NON-TECHNICAL SUMMARY of Environmental Social Impact Assessment Report

"Blue 3" Photovoltaic Park Project, Albania

September 2025

Tirana, Albania

REPORT SUMMARY

PROJECT TITLE	**“Blue 3” Photovoltaic Park Fier, ALBANIA. established by SPV Blue 3.**
DOCUMENT TITLE	**Non-Technical Summary Report of Environmental and Social Impact Assessment (ESIA)**

REV.	PURPOSE OF ISSUE	REMARK/ DESCRIPTION	ORIGINATOR	DATE
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2				

FINAL PURPOSE OF ISSUE

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Name/ Surname	ABKONS				
Signature					
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Document Status	Final				

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Abbreviations

AB	Albanian Bank
AC	Alternating Current
BAT	Best Available Techniques
BRMP	Biodiversity and Restoration Management Plan
CBs	Circuit Breakers
CEMP	Construction Environmental Management Plan
CESMP	Construction Environmental and Social Management Plan
CHO	Cultural Heritage Officer
CIP	Community Investment Plan
CLO	Community Liaison Officer
CTMP	Construction Traffic Management Plan
DC	Direct Current
DCM	Decision of the Council of Ministers
E&S	Environmental and Social
EBRD	European Bank for Reconstruction and Development
EC	Electrical Conductivity
EHS	Environmental, Health, Safety
EHSSMP	Environmental, Health, Safety, and Social Management Plan
EIA	Environmental Impact Assessment
EMO	Environmental Monitoring Officer
EPC	Engineering, Procurement and Construction
ERP	Emergency Response Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
EU	European Union
HSE	Health, Safety and Environment (and Security)
HSO	Health and Safety Officer
IBA	Important Bird Area
IEC	Independent Environmental Consultant
IFC	International Finance Corporation
IPP	Independent Power Plants
ISO	International Organization for Standardization
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
KW	Kilowatt
LLEMP	Local Labour and Employment Management Plan
MEI	Ministry of Infrastructure and Energy
MTE	Ministry of Tourism and Environment

MW	Megawatt
NAPA	National Agency of Protected Areas
NEA	National Environmental Agency
NGO	Non-Governmental Organization
NTS	Non-Technical Summary
OHL	Overhead Line
OHS	Occupational Health and Safety
OHSMP	Occupational Health and Safety Management Plan
PDA	Project Development Area
PV	Photovoltaic
RAP	Resettlement Action Plan
RED	Regional Environmental Directorate
RES	Renewable Energy Sources
RF	Resettlement Framework
RoW	Right of Way
RP	Resettlement Plan
SAR	Sodium Adsorption Ratio
SCADA	Supervisory Control and Data Acquisition
SEP	Stakeholder Engagement Plan
SIA	Social Impact Assessment
SMPS	Security Management Plan
WAS	Worker Accommodation Strategy
WMP	Waste Management Plan

1. Introduction

Blue 3 sh.p.k. (SPV), jointly established by Blessed Investment sh.p.k. and Matrix Konstruksion sh.p.k., is the Developer of the Blue 3 Photovoltaic Park, located within the administrative territory of Fier Municipality, Albania. The Project represents an important contribution to Albania's renewable energy transition, in alignment with the National Energy Strategy 2030, which aims to diversify the national energy mix, reduce reliance on hydropower, and enhance overall energy security.

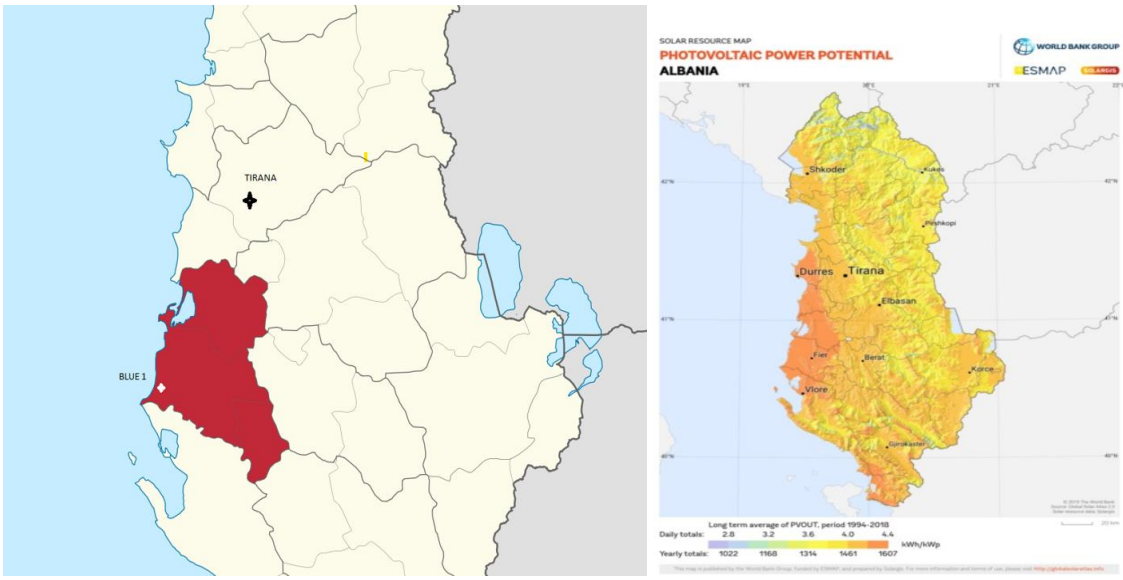

Figure 1. Project region – as a higher radiation area in Albania

Albania benefits from high solar irradiation levels, making it an attractive location for photovoltaic development. The Blue 3 Photovoltaic Park supports the country's long-term objectives for green energy generation and decarbonization, while also contributing to the alignment of Albania's energy sector with European Union (EU) climate and renewable energy targets.

A comprehensive Environmental and Social Impact Assessment (ESIA) has been prepared to identify, assess, and manage potential environmental and social risks and impacts associated with the Project. The ESIA ensures that the development is implemented in compliance with national legislation, EU directives, and international sustainability standards, while integrating measures to avoid, minimize, and mitigate potential negative impacts.

The Ministry of Tourism and Environment (MTE) has confirmed that the Project falls under Annex 1 of the Decision of the Council of Ministers (DCM) No. 686, dated 29.07.2015 (as amended), which requires an in-depth ESIA.

This document constitutes the Non-Technical Summary (NTS) of the ESIA and presents, in accessible and non-technical language, the key aspects of the Project, including its location, design, potential environmental and social impacts, proposed mitigation measures, and community engagement efforts.

The ESIA was prepared by Abkons sh.p.k., an independent environmental and social consulting company, in accordance with:

- Albanian environmental legislation;
- Relevant EU Directives (2011/92/EU and 2014/52/EU); and
- International standards, including the EBRD Performance Requirements (PRs), the International Finance Corporation (IFC) Performance Standards (PSs), and the World Bank/World Health Organization (WHO) Environmental, Health and Safety (EHS) Guidelines.

The main objective of the ESIA is to ensure that the Project is developed and operated in an environmentally sound, socially responsible, and sustainable manner, consistent with Good International Industry Practice (GIIP).

For any questions, complaints or concerns about the Project in general, or to receive further information, please contact SPV Blue 3 sh.p.k through the contact details stated below.

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Email : info@blessedinvestment.com Project website: www. https://blessedinvestment.com/ Community Liaison Officer: Bekim Hysaj mobile: +355672164811 Company address: Themistokli Gërmenji Street, No.1, Tirana, Albania	Environmental & Social Compliance Manager – Redion Biba Email : rbiba@abkons.com

This Non-Technical Summary (NTS) presents the key findings of the Environmental and Social Impact Assessment (ESIA) prepared for the Blue 3 Photovoltaic Park Project, developed by SPV Blue 3 sh.p.k. in Fier Municipality, Albania. The ESIA has been conducted in accordance with Albanian environmental legislation, EU Directive 2011/92/EU as amended by Directive 2014/52/EU, and Good International Industry Practice (GIIP), including the requirements of international financial institutions (IFIs) that may support the Project.

In line with IFI and national requirements, the ESIA documentation is being disclosed for public consultation prior to its finalization. The disclosure period allows the public, local communities, and other interested stakeholders to review the ESIA findings and provide comments, feedback, or concerns about the potential environmental and social (E&S) impacts and the proposed mitigation and management measures. All feedback received during this period will be reviewed and considered in finalising the ESIA documentation.

The purpose of this NTS is to provide accessible, concise, and meaningful information about the Project, its potential E&S impacts, and the measures proposed to avoid, minimise, or mitigate any negative effects. The NTS enables stakeholders to understand how the Project will be implemented in an environmentally sound and socially responsible manner.

The ESIA Disclosure Package prepared by SPV Blue 3 comprises the following key documents:

- Non-Technical Summary (NTS)
- Environmental and Social Impact Assessment (ESIA)
- Environmental and Social Management Plan (ESMP)
- Stakeholder Engagement Plan (SEP)
- Land Acquisition Due Diligence Report (LADDR)

The Disclosure Package will be available for public review during the disclosure period at the following locations:

- Fier Municipality Office, Fier
- Libofshë Administrative Unit Office, Fier
- SPV Blue 3 Project Information Centre (on-site)

2. Background

2.1 Project characteristic

The Blue 3 Photovoltaic Park is designed as a modern, high-efficiency solar energy facility with a total installed capacity of 36.16 MW (AC). The project comprises 59,472 monocrystalline photovoltaic (PV) modules and 113 inverters, selected to optimize performance, durability, and efficiency.

During the design phase, various PV technologies were evaluated, including monocrystalline, polycrystalline, thin-film, and bifacial modules. Monocrystalline modules were selected for their superior efficiency, while the project remains open to integrating the latest technological advances during implementation to further enhance energy generation and operational performance.

Key technical features and quality standards include:

- High-performance PV technology with Vertex Bifacial Dual Glass modules.
- Stringent quality control in accordance with international standards, including ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018.
- Testing for extreme environmental conditions, including salt mist, ammonia corrosion, and sand abrasion (IEC 61701, IEC 62716, DIN EN 60068-2-68).
- Long-term reliability testing to ensure durability and consistent performance.
- Regular monitoring and independent verification by accredited international institutes.

Technical specifications:

- PV Module: Trina Solar TSM-720NEG21C.20, 720 Wp, 59,424 units, total nominal capacity 42.79 MWp.
- Inverters: Sungrow SG350HX-20A, 320 kW AC each, total installed capacity 36.16 MW AC, DC/AC ratio 1.18.
- Tilt Angle: 25°; Land area covered by panels: 184,592 m²; Installed panel surface area: 3,106.75 m².
- Energy Generation: 74,083,544 kWh/year; Specific Yield: 1,732 kWh/kWp/year; Performance Ratio (PR): 90.54%; Solar Panel Efficiency: 23.2%.

The project is committed to applying Best Available Techniques (BAT) across all components, including PV panels, mounting structures, and inverters. The Sponsor will adopt advanced and efficient technologies as they become available, aiming to optimize capital and operational costs while maximizing energy output. This approach ensures alignment with international best practices, resource efficiency, and long-term sustainability of the Blue 3 Photovoltaic Park.

2.2 Why is the project needed?

Albania is actively advancing towards a more reliable, resilient, and sustainable energy system. Historically, the country has relied almost exclusively on hydropower for electricity generation, which exposes the energy supply to variability in rainfall and climate conditions. During dry periods, Albania frequently needs to import electricity from neighboring countries to meet domestic demand.

To reduce this dependency and enhance energy security, the Albanian Government is promoting the development of diverse renewable energy sources, including solar power. Benefiting from one of the highest solar irradiation levels in Europe, with some regions experiencing up to 360 days of sunshine per year, Albania is particularly well-suited for solar energy development.

