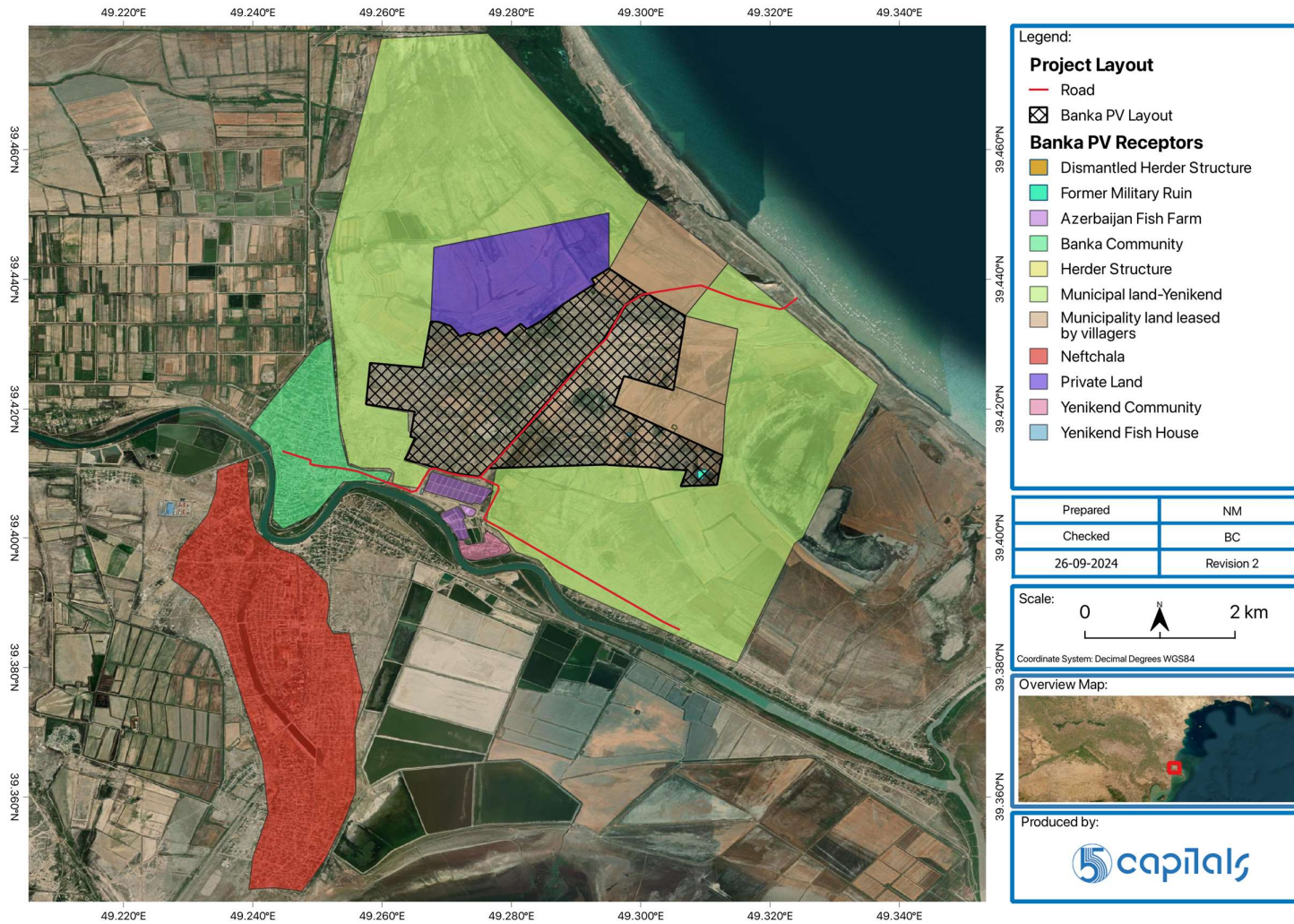


Figure 3-5 Surrounding Land Use

### 3.1 Social

The closest settlements to the project are Banka Village (400 m), Yenikend Village (800 m), and Neftchala City (1 km).

In order to develop a comprehensive socioeconomic profile for these communities, data collection involved consultations with the Neftchala Executive Power and the acquisition of statistical data pertaining to various socioeconomic indicators of the residential areas. These indicators encompass demography, age distribution, social infrastructure and services, national composition, employment, and economic aspects.