The Blue 3 Photovoltaic Park will contribute to the country's energy transition by:

- Diversifying energy sources to reduce reliance on hydropower and imported electricity.
- Enhancing energy security through increased domestic electricity production.

- Supporting climate action by generating clean, renewable energy and reducing greenhouse gas emissions.
- Creating employment opportunities, particularly during construction, with up to 200 jobs anticipated.
- Stimulating the local economy by prioritizing local materials, services, and suppliers wherever feasible.

The project is fully aligned with Albania's national energy strategy and contributes to the country's transition towards a greener, more resilient, and sustainable energy future.

2.3 What is the legislative framework of the project?

The ESIA has been undertaken in accordance with the main Albanian legislation requirements presented below and EBRD Environmental and Social Policy (2019) and associated Performance Requirements (PRs).

Legislation	Overview	Relevance to the Project
Law No. 10431 (09.06.2011) Amended	"On Environmental Protection" (as amended) – This law establishes the environmental protection framework, institutional framework and competencies, environmental impact assessment principles and environmental permitting. The law is based on European Union principles and best practice toward environment management.	It requires that an Environmental Impact Assessment is conducted and an environmental permit obtained before initiating the Project. The project, which the project has implemented. It establishes monitoring requirements to identify project impacts during construction, operation and rehabilitation, as well as requirements during the project closure phase.
Law No. 10440 (07.07.2011) amended	"On Environmental Impact Assessment" (as amended) - sets the principles, determines the project categories with environmental impacts, and establishes the responsibilities and rights of institutions and public in the procedure. The law determines the competencies of National Environmental Agency (NEA) and Ministry of Tourism and Environment (MTE) in the procedure, review of Environmental impact Assessment report and final approval.	Referring to the requirements of this law, an Environmental impact Assessment report was drafted
DCM No. 686 (29.07.2015) Amended	"On the rules, responsibilities, timelines for the Environmental Impact Assessment procedure and the transfer procedure of the decision for the environmental declaration" amended - The act sets specific and detailed rules for the procedure, framework and structure of Environmental Impact Assessment report and appendices, timeframe of the procedure, application for approval, final decision and impact monitoring and reporting during the project execution.	The content of the Environmental Impact Assessment report is based on the requirements of this Decision.

Legislation	Overview	Relevance to the Project
DMC No. 247 (30.04.2014)	"On the determination of rules, requirements and procedures for public information and involvement in the environment decision-making process" - The act sets specific requirements for consultation with stakeholders, focusing on consultation with local communities. It also gives details on the procedure to be followed, timeline and media publishing.	Pursuant to the requirements of this decision, in the drafting phase of the Environmental impact Assessment report, consultations were conducted with stakeholders.

2.4 Public consultations and disclosure and dealing with objections

The Blue 3 Photovoltaic Park Project is committed to transparent, inclusive, and proactive stakeholder engagement throughout its lifecycle. Public consultations and disclosure activities ensure that local communities, authorities, land users, and other stakeholders are informed, can raise concerns, and see that feedback is addressed. Engagement follows Albanian legislation and EBRD Performance Requirement 10 (PR10).

Key aspects of stakeholder engagement include:

- Stakeholder Identification: Local communities, municipal authorities, environmental and energy agencies, landowners, NGOs, utility companies, contractors, and suppliers.
- Early and Ongoing Engagement: Consultation during planning on project design, potential impacts, and local priorities; continuous communication throughout construction and operation.
- Community Liaison Officer (CLO): Dedicated officer to facilitate consultations, manage communications, and address concerns promptly.
- Consultation Activities:
    - Municipal and community meetings
    - Individual discussions with landowners and farmers
    - Engagement with environmental authorities on ecological, biodiversity, and water management issues
    - Public disclosure of ESIA and Stakeholder Engagement Plan (SEP) via municipal offices and project website
- Stakeholder Concerns Addressed:
    - Transparent and fair land compensation
    - Environmental protection (biodiversity, water management, noise, visual impacts)
    - Local employment and economic benefits
    - Road access and traffic management
    - Community development initiatives (social infrastructure, education programs)
- Grievance Mechanism:
    - Stakeholders can submit complaints via email, phone, mail, in-person at the CLO office, or on-site complaint boxes
    - Complaints acknowledged within five working days; corrective actions proposed within 30 working days
    - Confidentiality maintained; unresolved grievances can be escalated to EBRD Independent Project Accountability Mechanism (IPAM)

- Future Engagement: Regular updates, meetings, and monitoring during construction, commissioning, and operation; stakeholder feedback informs adaptive management and operational practices

Through early involvement, open communication, and effective grievance handling, the Blue 3 Photovoltaic Park Project promotes community trust, addresses land, environmental, infrastructure, and social concerns, ensures transparency and regulatory compliance, and supports sustainable long-term stakeholder relationships.

Furthermore, during this period the following authorities presented their opinion:

- National Environmental Agency
- National Agency of Protected Areas
- Ministry of Tourism and Environment

2.5 Project Description and Location

Project Components

The Blue 3 Photovoltaic Park, developed by SPV Blue 3 sh.p.k., will be located within Fier Municipality, southwestern Albania. The Project will have a total installed capacity of 36.16 MW (AC) and will generate approximately 74 GWh of clean electricity per year, contributing to Albania's renewable energy expansion and energy security goals.

The Project area includes the following main components:

a) The Plant

- Installation of monocrystalline photovoltaic (PV) panels mounted on fixed structures with a 25° tilt angle;
- 35 kV underground cabling connecting to the electrical system;
- A 35 kV panel hall and a 50 MVA transformer located within the existing Blue 2 35/220 kV substation;
- Internal access roads, security fencing, and operational facilities.

b) Infrastructure and Public Services

- Improvement and use of existing transportation access roads;
- Connection to public utilities, including electricity supply, water, and wastewater management systems.

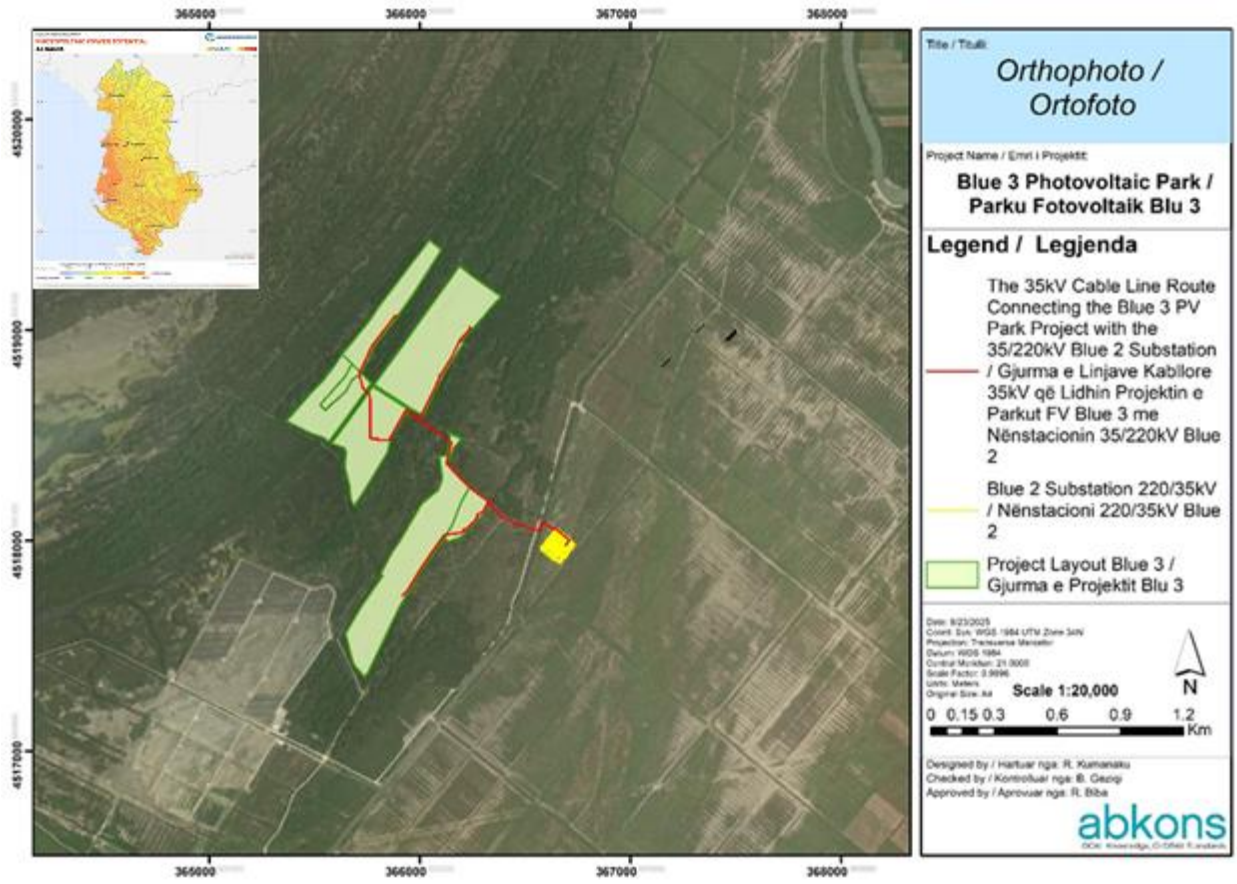

Figure 2: Project location

3. Rationale for the Project

Albania's energy system has historically relied on hydropower, which accounts for nearly all national electricity generation. However, climate variability and growing energy demand highlight the need to diversify energy sources.

With 240–260 sunny days per year, Albania—especially the Fier–Vlora coastal region—offers excellent conditions for solar energy production. Developing photovoltaic projects like Blue 3 supports the Government's strategic objectives defined in the National Energy Strategy 2021–2030, which aims to:

- Strengthen the security and reliability of energy supply;
- Increase the share of renewable energy in the energy mix;
- Enhance energy efficiency and reduce GHG emissions;
- Integrate Albania's energy market with regional and European networks.

The Blue 3 Project contributes directly to these objectives by producing renewable electricity, reducing dependence on imports, and minimising environmental impacts compared with conventional energy generation.

3.1 Description of Proposed Works

The proposed works will include:

- Improvement of access roads to facilitate construction traffic and safe access;

- Land levelling and clearing of vegetation for site preparation;
- Installation of security fencing and gates around the site perimeter;
- Piling and mounting of PV panel structures;
- Excavation and cabling for electrical connections;
- Installation of inverters and control equipment;
- Construction of a control building and substation facilities;
- Finalisation of internal access roads and surface finishing.

All construction and operational activities will follow Good International Industry Practice (GIIP) and comply with Albanian environmental, safety, and planning regulations, ensuring minimal disruption to the local community.

3.2 Technical Overview

The Project will use high-efficiency monocrystalline bifacial PV modules and Sungrow inverters, designed and tested to meet international standards (ISO 9001, ISO 14001, ISO 45001, IEC 61701, IEC 62716).

Key technical features:

- Installed capacity: 36.16 MW (AC)
- PV modules: 59,424 units of 720 Wp each
- Inverters: 113 units, each 320 kW AC
- Estimated annual generation: 74,083,544 kWh/year
- Performance ratio: 90.5%
- Solar panel efficiency: 23.2%
- Land area occupied by panels: 18.5 ha

The SPV is committed to applying Best Available Techniques (BAT) for all equipment and remains open to adopting more efficient technologies during procurement and implementation to enhance long-term sustainability and performance.

Connection to the Power System

Electricity generated by the Blue 3 Photovoltaic Park will be transmitted via 35 kV underground cables to a 50 MVA transformer within the Blue 2 Substation. From there, power will be evacuated to the national transmission grid through a 220 kV double-circuit line connected to the Hoxharë Substation.

The substation will include:

- SCADA system for monitoring and control;
- Protection, communication, and auxiliary systems;
- Lighting, fencing, and access control measures to ensure operational safety.

The infrastructure will be designed to meet national technical regulations and international standards for renewable energy grid integration.

Fire Protection

The Project will include a fire detection and alarm system with sensors in operational areas, manual call points, and fire extinguishers in compliance with fire safety standards. The system will ensure early detection, alarm activation, and immediate response capability to prevent and manage potential fire incidents.

Waste Management

During construction and operation, the Project will generate small quantities of inert, packaging, and municipal solid waste.

- Excavation waste will be reused for backfilling where possible.
- Vegetation and inert materials will be disposed of at authorised sites through licensed waste operators.
- Municipal waste will be segregated and collected for proper treatment or disposal in accordance with Law No. 10463/2011 “On Integrated Waste Management.”

  No hazardous waste generation is anticipated.

The Project site is accessible via existing local roads from Hoxharë village. The final section (approx. 4.1 km) is unpaved and will require minor improvements such as grading, gravel stabilisation, and proper signage.

Internal roads within the Project site will be:

- 3.5 meters wide, with a 2% axis slope;
- Constructed with stabilized gravel and bituminous layers to ensure durability and long-term access;
- Designed in accordance with AASHTO, EU standards, and Albanian Road Authority (ARRSH) guidelines.

These upgrades will provide reliable access for construction, operation, and maintenance while ensuring safe transport of equipment and personnel.

3.3 Description of the main Project Components

Technical Overview and Main Project Components

The Blue 3 Photovoltaic Park will generate renewable electricity using high-efficiency solar technology. During the design phase, different types of photovoltaic (PV) modules were considered, including monocrystalline, polycrystalline, thin-film, and bifacial panels. Monocrystalline modules were selected for their high efficiency, reliability, and suitability to the climatic conditions of Fier Municipality. At the construction stage, SPV Blue 3 will integrate the latest available solar technologies to ensure long-term sustainability, operational safety, and optimal energy production.

Key Technical Features

- Total installed capacity: **36.16 MW (AC)**
- Number of PV modules: **59,424**
- Module capacity: **720 Wp each**
- Number of inverters: **113 units**
- Expected annual electricity generation: **~74 GWh**
- Specific yield: **1,732 kWh/kWp/year**
- Performance ratio: **90.5%**
- Panel efficiency: **23.2%**
- Tilt angle: **25°**
- Total land area covered by panels: **~18.5 hectares**

These features allow the Park to supply electricity equivalent to the annual consumption of around 25,000 households while reducing greenhouse gas emissions compared to fossil-fuel-based generation.

Technology and Quality Standards

All components—including PV panels, inverters, mounting structures, and control systems—will meet internationally recognized quality and safety standards, including:

- ISO 9001:2015 (Quality Management)
- ISO 14001:2015 (Environmental Management)
- ISO 45001:2018 (Occupational Health & Safety)

PV modules will be tested to withstand harsh environmental conditions, including salt mist, ammonia exposure, and sand abrasion (IEC 61701, IEC 62716, DIN EN 60068-2-68). This ensures the equipment remains durable and efficient over its operational life.

Design and Operational Approach

The Park will follow **Best Available Techniques (BAT)** in the selection and installation of equipment, minimising environmental impacts and maximising energy yield. SPV Blue 3 will adopt improved technologies whenever feasible to enhance efficiency and reduce operational costs, ensuring alignment with international good practice and evolving renewable energy standards.

Sustainability Commitment

Through robust design, high-quality components, and modern solar technology, the Blue 3 Photovoltaic Park represents a sustainable investment in Albania's renewable energy sector. It will contribute to national energy diversification, reduce dependence on hydropower, and support the country's transition to a low-carbon energy system.

Main Project Components

1. **Solar PV Modules**
   The Park will have 59,424 monocrystalline PV modules, converting sunlight into electricity in a clean and silent process. Modules will be installed at a **25° slope**, optimized for energy production, and are tested for durability under harsh environmental conditions.
2. **Inverters**

Electricity from the PV modules is in direct current (DC) form. 113 inverters will convert DC into alternating current (AC) suitable for the Albanian national grid.

3. **Electrical Connection and Grid Integration**

The Park will connect to the national grid via 35 kV underground cables leading to a 50 MVA transformer at the Blue 2 Substation. The transformer will step up the voltage to 220 kV, transmitting electricity to the Hoxharë Substation, ensuring reliable delivery of clean energy.

4. **Support Infrastructure**

Essential infrastructure includes:

- Internal access roads and parking areas
- Security fencing and controlled access points
- Control building for monitoring, communication, and operational management
- Fire protection systems (detectors, alarms, extinguishers)

5. **Construction Activities**
   Key activities include:

- Site preparation, land levelling, and vegetation clearing
- Installation of PV panels, mounting structures, and inverters
- Excavations for cabling and utilities
- Construction of access roads and infrastructure
- Connection to the existing electrical substation

6. **Technology and Quality Assurance**
   SPV Blue 3 will follow Good International Industry Practices (GIIP) and international standards (ISO 9001, ISO 14001, ISO 45001), ensuring safe, efficient, and high-quality operations. Adoption of

improved technologies during implementation is anticipated to optimize performance and energy output.

7. **Land Use and Environmental Considerations**
   PV modules will cover approximately **184,592 m²** of previously degraded land. The site has been selected to minimise environmental and social impacts while contributing to renewable energy targets and reducing greenhouse gas emissions.

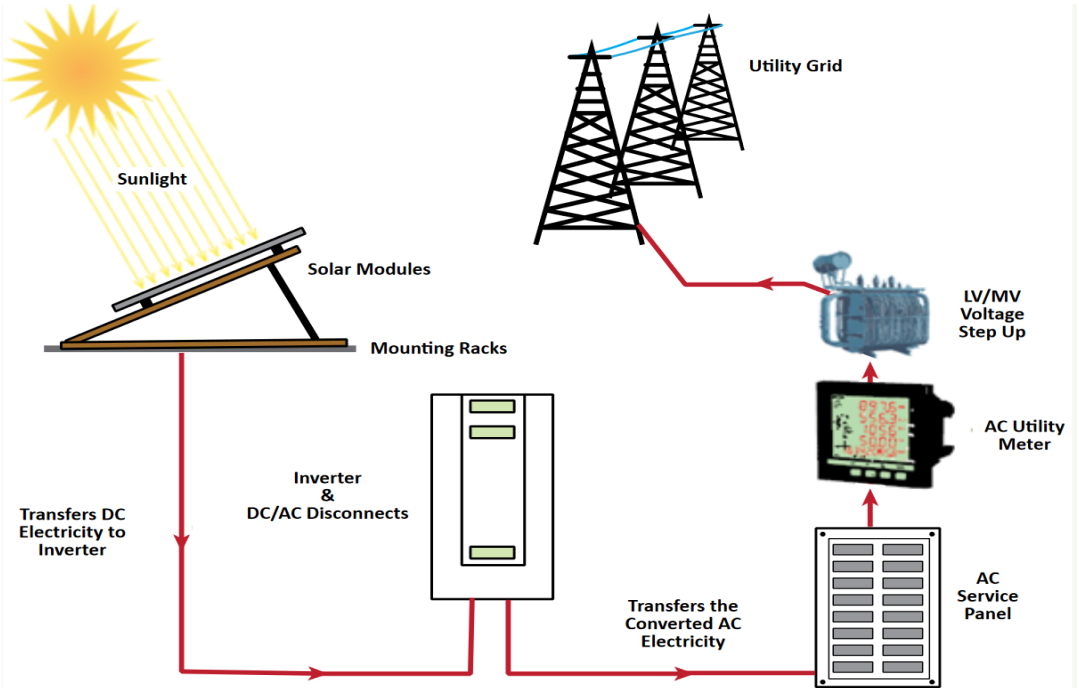

Figure 3. Overview of Utility Scale Solar PV Plant (IFC, 2015)

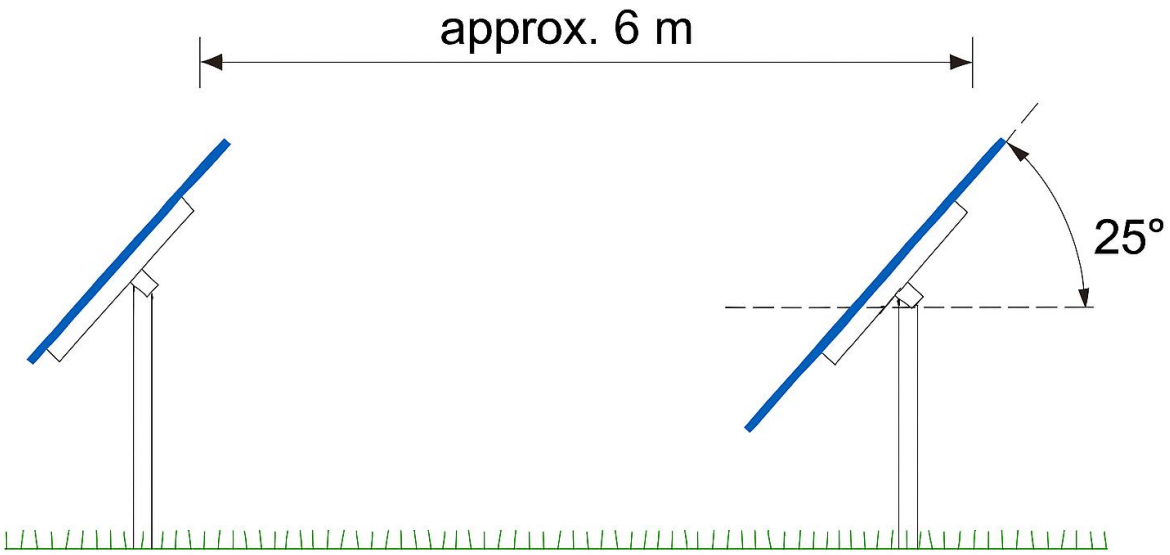

Figure 4. Lateral view of the tracker

The Project will also require a building to accommodate the SCADA (Supervisory Control and Data Acquisition) equipment for the command, control and protection of the Project. This will be manned by the technicians employed for the control, operation and maintenance of the Project.

In addition to the above key components a large-scale solar PV project also requires the following infrastructure:

- Onsite (buried) cabling;
- Fencing and security measures;
- Access tracks;
- Material storage facilities.

During the construction phase, one or more temporary construction compound(s), including site offices, material and equipment storage etc., will be required as well as temporary roadways to facilitate access to all parts of the Development site.