Additionally, focus group discussions (FGDs) were conducted with residents of Banka and Yenikend villages. The objective of these FGDs was to collect detailed information regarding land use, cultural heritage, and the socioeconomic conditions prevailing within these communities. Full details are provided in Volume 2 of the ESIA.

#### **PROJECT AFFECTED PERSONS**

The Project Affected Persons can be categorised as:

- One formal herder and two informal workers
- Members of the affected herder and workers households which includes women, children, the young, elderly etc.

Based on the above, the total number of the PAPs in the project is 14. Out of these, 7 are female and 7 are male.

It is also acknowledged that the owners of the AFF including their 125 workers (and other small businesses) may be potentially impacted by the construction activities resulting from the relocation of the 6 kV OHTL and use of the asphalt road. The number of PAPs is, therefore, preliminary as an advanced assessment will be required once the relocation/construction methodologies have been determined, prior to impact. Refer to the LRP for further information.

#### OHTL

Land ownership and use along the transmission line route has been identified and provided in the Scoping Report for the transmission lines<sup>4</sup>. The identified ownership and land use are provided within the ESIA Volume 2 and the LRP.

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<sup>4</sup> <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099082524135528588/p5052081afda380fc192451697539b09005>



## 3.2 Potential Human Receptors

The potential human receptors to impacts arising from the Project are considered to be:

- Residents of Banka and Yenikend Communities, and Neftchala City;
- The PAPs and household members as outlined in Section 3.1;
- The herder who has a structure 70 m east of the Project;
- Individuals from local communities who will graze their livestock or cultivate crops near to Project area on empty land belonging to local municipality; and
- Employees and visitors to the Azerbaijan Fish Farm and the adjacent Yenikend Fish House. The Fish Farm utilises the asphalt road daily for their operations.

## 3.3 Ecology

### PROJECT SITE

The Project area partly overlaps an internationally recognized KBA, specifically the Kura Delta Important Bird Area (IBA, AZ046 – BirdLife International). The IBA is described by BirdLife as the “delta of the Kura, the largest river in the Transcaucasus, with reedbeds, flooded areas, bushes and shallows”.

This IBA is triggered for 16 species of waterbirds, including both breeding and wintering species, as well as a few species that are year-round residents. It is noteworthy that the overlap encompasses a very small portion of the IBA. Examination of this portion of the Project site (southeastern portion) was a focus of the March 2024 site visit, because of the potential risk associated with the IBA overlap. During this visit, it was evident that the portion of the Project area that overlaps the IBA consists purely of Modified Habitat, per the IFC PS6 definition. Specifically, this area contained currently cultivated cropfields with signs of very recent ploughing. Furthermore, there were no wetlands or waterbodies present within the area, in contrast to the habitat values of the established IBA. Although, it is acknowledged that some waterbirds may use the degraded upland habitats of the site, the Project area itself does not contain the prime habitat for the species the IBA was intended to protect.

On the basis of consideration of all evidence pertinent to the NH determination, the Project area is covered entirely by Modified Habitat, per the IFC PS6 definition.

The sensitivity of habitats and Flora is considered to be very low due to the fact that the Project area is covered entirely by modified habitat, there is no natural habitat at the site, and no species of rare or redlisted plants were documented at the Project site during the botanical baseline surveys,

The sensitivity of fauna (including avifauna) is considered to be low because no mammals or reptiles recorded have elevated status on either the IUCN global, or the national redlist. In addition, the site is not of significance with regards to avifauna.

#### **OHTL**

The transmission line route passes close/through to the following protected areas, Shirvan State Nature Reserve / Shirvan National Park and Shorgel lakes/Shirvan reserve Important Bird Area. In addition, the route is located in an important flyway for migratory avifauna.

### **3.4 Other Environmental Aspects (Air, Noise, Soils, Water)**

The site does not have significant sources of air and noise emissions, with the primary source being use of vehicles in the nearby Banka village. Soil and water samples were collected and analysed and did not indicate anything significant to note.

## 4 WHAT ARE THE KEY BENEFITS?

### **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 solar resources, the PV 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 PV 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 solar panels will significantly decrease these emissions, promoting cleaner air and a healthier environment. This is particularly relevant as Azerbaijan is hosting COP29 in November 2024, demonstrating the country's commitment to global climate goals and its efforts to address climate change.

Socially, the PV project will provide several benefits. The development and operation of solar power facilities create job opportunities, from construction to operations and maintenance, boosting local economies and providing livelihoods for many 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.