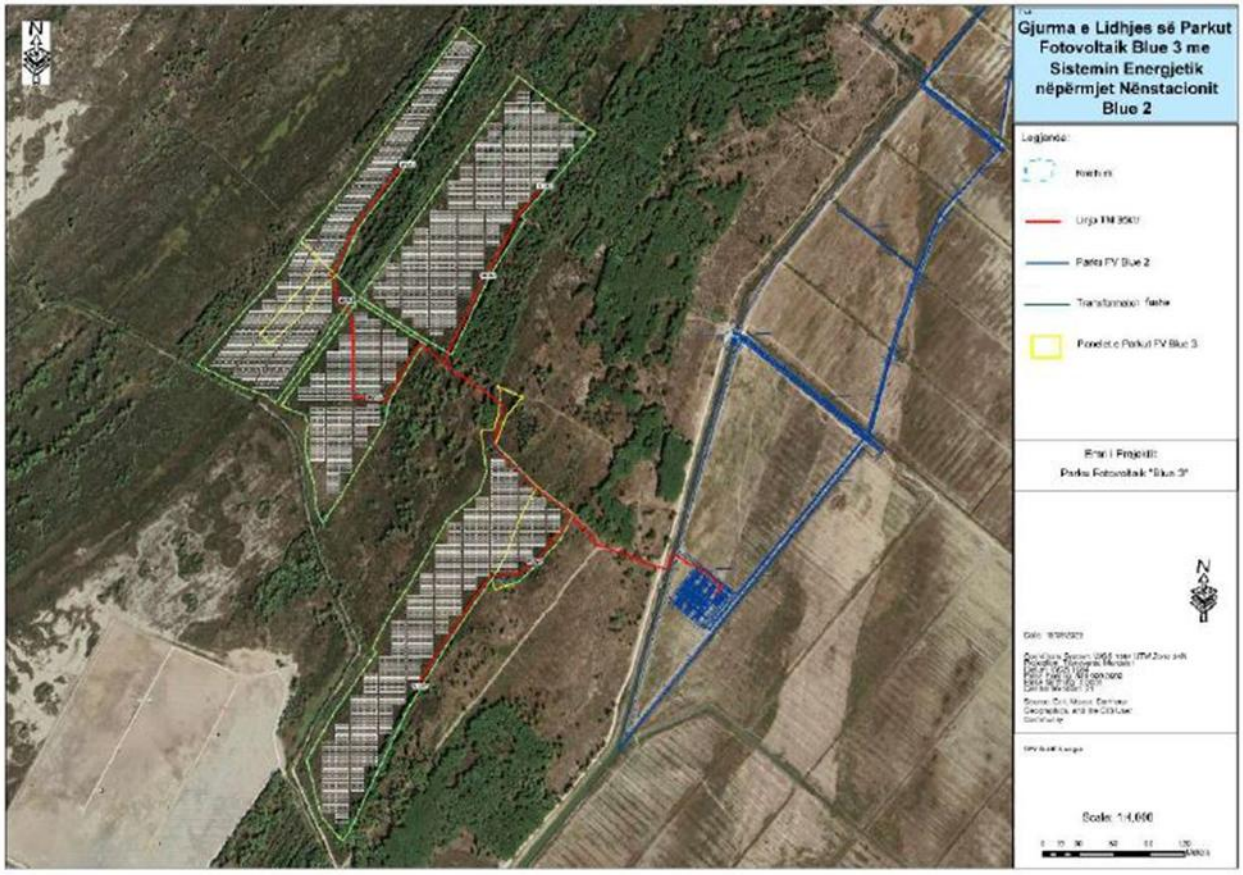

Figure 5. Blue 3 Project Layout and alignment of the grid connection corridor for the FV Blue 3 Solar Park through the Blue 2 Substation

3.4 Road infrastructure and access

The Blue 3 Photovoltaic Park is easily accessible via the surrounding road network. Main national roads provide connection to the area, while secondary roads link nearby villages and local facilities. The local infrastructure includes schools, healthcare centers, and basic services such as water supply and sewerage. Some secondary roads are unpaved and lack lighting, but traffic volumes are low, and these roads mainly serve local residents.

To support the construction and operational needs of the Park, internal and access roads will be developed following international good practice. These roads will ensure safe and efficient movement of construction equipment, materials, and personnel. Key planned improvements include:

- Excavation and site preparation
- Placement of a 15 cm gravel layer
- Installation of a 10 cm stabilizer or bituminous sand layer

A temporary access road will follow an existing field track used for drainage and maintenance activities. The main route to the site begins with the Hoxharë access road, which is signposted and in fair condition, followed by the Hoxharë–Grykë road, which is approximately 4.1 km long and currently unpaved. Depending on coordination with the Local Government Unit (LGU), improvements such as paving and additional signage may be implemented by the developer.

The road infrastructure is designed to safely accommodate both construction and operational traffic over the lifetime of the Park, while minimizing impacts on the local community and environment.

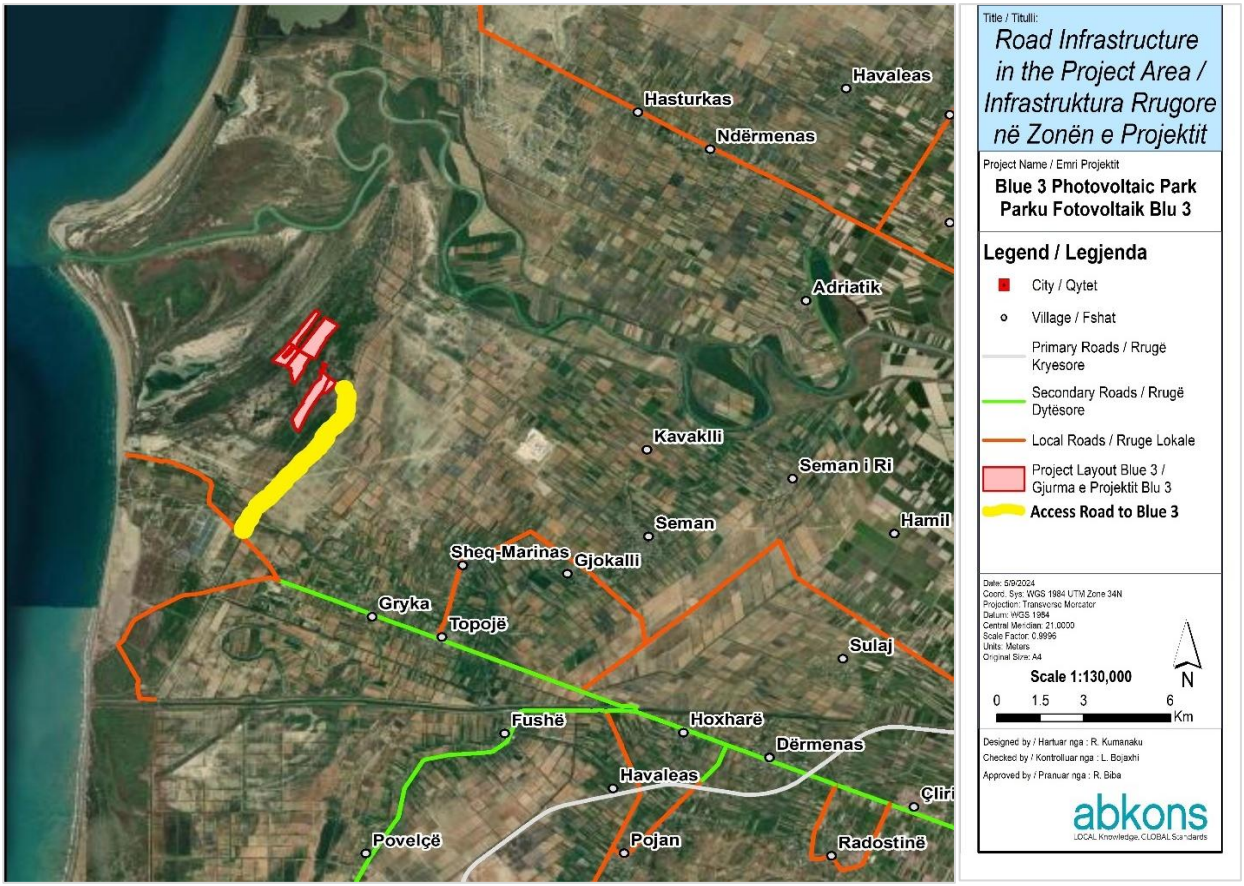

Figure 6: Access roads

3.5 Project schedule

The Blue 3 Photovoltaic Park will be implemented through a series of clearly defined phases. Each phase is designed to ensure safety, efficiency, and full compliance with Albanian legislation as well as the EBRD Performance Requirements (PRs). The phased approach also helps manage environmental and social impacts, while supporting local communities and promoting responsible construction practices.

The project is currently in the process of obtaining the Environmental Impact Assessment (EIA) permit from the National Environment Agency, in full compliance with Albanian environmental legislation. This approval ensures that the project meets national environmental standards and incorporates mitigation measures for potential impacts during construction and operation.

Table 1 Proposed Implementation Schedule for Capital Expenditures and Key Project Activities

Capital Expenditures / Activities	Year 1 Q1	Q2	Q3	Q4	Year 2 Q1	Q2	Q3	Q4	Year 3 Q1	Q2	Q3	Q4	Year 4 Q1	Q2	Q3	Q4
Issuance of Permits and Licenses	✔	✔	✔													
Civil Works and Construction Site		✔	✔	✔	✔	✔	✔	✔								
Procurement and Supply of Equipment			✔	✔	✔	✔										
Construction (structures, panels, inverters, transformers)				✔	✔	✔	✔	✔	✔	✔	✔	✔				

Testing and Commissioning					✔	✔										
Connection to Transmission Network (UGTL)						✔	✔									
Start of Operation – 36 MW (AC)							✔									

Table 2 Timeline Overview

Phase	Duration	Key Notes
Construction Start	Month 1	Mobilization begins
Site Preparation	1–2 months	Clearing, leveling, surveying
Civil and Electrical Works	12–48 months	PV installation, roads, buildings
Commissioning and Testing	1–2 months	System checks and validation
Start of Commercial Operation	After commissioning	Plant begins generating electricity
Operational Life	~30 years	Routine O&M, no emissions
Decommissioning	6–12 months	Dismantling and site restoration

This phased schedule ensures the Blue 3 Photovoltaic Park is implemented safely, efficiently, and in full compliance with Albanian legislation and EBRD Performance Requirements, while providing a long-term contribution to Albania's renewable energy capacity.

3.5.1 Underground Transmission Line (UGTL) Connection

The Blue 3 Photovoltaic Park does not involve the construction of overhead transmission line (OHL) towers. This is because the PV park is located close to the Blue 2 substation, making an underground connection the most practical and environmentally sensitive solution.

- A 35 kV underground transmission line (UGTL) will connect Blue 3 PV Park directly to the Blue 2 substation. At Blue 2, the voltage is increased to 220 kV for onward transmission to the Hoxharë Substation, ensuring efficient integration of renewable energy into Albania's national grid.
- The UGTL route has been carefully designed to avoid sensitive habitats, watercourses, and other environmentally or socially sensitive areas, minimizing impacts on the surrounding environment and local communities.
- Safety measures, including fire protection and controlled installation practices, will be applied along the UGTL corridor.
- To protect people and wildlife, electromagnetic field (EMF) mitigation measures will be implemented in accordance with Albanian legislation and international best practice.
- The Blue 2 substation and associated infrastructure will also include safety systems and monitoring to ensure safe and reliable operation.

Key Points:

- No overhead transmission line towers are required due to the proximity of the Blue 2 substation.
- The UGTL is the sole transmission infrastructure connecting Blue 3 to the national grid.
- Environmental and safety measures comply with Albanian legislation and EBRD Performance Requirements:
    - PR1: Assessment and Management of Environmental and Social Risks and Impacts
    - PR3: Resource Efficiency and Pollution Prevention
    - PR4: Community Health, Safety, and Security
    - PR6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

The underground connection provides a safe, low-impact, and reliable link to the grid, avoiding the need for tall OHL towers while minimizing ecological, visual, and social impacts.

4. Overview of Project Phases and Activities

The Blue 3 Photovoltaic Park will be developed in clearly defined phases to ensure safe, efficient, and environmentally responsible implementation:

1. Mobilization / Pre-Construction Phase: Preparing the site, mobilizing equipment and materials, and organizing the workforce while minimizing environmental and social impacts.
2. Construction and Installation Phase: Civil and electrical works, installation of PV panels, inverters, and supporting infrastructure.
3. Operation Phase: Routine operation and maintenance of the solar park, producing renewable electricity with minimal environmental impact.
4. Dismantling / Decommissioning Phase: Removal or replacement of equipment at the end of its life and restoration of the site to its original condition.

Electricity produced will be exported via a 35 kV underground transmission line to the Blue 2 substation, then onward to the Hoxharë Substation, in agreement with SPV Blue 2 Ltd., ensuring integration with the national grid.

The construction period is expected to last up to 48 months, including 12 months for site preparation, with final schedules determined during the detailed design phase. Each phase will be carefully managed to minimize potential environmental and social impacts during construction, operation, and decommissioning.

Potential environmental and social impacts can result as a consequence to activities undertaken during construction, operation and decommissioning phases; key activities during these phases are summarised in the sections below.

4.1 Mobilization / Pre-Construction Phase

Before construction begins, the project site will be prepared and all necessary resources mobilized in a way that ensures safety, efficiency, and compliance with Albanian legislation and EBRD Performance Requirements (PRs).

Key activities include:

- **Resource Mobilization:** Procuring materials and equipment responsibly, engaging subcontractors, and organizing the workforce with clear roles and health and safety measures.
- **Logistics Planning:** Transporting materials and equipment to the site using existing roads, while avoiding soil erosion, sedimentation, or other environmental impacts.
- **Site Preparation:** Clearing, surveying, and leveling the area, preparing installation zones for PV panels, and minimizing impacts on local habitats.
- **Equipment Deployment:** Moving construction machinery such as bulldozers, excavators, and cranes in accordance with environmental and safety protocols.
- **Workforce Management:** Sourcing most of the workforce locally to support the community and reduce commuting impacts.

No worker accommodation buildings are planned. All equipment, PV panels, and materials will be transported in containers via existing roads. This phase ensures the site is fully ready for safe and efficient construction while minimizing environmental and social impacts.

4.1.1. Construction and Installation Phase

The construction phase of the Blue 3 Photovoltaic Park involves building the solar energy park and all associated infrastructure safely, efficiently, and in compliance with Albanian legislation and EBRD Performance Requirements (PRs).

Key Activities Include:

- Site Access and Security:
  Installation of a security fence, controlled access for personnel and vehicles, and temporary facilities for staff and equipment.

- Temporary Utilities:
  Provision of electricity, water, sanitation, and lighting, designed to minimize disturbance to neighbors.

- Civil Works:
  Improvement of internal access roads, land leveling, site clearance, fencing, and preparation of areas for PV panel foundations.

- Electrical and Structural Works:
  Installation of PV panels on galvanized steel frames, underground cabling, inverters, transformers, and ancillary buildings (substation, O&M building, water and septic facilities).

- Materials Handling:
  Delivery and storage of construction materials (concrete, steel, cables, panels) following a Transport Management Plan to minimize environmental and social impacts.

- Panel Installation:
  Foundations for panels will be secured with vertical piles; framing and panels will be installed in a staged, assembly-line approach. Inverters and electrical connections will be completed following testing protocols.

- Temporary Facilities and Storage:
  Laydown areas for equipment, containers, and sanitary cabins will be provided. Most workers will be sourced locally, and no on-site housing is required; non-local staff will use nearby accommodations.

- Workforce:
  Approximately 50–100 personnel including engineers, specialists, and local workers will be employed, with peak staffing during intensive construction periods. All workers will receive health and safety training and PPE.

- Traffic and Logistics:
  A Traffic Management Plan will regulate vehicle movements and material deliveries to minimize disruption to local communities. Existing access roads will be upgraded as needed for construction traffic.

- Environmental Management:
  Dust, noise, and light will be controlled, grading and vegetation removal will be minimized, and emergency response procedures will be in place for safety.

Construction Duration:

- Site Preparation: ~1–2 months
- Civil and Electrical Works: ~12–48 months
- Testing and Commissioning: ~2 weeks
- Commercial Operation: Following successful commissioning

This phase ensures the PV park is constructed efficiently while protecting local communities, minimizing environmental impacts, and supporting local employment.

4.1.2. Operations and Maintenance

Once construction is complete, the Blue 3 Photovoltaic Park will be operated and maintained by a dedicated O&M team in accordance with established procedures and health, safety, and environmental standards. The plant is expected to operate for approximately 30 years with minimal environmental impact.

Key Features of Operation:

- No emissions, noise, or hazardous materials during normal operation.
- Facility will be monitored and managed electronically by trained personnel.
- Routine Maintenance **i**ncludes preventive and corrective activities such as:
    - Monthly cleaning of PV panels to maintain efficiency
    - Vegetation control within the PV park
    - Inspection of panels, cables, transformers, inverters, and supporting structures
    - Maintenance of ancillary facilities, substation, internal roads, and transmission lines

Water and Environmental Management:

- Panel cleaning may require water (approx. 0.4 liters per m² per cleaning), with measures to optimize water use and minimize environmental impact.
- Eco-friendly cleaning agents will be used where necessary.

Workforce:

- Around 10 staff, including skilled, semi-skilled, and unskilled workers, will operate and maintain the plant.
- Staff will receive ongoing training in environmental compliance and safety procedures.

Maintenance Program:

- Preventive maintenance ensures optimal plant performance and longevity.
- Corrective maintenance addresses faults or equipment issues as they arise.
- Warranties on PV panels and equipment will be tracked and managed.
- Maintenance activities are coordinated using Computerized Maintenance Management Software (CMMS).
- Specialized services (fire protection, calibration, security, waste disposal) will be conducted as needed to maintain compliance and safety.

Environmental Compliance:

- Operations will adhere to issued environmental permits and relevant laws.
- Waste management and proper disposal procedures will be followed.
- Annual internal audits will ensure environmental protection and operational standards are maintained.

This structured O&M approach ensures the PV park operates efficiently, safely, and sustainably throughout its lifecycle while minimizing environmental and social impacts.

4.1.3. Decommissioning and Closure

The Blue 3 PV Plant is expected to operate for approximately 30 years. At the end of its economic life, the infrastructure may be upgraded, extended, or decommissioned. Upgrades could include the replacement of old PV modules or the addition of new components to maintain or increase the plant's capacity.

If the project is decommissioned, all PV panels and ancillary structures will be dismantled and either recycled or safely disposed of in accordance with applicable regulations. The project area will then be restored to its original condition, ensuring responsible site rehabilitation.

The decommissioning process is expected to take between six and twelve months. Environmental impacts during this phase are anticipated to be similar to, or lower than, those experienced during construction, with appropriate measures applied to minimize disturbance to the surrounding environment.

This approach ensures sustainable management of resources and the responsible restoration of the site at the end of the plant's operational life..

5. Summary of E&S baseline conditions

5.1 Physical Environment

This section presents the physical baseline of the project area under the following headings:

- *Climate and meteorology;*
- *Air quality;*
- *Noise in the Project Area;*
- *Geology;*
- *Soils;*
- *Hydrology;*
- *Topography and Landscape;*

Baseline data has been collected based on desktop research of available information (secondary data), as well as primary data collected for air quality, noise, soils, surface water and groundwater, as part of field studies undertaken in the Project area between January- February 2021.

5.1.1. Climate and Meteorology

The Blue 3 Photovoltaic Park is located in a region characterized by a Mediterranean climate, influenced by proximity to the Adriatic Sea and nearby coastal lagoons. The area experiences moderate annual temperatures and favorable wind conditions, alongside high levels of solar irradiation, providing excellent conditions for solar energy generation. Historical meteorological data from the Fier station indicate that the site is generally stable, with minimal exposure to extreme climate events, which supports reliable operation of the solar park throughout its lifecycle.

5.1.2. Air Quality

Air quality in the project area is generally within acceptable limits. Monitoring conducted in December 2024 identified localized exceedances of sulfur dioxide (SO_2) and hydrogen sulfide (H_2S), likely due to nearby industrial activities and suboptimal waste management practices. During construction, dust emissions from exposed sandy soils and limited vegetation are anticipated but are expected to be temporary. Mitigation measures, such as water spraying, limiting vehicle speeds, and regular maintenance of construction machinery, will minimize these impacts. No significant air emissions are expected during the operational phase.

5.1.3. Noise in the Project area

Baseline noise levels in the area are low due to the rural and sparsely populated setting. Temporary increases in noise are expected during construction, primarily from excavation, earthworks, and heavy machinery operation. Noise mitigation measures will include careful scheduling of works, the use of low-noise equipment, and routine machinery maintenance. Once operational, noise generation from photovoltaic panels and associated infrastructure is negligible.

5.1.4. Geology

The project site is located on a flat coastal plain characterized by saline marshlands and sandy soils. The terrain is prone to erosion and flooding, and subsurface conditions are generally unsuitable for heavy infrastructure without stabilization. Engineering measures, such as soil stabilization, erosion control, and proper foundation design, will be implemented to ensure the safe and durable construction of the solar park.

5.1.5. Soils

Soils in the area are predominantly Fluvisols and Arenosols, which are highly saline and of low fertility. These conditions render the land largely unsuitable for agriculture, with much of the area remaining uncultivated. Construction activities may increase the risk of soil erosion, compaction, and local flooding due to disrupted drainage patterns. Mitigation measures will include limiting heavy machinery use in sensitive areas, implementing sediment and flood control measures, and restoring disturbed soils after construction. Operational activities are not expected to have significant impacts on soils.

The soils within the project area are characterized by:

- Type: Predominantly Fluvisols and Arenosols, typical of coastal marshlands.
- Texture: Sandy and loamy textures dominate, with poor structure and low water retention capacity.
- Salinity: High salinity levels due to proximity to the Adriatic Sea and historical marine influence. This significantly limits agricultural productivity.
- Fertility: Very low. The land is considered non-productive and has not been cultivated for years.
- pH Levels: Slightly alkaline, ranging between 7.8 and 8.3, which is consistent with saline soils.
- Organic Matter: Low organic content due to poor vegetation cover and historical degradation.
- Erosion Risk: Moderate to high, especially in areas with exposed sandy soils and lack of vegetation. Wind and water erosion are both concerns.
- Compaction: Risk of compaction during construction activities, especially from heavy machinery.
- Land Use: The land is currently unused and abandoned due to its poor agricultural potential.

These soil conditions support the decision to site the photovoltaic park here, as the land has limited alternative economic value and is unsuitable for farming or intensive development

5.1.6. Hydrology

The project area is part of the Seman River catchment. Surface water features include drainage channels and temporary ponds, while groundwater quality is variable. Many households rely on private water tanks due to limited public water infrastructure. Flooding is a key concern in the area, exacerbated by outdated drainage systems, seasonal river overflows, and coastal subsidence, particularly at Seman Beach. Construction and operation will implement comprehensive water and flood management plans to protect both surface and groundwater, and operational water use, primarily for PV panel cleaning, will be carefully managed to minimize environmental impact.

Surface Water and Hydrology

- The project area lies within the Seman River catchment, a low alluvial zone with historical modifications due to embankment failures and vertical erosion.
- Wetlands along the coast are remnants of trapped seawater during delta formation.
- The drainage-irrigation system is limited and poorly maintained, with tertiary canals often silted or overgrown with reeds.
- A first-order drainage canal lies approximately 500 meters east of the project site, marking the western boundary of the Blue 2 PV park.

Flooding and Flow Data

- Flooding is a significant risk due to outdated infrastructure and coastal subsidence.
- Maximum discharge at Kuç Bridge:
  - 2,870 m³/s (100-year flood return period)
  - 2,580 m³/s (50-year flood return period)
- Monthly average water flow at Kuç Bridge ranges from:
  - 10.5 m³/s (August) to 155 m³/s (March)
- Monthly average water flow at Mbrostar Station ranges from:
  - 41.2 m³/s (October) to 161 m³/s (February–March)

Groundwater Quality

- Groundwater is not used for drinking due to high salinity and bacteriological contamination.
- Aquifer thickness: 2.7 to 3.5 meters
- Specific yield: 0.7–3.25 liters/second/meter
- Groundwater quality is generally good, except in the Ndërnenas–Metaj area, where it is poor.