### **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. Local workers will be hired in order to reduce risk of socio-cultural conflict due to influx of people to the Project area based on their skill set and Project requirements.

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, in contrast to the construction phase, fewer jobs will be available, the vast majority of which will be skilled.

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**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 NEGATIVE IMPACTS OR UNCERTAINTIES AND HOW ARE THESE TO BE MANAGED?

### LAND USE CHANGE

Upon completion of the land category change, the decision to designate certain state and municipal land in the administrative territory of Neftchala district as areas for renewable energy sources for the Banka Solar PV Project, was made by the Cabinet of Ministers of the Republic of Azerbaijan on April 16, 2024.

Land expropriation within the PV plant site has led to the termination of a leasehold agreement for a pastural land plot within the site. This plot measured an area of 70 ha, and was registered under the formal herder whose primary residence is located 3 km away from the site, in Banka community. As stated previously, the herder has two informal workers, who are also PAPs.

The process of allocating a new agreement for a replacement 70 ha of land to the herder is ongoing and is expected to be concluded in October 2024. The herder confirmed his satisfaction with the alternative land parcel.

Details of land acquisition, census and socioeconomic information, valuation surveys, economic displacement impacts, associated entitlements and budgets are provided in the LRP.

### Transmission Line and Cumulative Impacts

There are cumulative impacts with regards land use change and restriction with the transmission line requiring land acquisition.

Azerenerji's Scoping Report states that the transmission lines will trigger land acquisition for footprints of tower supports but physical displacement can be avoided. The occupied land parcels will vary from 64 m<sup>2</sup> to 100 m<sup>2</sup> depending on the tower type.

The land ownership and use along the OHTL route has been determined and is provided in ESIA Volume 2 and the LRP.

Azerenerji prepared and disclosed a Resettlement Policy Framework for the AZURE Project, consistent with requirements of the World Bank's Environmental and Social Framework. The Framework will adhere to the existing legal and policy framework of the Republic of Azerbaijan, incorporating any supplementary measures necessary to achieve consistency with the World Bank's principles and standards.



## ECOLOGY

The Project area partly overlaps an internationally recognised KBA, the Kura Delta Important Bird Area. Site visits and baseline surveys determined that, although, it is acknowledged that some waterbirds may use the degraded upland habitats of the site, the Project area itself does not contain the prime habitat for the species the IBA was intended to protect.

Although neither were identified during baseline surveys, there is the potential for the Common Tortoise (IUCN VU, Azerbaijan NT) and Marbled Polecat (IUCN VU, Azerbaijan DD) to be present at site, therefore, the required mitigation is a pre-construction check for the presence of the Common Tortoise and Marbled Polecat. Further mitigation is to be outlined as part of a Biodiversity Management Plan.

With regards to operational phase, and potential collisions with PV panels, the ESIA Volume 2 highlights that this is unlikely, however, an operational phase change finds monitoring procedure will be included within the HSSE-MS.

### OHTL Collisions / Electrocutation

Thin, dark wires used in overhead transmission lines are visually difficult to detect. Bird mortality by collisions with these wires have been documented for a variety of species.

In the case of power lines, the bird collides with one of the wires, generally the earth wire, which is less visible. Particularly at risk are birds migrating between 20 – 50 m altitude, birds flying at night, birds flying in flocks, and / or large and heavy birds of limited manoeuvrability.

It is noted that Little Bustard is particularly at risk of collision with transmission lines, and a portion the line passes adjacent Shirvan National Park, a known wintering ground for the species. Other species identified as a risk for the transmission line from the Project to the Navahi substation are the Dalmatian Pelican, Caspian Gull, Pygmy Cormorant, Great Cormorant and Eurasian Spoonbill.

In addition, transmission lines present potential electrocution risk to birds. In particular, larger-bodied birds which tend to prefer perching.

### **ACCESS RESTRICTION FOR LOCAL ACCESS ROUTES AND DISRUPTION TO THE AZERBAIJAN FISH FARM**

Through consultations, it is understood that the road that passes directly through the site is used by the Azerbaijan Fish Farm as a typical access route and is vital for their daily operations. If damage occurs to the road or if the fish farm cannot utilise the road, their operation will be impacted.

As shown by the indicative Project layout, this road will not be developed and therefore there will be no impacts during operation. During construction, it is considered possible that there

may be access restrictions, however, this has not been confirmed at this stage. Before any fencing, if required, an alternative route will be assessed and made available. A Traffic and Transportation Management Plan will be prepared.