Aquifer Types

- Alluvial Aquifer: Composed of clay, sand, and gravel; hydraulically connected to the Seman River.
- Beach Sand Aquifer: Extends along the Vjosa–Seman coast; thickness ranges from 25–100 meters; composed of fine to medium sand with fossil fragments.

Key Issues

- Over-extraction has led to hydraulic stress and deterioration of groundwater quality.
- Oil exploitation and agriculture have contributed to contamination of rivers and aquifers.
- Construction activities may temporarily affect groundwater through sedimentation, spills, and wastewater discharge, but impacts are expected to be minor with proper mitigation.

5.1.7. Flooding

Flooding and Hydrological Risk

The project site, located between the Seman River and the Adriatic Sea, sits at very low elevations (0.2–1.2 m above sea level), making it highly vulnerable to flooding. Surface water is managed through the Hoxhara 3 canal and its pumping station.

A Hydrological and Hydraulic Analysis (December 2024) identified two primary flood types:

- Fluvial Flooding (Seman River): For a 100-year event, flood depths may reach 0.8 m in the north and 1.3 m in the south.
- Pluvial Flooding (Extreme Rainfall): Heavy rainfall (>70–80 mm/24 h) can overwhelm local drainage, especially near the Hoxhara canal.

Sea Level Rise (SLR): Historical rise along the coast is 15 cm. Projections for 2050 range 0.24–0.26 m; a conservative planning value of 0.30 m is recommended.

Additional Risk Factors: Degraded embankments, lateral erosion, reduced groundwater levels, and hydromorphological instability of channels further increase flood vulnerability and impact agricultural land and water supply.

5.1.8. Topography and Landscape

The terrain is predominantly flat, interspersed with marshland and dune features. Flood-prone areas are present in low-lying zones, which are considered in the site layout and design. The visual impact of the project is expected to be minor due to low elevation, sparse population, and moderate landscape quality. Landscape integration measures, such as buffer zones, vegetation screening, and careful infrastructure placement, will be applied to reduce visual and flood-related impacts further. Overall, the site's topography and landscape are suitable for solar park development, with minimal disruption to the surrounding environment.

The project area is part of the Divjakë–Karavasta region, characterized by:

  - A lowland plain with minimal elevation variation.
  - Small hills near Divjakë, located approximately 8.5 km northeast of the site.
  - Karavasta coastal lagoon to the northwest.
  - Seman and Shkumbin river deltas to the southwest and northwest.
  - Sand dunes and sandy beaches along the western coastal margin.
- Elevation: The terrain ranges from 0.2 to 1.2 meters above sea level, making it highly sensitive to flooding and sea level rise.
- Coastal Morphology:
  - The coastline is deltaic and microtidal, with tidal amplitudes around 0.50 meters.
  - Seman beach dunes extend for approximately 1 km, with a width of 15 meters and a height of up to 6 meters.
  - These dunes are shaped by wind, wave action, and sediment deposition.

Landscape Character

- The area is primarily rural and agricultural, with degraded vegetation and low ecological density.
- The Landscape Visual Quality Index (VQI) was used to assess visual sensitivity, scored on a scale from 0 to 10:
  - The project area scored low to moderate, indicating limited scenic or recreational value.

Visual Sensitivity and Receptors

- High-sensitivity receptors (e.g., residential areas, scenic viewpoints) are limited.
- The nearest settlement is Grykë village, approximately 1 km from the PV site.
- Scattered residential structures exist, but the area is largely devoid of sensitive receptors and not crossed by major roads.

Visual Impact

- Temporary impacts during construction due to machinery, materials, and UGTL installation.
- Long-term impacts from ground-mounted PV arrays and infrastructure.
- Visual intrusion is expected to be minor, especially as vegetation regrows and the site stabilizes.
- The presence of similar infrastructure in the region reduces the uniqueness of the visual change.

5.2 Biological Environment

5.2.1 Habitat and protected areas

The Blue 3 Photovoltaic Park project is located near the Albanian Adriatic coast, an area known for its rich and diverse natural environment. Although no protected areas fall directly within the Project Development Area (PDA), several significant conservation sites lie within 20 km, forming a network of ecologically important habitats that support both resident and migratory species.

Key protected areas in the vicinity include:

- **Divjakë-Karavasta National Park (22,230 ha):** This internationally recognized Ramsar site and Important Bird Area (IBA) hosts over 1,500 species. It features a mosaic of coastal lagoons, salt marshes, and pine forests, providing essential breeding, feeding, and resting habitats for waterbirds and other wildlife.
- **Pishë Poro–Nartë Protected Landscape:** A coastal landscape of sand dunes, pine forests, and salt marshes, supporting a range of specialized flora and fauna adapted to saline and sandy environments.
- **Emerald Network Sites:** Areas including Divjakë-Karavasta and Vjosa-Nartë-Pishë Poro are designated under the Bern Convention, reflecting their high biodiversity value at the European level.
- **Natural Monuments:** Features such as the “Kurora e Semanit” riparian forest and Seman Dunes are recognized for their ecological and biodiversity significance.
- These nearby protected areas influence ecological connectivity and highlight the importance of careful planning to avoid indirect impacts on sensitive habitats.

5.2.2 Natural and Modified Habitats

The project area supports a combination of natural and human-modified habitats that together create a rich ecological landscape.

Natural Habitats:

- Mediterranean Salt Meadows (1410): Open areas dominated by salt-tolerant plants such as *Juncus maritimus*, *Tamarix dalmatica*, and *Halimione portulacoides*, important for invertebrates and foraging birds.
- Reedbeds (72A0): Dense stands of *Phragmites australis*, *Typha angustifolia*, and *Scirpus lacustris* along drainage channels and wetlands, providing shelter and breeding sites for waterbirds and amphibians.
- Coastal Halophilous Forests (2270): Pine forests planted for dune stabilization, dominated by *Pinus halepensis* and *Pinus pinea*, which reduce erosion and provide roosting and nesting habitat for birds.
- Salt Steppes (1510) and Salicornia Mudflats (1310): Specialized saline habitats supporting halophytic vegetation and serving as feeding grounds for waders and other coastal species.

Modified Habitats:

- Arable Land and Ruderal Vegetation: Areas cultivated for agriculture or colonized by invasive plant species, which still provide resources for wildlife and act as ecological corridors.
- Drainage Channels: Artificial watercourses that, despite being man-made, support aquatic and semi-aquatic species, enhancing local biodiversity.

5.2.3 Vegetation and Flora

The project area is highly diverse botanically, with 358 vascular plant species recorded, representing roughly 10% of Albania’s flora.

- Dominant Plant Families: Poaceae (grasses, 58 species), Asteraceae (daisies, 45 species), and Fabaceae (legumes, 25 species).
- Threatened Species: 111 species are listed in the IUCN Red List, most of which are considered Least Concern, while 6 are Data Deficient. According to the Albanian Red List, three species are Endangered and eight Vulnerable, including *Hypericum perforatum*, *Erica manipuliflora*, and *Pinus pinea*.
- Invasive Species: Sixteen alien species were identified, such as *Arundo donax*, *Dittrichia viscosa*, and *Erigeron canadensis*, which may compete with native species.

Priority Biodiversity Features (PBFs) have been identified based on EU Habitats Directive criteria and national conservation priorities, highlighting species and habitats that require particular attention during project planning and implementation.

5.2.4 Terrestrial Fauna

The area supports a diverse terrestrial fauna, with mammals, reptiles, amphibians, bats, and invertebrates recorded:

- **Mammals:** Twenty-seven species are potentially present, with eight confirmed during field surveys. Key species include the Golden Jackal (Canis aureus), Badger (Meles meles), Otter (Lutra lutra), and Red Fox (Vulpes vulpes). Several bat species, including the Horseshoe Bat (Rhinolophus hipposideros) and Myotis capaccinii, were also observed.
- **Reptiles and Amphibians:** Six amphibian and twenty-four reptile species inhabit the area. Notable species include Hermann's Tortoise (Testudo hermanni), European Pond Turtle (Emys orbicularis), and frogs such as Rana dalmatina and Hyla arborea. Many of these are protected under Annex II/IV of the EU Habitats Directive.
- **Invertebrates:** The site hosts a rich diversity of invertebrates, including species of conservation concern like the praying mantis (Mantis religiosa) and the butterfly Zerynthia polyxena..

5.2.5 Aquatic Ecology

The aquatic ecosystems within the Project Development Area (PDA) and its surrounding Area of Influence (AoI) comprise a complex network of coastal lagoons, drainage channels, and estuarine systems, forming a mosaic of habitats that are vital for both resident and migratory species. These habitats are highly productive and ecologically significant, supporting diverse flora and fauna and providing important ecosystem services to local communities.

Habitat Types and Hydrological Features

- Coastal Lagoons: Shallow, brackish lagoons such as Petriti Lagoon are separated from the sea by natural sandbanks and are influenced by tidal exchange, river inflows, and seasonal flooding. These lagoons support submerged vegetation, including *Ruppia maritima*, *Zostera noltii*, and *Chara* species, which create complex underwater habitats essential for fish and invertebrates. Lagoons serve as nurseries for juvenile fish and feeding areas for birds.
- Drainage Channels: Although human-made, these channels are ecologically valuable. They are often lined with dense reedbeds (*Phragmites australis*, *Typha angustifolia*) that provide breeding and shelter habitats for amphibians, reptiles, and birds. They also act as ecological corridors connecting different aquatic and terrestrial habitats.
- Estuarine Systems: The Seman River and its tributaries form dynamic estuarine zones where freshwater mixes with seawater, creating fluctuating salinity and sediment conditions. These environments support a wide range of aquatic life and contribute to nutrient cycling and sediment transport.

Fish Diversity

Over 120 fish species have been recorded in the area, reflecting its high biodiversity and importance for fisheries:

- Commercially Important Species: Include *Mugil cephalus*, *Liza ramada*, *Liza saliens*, *Chelon labrosus* (mullets), *Sparus aurata* (Gilthead seabream), *Dicentrarchus labrax* (European seabass), and *Anguilla anguilla* (European eel), the latter being a species of conservation concern.
- Resident Species: Include *Atherina boyeri* (sand smelt), *Aphanius fasciatus* (Mediterranean killifish), *Gobius bucchichi* (gudgeon), and *Syngnathus* species (pipefish).
- Migratory vs. Sedentary Groups: Migratory species such as Sparidae, Mugilidae, Moronidae, Soleidae, and Anguillidae rely on these habitats for spawning and feeding, while sedentary species like Gobidae and Atherinidae inhabit lagoons and channels year-round.

These aquatic systems are critical for reproduction, feeding, and shelter, making them essential corridors for maintaining fish populations and overall aquatic biodiversity.

Macroinvertebrates

Macroinvertebrates, particularly mollusks, are abundant and play a key ecological role:

- Common Species: *Rissoa ventricosa*, *Rissoa monodonta*, *Planorbis planorbis*, *Venerupis aurea*, and *Tapes decussatus*.
- Ecological Functions: They contribute to nutrient cycling, stabilize sediments, and form an important food source for fish, amphibians, and birds. Their presence indicates a healthy benthic ecosystem, although some areas show signs of nutrient enrichment and localized habitat stress.

Amphibians and Reptiles

Aquatic and semi-aquatic habitats support a variety of amphibians and reptiles that rely on water bodies for breeding, feeding, and hibernation:

- Amphibians: *Pelophylax shqipericus*, *Rana dalmatina*, *Hyla arborea*, *Bombina variegata*.
- Reptiles: *Emys orbicularis* (European pond turtle), *Mauremys rivulata* (Balkan terrapin), *Natrix natrix*, and *Natrix tessellata*.

These species depend on lagoons, drainage channels, ponds, and wetland margins for survival, highlighting the importance of preserving aquatic habitats in and around the project area.

Threats to Aquatic Biodiversity

The aquatic ecosystems face multiple pressures:

- Pollution: Untreated urban and industrial waste, agricultural runoff with pesticides and fertilizers, and nutrient enrichment causing eutrophication in lagoons.
- Habitat Degradation: Drainage works, land reclamation, sand extraction, shoreline erosion, and fragmentation of aquatic corridors.
- Invasive Species: Non-native fish such as *Pseudorasbora parva*, *Carassius gibelio*, and *Cyprinus carpio*, as well as invasive plants and mollusks, disrupt natural habitat structure.
- Climate Change: Sea-level rise alters salinity gradients and hydrological regimes, impacting fish breeding cycles and wetland dynamics.

Ecosystem Services

Aquatic habitats provide important ecosystem services, including:

- Provisioning Services: Fish, mollusks, and aquatic plants that support local fisheries.
- Regulating Services: Natural water purification, flood mitigation, and carbon sequestration.
- Cultural Services: Opportunities for recreational fishing, birdwatching, and the appreciation of scenic wetland landscapes.

5.2.6 Avifauna

The project area supports a variety of bird species typical of coastal lowlands, agricultural fields, and drainage areas. Field surveys conducted in September 2024 and January 2025 recorded 71 species, with additional species expected seasonally due to migration, bringing the total likely annual presence to around 170 species**.**

Birds use a range of habitats within and around the Project Development Area (PDA), including pine groves, shrublands, wetlands, drainage channels, and open agricultural fields for nesting, feeding, and shelter. Within the PDA, observed species are generally common regional birds, including passerines, raptors, and water-associated species. Breeding activity was confirmed for approximately 40 species, while migratory birds use the broader landscape as part of seasonal movements.

Some species of conservation interest occur in the surrounding landscape, particularly in coastal wetlands and protected areas located outside the PDA. These include birds listed as globally or nationally vulnerable, but no internationally designated sites, Important Bird Areas (IBAs), or Key Biodiversity Areas (KBAs) overlap the project footprint**.**

Overall, the area provides ecological functions such as feeding, nesting, and movement between habitats. Standard environmental management measures**,** including habitat protection and monitoring, will be implemented to ensure these functions are maintained during construction and operation.

5.3 Socio-Economic Baseline

The Blue 3 Photovoltaic Park is located in the Western Lowlands of Albania, between the Seman and Shkumbin River estuaries, near the Divjakë-Karavasta National Park. The area is characterized by low to moderate population density, scattered rural settlements, and a landscape dominated by agricultural lands, wetlands, and coastal pine forests. Socio-economic activities in the area are closely tied to natural resources, with local communities engaged in agriculture, fishing, and small-scale services.

Local Communities and Demographics

- Population: The surrounding villages, including Libofsha, Petrit, and nearby settlements, host small rural communities. The population shows a trend of aging due to youth migration to urban centers or abroad.
- Seasonal Variation: There is a modest increase in temporary residents during the agricultural season or summer tourism.
- Settlement Pattern: Houses are scattered, with clusters of small villages connected by local roads.

Livelihoods and Economic Activities

- Agriculture: The dominant livelihood, with crops including maize, legumes, sunflowers, and vegetables. Livestock includes sheep, goats, and cattle. Farmers face challenges such as soil degradation, irrigation needs, and market access.
- Fishing: Artisanal fishing occurs in drainage channels, lagoons, and coastal waters, targeting species such as mullets (*Mugilidae*), gilthead seabream (*Sparus aurata*), and European eel (*Anguilla anguilla*). Productivity has been affected by water quality and habitat changes.
- Tourism: Nature-based tourism exists near Divjakë-Karavasta National Park, including birdwatching and eco-tours, but infrastructure is limited and largely seasonal.
- Other Sectors: Small-scale trade, construction, and public services provide supplemental income. Informal employment is common.

Land Use and Ownership

- Land Use: Includes active and abandoned agricultural lands, pine forests, wetlands and salt marshes, as well as small urban or peri-urban areas.
- Ownership: A mix of private, communal, and state-owned land. Land tenure can be unclear due to historical reforms and incomplete cadastral records.

Infrastructure and Services

- Transport: Local roads are functional but often unpaved or in moderate condition.
- Utilities: Electricity is widely available, though occasional outages occur. Water is sourced from wells and irrigation channels.
- Healthcare and Education: Basic health services and primary schools are present nearby, with secondary services requiring travel to larger towns.

Cultural and Social Aspects

- Traditions: Local communities maintain traditional farming, fishing practices, and seasonal festivals.
- Community Engagement: Strong sense of local identity and attachment to land.
- Social Vulnerability: Residents have limited access to some services and depend on natural resources for income.

Ecosystem Services and Human Wellbeing

The local population benefits from ecosystems that provide:

- Provisioning Services: Food, freshwater, and natural materials.
- Regulating Services: Flood control via wetlands, climate regulation through vegetation, and pollination.
- Cultural Services: Recreational, aesthetic, and heritage value associated with natural landscapes.

Key Challenges and Risks

- Environmental pressures include pollution, invasive species, and habitat loss.
- Climate-related risks include sea-level rise, flooding, droughts, and extreme weather events.
- Economic challenges stem from dependence on agriculture and natural resources.
- Social equity issues include uneven access to services and opportunities.

The socio-economic setting is typical of Albania's Western Lowlands, with communities largely dependent on agriculture and natural resources. The PDA is located in areas of low population density, and the project is designed to co-exist with existing land uses, providing temporary employment during construction and

operational benefits, while avoiding direct impacts on settlements, social infrastructure, or critical community resources..

5.4 Protected area

The Blue 3 Photovoltaic Park is located in a landscape where several protected and ecologically important areas exist in the broader surroundings. While the Project Development Area (PDA) does not overlap any internationally designated sites, these areas contribute to the overall ecological context of the region.

Divjakë–Karavasta National Park

- Distance from PDA: ~1.3 km northwest
- Designation: National Park, Ramsar Site, Important Bird Area (IBA), Key Biodiversity Area (KBA), Emerald Network Candidate Site
- Size: 22,230 ha
- Habitats: Forests (Pinus halepensis, P. pinea), lagoons and wetlands, agricultural lands, coastal dunes
- Ecological Features: The park hosts over 269 bird species, with around 36,000 waterbirds wintering annually and 12,000 breeding pairs. It also supports a variety of other wildlife and habitats typical of Albania's lowland coastal zone.

Vjosa–Nartë–Pishë Poro Protected Landscape

- Distance from PDA: ~9.2 km southwest
- Designation: Protected Landscape, IBA, KBA, Emerald Network Candidate Site
- Habitats: Coastal salt marshes, pine forests, lagoons (e.g., Narta Lagoon), agricultural lands
- Ecological Features: Over 248 bird species have been recorded here, including some globally and nationally listed species. These areas provide important feeding and resting sites for migratory birds.

Natural Monuments

- "Kurora e Semanit" (Crown of the Seman River): ~7 km northeast, IUCN Category III, ~44 ha, riparian forest supporting typical local biodiversity including amphibians, reptiles, birds, and mammals.
- Seman Dunes: Located south of the PDA, representing a coastal dune system with ecological and geological significance.

Ramsar Site

- Karavasta–Pisha e Divjakës Lagoon: Designated as a Wetland of International Importance (Ramsar Site No. 781), covering ~20,000 ha. It provides habitat for migratory and wintering waterbirds, as well as various wetland species.

Emerald Network Sites

- Divjakë–Karavasta National Park and Vjosa–Nartë–Pishë Poro are included as Areas of Special Conservation Interest under the Bern Convention, forming part of the Natura 2000 precursor network. These sites are outside the project footprint and contribute to regional ecological connectivity.

Protected Habitats and Species Context

Within the PDA itself, priority habitats and species of conservation concern are limited to typical coastal lowland ecosystems.

- Habitats (EU Habitats Directive Annex I):
  - 2270: Wooded dunes with Pinus pinea and/or Pinus halepensis
  - 1410: Mediterranean salt meadows
  - 1150: Coastal lagoons
  - 72A0: Reedbeds along drainage channels
- Species of Conservation Concern (recorded nearby or regionally):
  - Birds: Turtle Dove (*Streptopelia turtur*), Red-footed Falcon (*Falco vespertinus*), Dalmatian Pelican (*Pelecanus crispus*)
  - Reptiles: European Pond Turtle (*Emys orbicularis*), Hermann's Tortoise (*Testudo hermanni*)
  - Mammals: Eurasian Otter (*Lutra lutra*), Golden Jackal (*Canis aureus*)

Summary: The PDA is located in a region with ecologically valuable sites nearby, but it does not intersect any internationally protected areas or sensitive habitats. The project design ensures that existing ecological features within the PDA are maintained, and standard environmental management measures will minimize potential impacts.

5.5 Stakeholder Engagement

Stakeholder engagement is a core part of the Blue 3 project, ensuring that local knowledge and perspectives are incorporated into project planning, construction, and operation.

Stakeholder Identification

Key stakeholders include:

- Local communities and households near the project area
- Municipal authorities and local governance representatives
- Regional environmental and energy agencies
- Landowners and agricultural users
- Local NGOs and civil society organizations
- Utility companies and grid operators
- Contractors, suppliers, and service providers

This identification ensures that all parties with potential environmental, social, or economic interests are considered early in project planning.

Consultations Undertaken

Consultations have been carried out following national regulations and EBRD Performance Requirement (PR 10), including:

- Meetings with municipal authorities and community representatives
- Discussions with landowners regarding land access and compensation
- Engagement with environmental authorities on ecological impacts and mitigation measures
- Public disclosure of key documents, such as the Stakeholder Engagement Plan (SEP) and ESIA

These activities have built trust, transparency, and understanding between the project team and local communities.

Key Issues Raised

Stakeholders highlighted concerns that have been addressed through project design and mitigation measures:

- Fair and timely compensation for affected land and tenants
- Environmental management, including biodiversity, water use, and noise control
- Local employment opportunities during construction and operation
- Access, traffic, and infrastructure management
- Community development initiatives supporting local services and social infrastructure

Ongoing and Future Engagement

Engagement will continue throughout the project lifecycle through:

- Regular updates and reporting to authorities and community representatives
- Periodic stakeholder meetings to share project progress and monitoring results
- Consultation during seasonal surveys and ecosystem services assessments
- A dedicated Community Liaison Officer (CLO) to maintain communication and respond to queries

Grievance Mechanism

A transparent and accessible grievance mechanism has been established to allow stakeholders to raise concerns related to environmental, social, health, or safety issues. Key features include:

- Multiple submission channels: email, phone, postal address, on-site boxes, and in-person at the CLO office
- Timely response: acknowledgment within 5 working days and resolution within 30 working days
- Confidentiality and non-retaliation, including anonymous submissions
- Monitoring and reporting of grievances in a central database, with periodic summaries shared with stakeholders and the EBRD
- Escalation to the EBRD Independent Project Accountability Mechanism (IPAM) if unresolved

The Community Liaison Officer manages the mechanism, ensuring effective follow-up, corrective actions, and continuous improvement of environmental and social performance.

6 Main Environmental and Social impacts and associated mitigation measures

The construction phase of the Blue 3 Solar Power Project, including the photovoltaic (PV) plant and underground transmission line (UGTL), is the period of greatest activity and potential environmental and social interaction. The expected impacts are temporary, localized, and manageable through the application of standard mitigation measures and the project's Environmental and Social Management Plan (ESMP). The key impacts for the construction phase and associated mitigation measures are presented in the table below.