In addition to impacts to the road, the Fish Farm is also supplied power by a 6 kV line that runs parallel to the asphalt road. Should there be any disruption to their power source, the Fish Farm would be significantly impacted. There is also the potential for construction noise and air quality impacts to disrupt the operation of the Fish Farm. Details of mitigation measures and contingency allowance are provided in the LRP.

During consultations, the local communities queried whether the Project would use the Banka village bridge, highlighting that it was constructed in 1982. Masdar responded that the village bridge will likely not be used due to concerns that it cannot support heavy loads.

### **WASTE**

Waste generation will be relatively limited at first, as site preparation works are ongoing, however, will ramp up considerably once panels are delivered and unpacked. The primary waste with panel deliveries is the wooden pallets, cardboard packaging and plastic straps, the majority of which can be reused and/or recycled. If not managed, this waste can cause issues when dispersed by wind across the site, and interspersed with the soil and waterbodies nearby. It is also a potential fire risk. Considerable effort is typically required at PV sites to manage construction phase wastes.

To mitigate this:

- A project-specific construction stage Waste Management Plan will be prepared prior to commencement of works.
- Prior to start of construction works, there will be coordination with waste receiving facilities to ensure sufficient capacity is available for receiving construction wastes.
- Collection of waste to its final disposal location will be through the licensed waste collector. The licensed waste collector will be responsible for project waste management and act as a waste contractor and transport the waste to authorized recycling/recovery and /or final disposal facilities that are licensed according to national regulations.

### **FLOOD RISK**

Flood risk modelling has been conducted and an assessment of construction and operation flood risk impacts, both coastal and rainfall, is included within the standalone Climate Change Risk Assessment.

With regards to mitigation:

- The indicative project design depicts a number of flood avoidance areas, which are an indicative design for flood mitigation which will be further finalised.
- Stormwater drainage systems shall be designed to withstand the maximum discharge in the most extreme foreseeable precipitation events to ensure no loss of operation for a flooding level with a return period of 1 in 100 years;
- The EPC Contractor will finalise the drainage network and flood mitigation during the detailed design phase;
- Drainage networks should be checked after flood events to ensure they are free from debris;
- Hazardous materials and wastes should be stored in accordance with the mitigation measures outlined within the HSSE-MS to ensure that leaks to the soil, surface water and groundwater do not occur during flood events.

#### **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 and dust 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 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.

## 7 STAKEHOLDER ENGAGEMENT

Stakeholder engagement was undertaken for the Project during both the Scoping (February 2024) and ESIA (June, July and August 2024) phase. Stakeholder groups include ministries, local government authorities, land users, nearby communities and businesses as well as NGOs and civil society organisations.

In addition, as part of the ESIA process, a public consultation meeting was undertaken with local community members to provide project information, introduce the grievance mechanism established for the project, and to hear any feedback or concerns. The meeting was held on the 11<sup>th</sup> July, 2024, with 42 attendees, including those from Banka and Yenikend villages.

### **ESIA DISCLOSURE**

In line with the consultation and disclosure requirements set by the lenders, project information was presented to stakeholders and affected communities during ESIA disclosure meetings held between September 18 - 20, 2024.

The engagement process ensured equitable participation from all relevant parties. Separate meetings were organised for men, women, and vulnerable groups to ensure focused discussions. Vulnerable groups were engaged through door-to-door meetings. All meetings were conducted in the local language to ensure full understanding.

Stakeholders involved in the ESIA disclosure meetings included:

- Nefchala Executive Power, with the participation of relevant Deputy Executive Power, Banka Territorial Executive Power Representative, Yenikend Municipality Chair, Yenikend Territorial Excom Representative, Neftchala Municipality Chair, Kurkend Territorial Excom Representative.
- Azerbaijan Fish Farm representatives,
- Banka, Yenikend, Birinci Mayak and Subh Village Local Government Authorities and community members.
- PAPs.
- The herder located near the project area.
- Vulnerable households.

Non-technical summary documents were placed in key locations: Nefchala Executive Power, Yenikend Municipality Office, and additional locations in nearby villages, including Banka, Girmizi Shafaq, Birinci Mayak, İkinci Mayak villages. Hard copies were distributed to ensure accessibility to all community members.

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A total of 195 project leaflets were distributed across all sessions, covering men, women, and vulnerable group meetings.

For a detailed overview of stakeholder engagement and details of the grievance mechanism, refer to the Project-specific SEP.

## APPENDIX A – PROJECT CONTACT INFORMATION

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