6.1 Construction phase

Component	Impact Overview	Key Mitigation Measures	Impact Significance (Post-Mitigation)
Air	Emissions and dust from vehicles, machinery, generators, and construction activities	- Dust suppression via water spraying and limiting open excavation areas - Limit vehicle speed on unpaved roads - Maintain machinery to reduce emissions - Construction scheduled to avoid sensitive receptors when possible - Cover materials and transport vehicles	Minor – PV plant and UGTL
Soil	Disturbance, contamination, and spoil from excavation, backfilling, and machinery	- Minimize topsoil removal and store for later restoration - Proper storage and handling of fuels, oils, and chemicals - Designated soil stockpile areas with erosion control - Use excavated materials for landscaping and site restoration	Minor – PV plant and UGTL
Hydrology	Contamination of surface and groundwater; erosion and sedimentation; modification of irrigation/drainage patterns	- Maintain natural drainage patterns - Erosion and sediment control measures - Avoid stockpiling/excavations during wet periods• Surface water management infrastructure (culverts, drains) - Route adjustments for UGTL to avoid sensitive watercourses	Minor – PV plant and UGTL
Landscape and Visual	Temporary visual intrusion from machinery, materials, and earthworks	- Minimize vegetation clearance - Protect existing vegetation with fencing	Minor – PV plant and UGTL

		- Progressive site restoration and landscaping - Maintain good site housekeeping and designated storage areas - Community consultation on construction activities	
Noise and Vibration	Disturbance from machinery, vehicles, pile driving, and construction activities	- Restrict noisy works to daytime hours - Use low-noise equipment and acoustic barriers if needed - Regular maintenance of machinery - OHS measures for worker protection	Minor – PV plant and UGTL
Traffic	Increased construction vehicle movements affecting local roads and communities	- Construction Traffic Management Plan (CTMP) - Notification to communities and authorities - Install signage and speed limits - Phased work to retain local access - Driver training and road safety measures	Minor – PV plant and UGTL
Waste	Generation of general, sanitary, and hazardous waste	- Waste segregation, storage, and disposal through licensed operators - Reuse and recycling of materials - Housekeeping to prevent windblown litter - Spill prevention and hazardous waste management	Minor – PV plant and UGTL
Habitats and Protected Areas	Clearance of vegetation, drainage maintenance, and excavation	- Pre-construction ecological surveys - UGTL route adaptation to avoid sensitive areas - Progressive vegetation clearance with fauna relocation - Restoration with native species - Erosion/sediment control and no-go zones	Minor – PV plant and UGTL
Vegetation and Flora	Removal of vegetation; impact on rare species; risk of invasive species	- Pre-construction surveys and demarcation of work areas - Minimize vegetation clearance - Rehabilitation with native plants post-construction - Alien invasive species control protocol implemented	Minor – PV plant and UGTL
Terrestrial Fauna and Avifauna	Disturbance, injury, or mortality due to construction; habitat fragmentation	- Pre-construction surveys and fauna checks in trenches	Minor – PV plant and UGTL

		- Restrict work outside daylight and breeding seasons - Progressive clearance and ecological supervision - Wildlife monitoring and injured wildlife protocols - Vehicle speed limits to reduce fauna collisions	
Land Acquisition, Land Use and Livelihood	Temporary or permanent loss of agricultural land; potential income loss	- Land Acquisition and Livelihood Restoration Plan (LALRP) Compensation in line with EBRD PR5 and national legislation - Minimize footprint on productive land - Maintain access for herding and agricultural activities	Minor – PV plant and UGTL
Employment	Opportunities for local workforce	- Recruitment and Labour Management Plan prioritizing local hires - Equal opportunities for women and vulnerable groups - Training programs and capacity building - OHS management for workers	Moderate Positive – PV plant and UGTL
Occupational Health & Safety (OHS)	Risks to workers and community from construction activities, dust, noise, and traffic	- OHS Management System and ISO 45001 compliance - PPE and training for workers - Emergency Response Plan and on-site medical facilities - Grievance mechanism for GBVH and workplace incidents - Security measures to prevent unauthorized access	Minor – PV plant and UGTL
Cultural Heritage	Potential discovery of unknown archaeological sites	- Pre-construction survey and Chance Finds Procedure - Stop work and notify authorities if objects found - Compliance with national law and EBRD PR8	Negligible – PV plant and UGTL

6.2 Operation phase

Solar PV projects are passive in nature and do not generate significant wastes, emissions to air, pollution to water or noise and are generally considered to have a limited impact on the environment and surrounding communities. Below is a summary of the identified impacts and associated mitigation measures to minimise any residual impact.

Component	Impact Overview	Key Mitigation Measures	Impact Significance (Post-Mitigation)	Component
Land Acquisition, Land Use and Livelihood	Permanent loss of agricultural land for the PV plant area and UGTL route.	Impacts to livelihoods – potential loss of income.	- The LALRP implemented and all compensation paid, no further mitigation measures can be applied; ensure full application of the LALRP, in line with Albanian legislation and EBRD requirements. - There might be impacts on structures, crops etc the ESMP and restoration plans will need to cover these impacts. - When selecting the siting of the UGTL right of way, avoid to the extent possible locating it on farmed land or land with the presence of fruit trees or other assets or drainage channel ALARP - Ensure that land users and owners are fully clear on the meaning of the easement and fully clear of the restrictions applied throughout the easement area; - Ensure all grievances by local community and other stakeholders are closed out. - SEP to be used to disseminate project information where necessary to land users. -	***Negligible – PV plant and UGTL***
Landscape and Visual	Presence of PV panels and transmission line	Long-term changes to the landscape. Major new visual item in the scenery for small number of local residents.	- Perform proper housekeeping and cleaning at end of construction phase; materials, wastes and equipment to be removed from working areas and disposed or transferred in appropriate places; - Rehabilitate and restore disturbed areas incrementally and as soon as possible, not necessarily waiting until completion of the construction phase. - Revegetation of the affected areas by the project will have to be consulted with an ecologist to avoid planting of any alien flora species or non-native species.	Minor – PV plant and UGTL

		Glare (and glint) caused by sunlight reflected off the PV panel arrays.	- Use consistent colour treatments: wherever possible, use uniform (and well-chosen) colour treatments on all structures and surfaces, which blends well with the surrounding landscape. - Minimize vegetation clearing outside of the arrays: vegetation removal causes strong colour and texture contrasts by exposing light-coloured soils that lack the visual texture that vegetation provides. - Carefully choose the exposed metal support structures or reflective surfaces in order to not reflect the sun. These elements might be coated or treated or replaced by materials that are less reflective. - Plant vegetation outside the plant in strategic points that might be visible from the roads crossing the area so the PV remains not visible passing by. - All mitigation and management measures for the restoration process of project-affected areas, including associated costs, will be included in the Biodiversity and Restoration Management Plan (BMP). -	
Physical receptors (air quality, soil, hydrology)	Occasional visits to the PV plant to undertake inspection and maintenance activities	Dust generation. Vehicle emissions. Fuel / oil spills from vehicles or machinery.	- Maintenance vehicles will be required to follow designed access routes. - Development of the Project ESMS for the operation phase, including provision for good working practices in relation to maintenance of vehicles and machinery, use, storage and handling of chemicals. - reduce the water demand of the project by using monthly dry-cleaning techniques, with wet cleaning (using water) only on a quarterly basis. - Installation and use of rainwater harvesting and steam cleaning equipment and - prohibiting extraction of groundwater or surface water for operation activities of the project. - Ensure potential changes in climatic conditions are considered when setting the design conditions in terms of maximum and minimum temperatures, wind loading, and rain events, with drainage system and foundations of the buildings based on at least 1 in 100-year rainfall / flood events. - Measures to reduce of SF6 emissions: - Alternatives to SF6, with a low global warming potential;	***Negligible – PV plant***

			- Reduce filling quantity and minimized leakage rate through improvements in technology and management; - Increase recycling ratio prompted by stronger policy incentives; and - Increased ratio of substitution of SF6. -	
Climate Change and resilience	N/A	Potential impact on equipment and personnel due to increase in extreme weather event.	- Ensure potential changes in climatic conditions are considered when setting the design conditions in terms of maximum and minimum temperatures, wind loading, and rain events, with drainage system and foundations of the buildings based on at least 1 in 100-year rainfall / flood events. - Measures to reduce of SF6 emissions: - Alternatives to SF6, with a low global warming potential; - Reduce filling quantity and minimized leakage rate through improvements in technology and management; - Increase recycling ratio prompted by stronger policy incentives; and - Increased ratio of substitution of SF6. -	***Negligible – PV plant***
Biological receptors (including avifauna)	Occasional visits to the PV plant and UGTL to undertake inspection and maintenance activities.	Impact of operation vehicles on local flora and fauna. Potential damage to flora and fauna from chemicals used during maintenance.	- Potential damage to local fauna will be managed by ensuring that only designated access tracks are used for maintenance traffic and the appropriate handling and use of paints and chemicals. These will be managed through the operational ESMP, which will also provide for worker awareness and training sessions in relation to protection of local fauna, and a code of conduct that forbids poaching or deliberate killing of animals listed in baseline studies. Specific mitigation measures for the protection of biodiversity for operation period should include the following measures: - The Project should develop the BMP to cover the operational phase of the Project (see Construction Phase mitigation measures above), and includes the identification and implementation of biodiversity enhancement measures and provide the scope for ongoing biodiversity monitoring. - Ensure a gap (around 15-20 cm) is provided under the fence to ensure that small faunal species can continue to move freely through the site.	***Negligible – PV plant and UGTL***

			- The installation of PV plant modules will lead to keeping similar land conditions, barren land, which as a consequence may lead to soil erosion during rainy periods and/or in highly windy weather. So, to avoid such phenomenon it is recommended the cultivation of the specific plant species which provide good cooling effect by extracting heat from PV panels and that can be use in the barren land. Cultivating specific plants of certain economics benefit can be easily achieved as well (e.g., medicinal plants). - Allow vegetation cover across the site, with native and appropriate plant species, such as low growing species that do not shade panels. - Use visual bird diversion techniques similar to those applied in airports for bird diversion including large scare-eye balloons and Mylar flash tape. - The use of aluminium-coloured frames for the PV panels was previously proposed as a mitigation measure to reduce impact on birds. - Ban the use of pesticides and herbicides for management of vegetation on site. Consider allowing local grazers to periodically use the site for grazing their sheep in order to manage vegetation. - Vegetation control by using mechanical methods along with the use of organic fertilisers	
Waste	Occasional maintenance visits.	Generation of electrical and packaging waste	The developer will prepare and maintain a Waste Management Plan (WMP) in compliance with Albanian legislation that will include arrangements for the disposal of hazardous and non-hazardous waste through licensed waste disposal subcontractors/ companies. The plan will also include measures to ensure: a. Food/organic waste and recyclables such as. paper, plastic, scrap metal waste, etc. must be properly segregated and stored in designated waste bins/containers and periodically deposited in approved disposal areas or either sold to licensed recycling companies. b. Ensure electrical waste (consumables, spare parts and obsolete equipment) and broken solar panels are properly	***Negligible – PV plant***

			packed and sent back to manufacturer and/or reused in other forms and locations; c. Generated waste quantities - must be recorded in a separate/dedicated register according to the type of waste and the quantities generated. During the waste transfer process, a waste transfer format (Waste Transfer Format) shall be filled out to determine the respective quantities according to the type of waste leaving the site and the name of the company/entity that will handle these wastes. These data shall be regularly kept by the Developer during the operation activity, and presented/reported to the government authorities if required; d. Conduct continuous training and education awareness of all employees of the project in regard to waste management practices in order to avoid, reduce the risks of waste generation and potential impact during the operation phase.	
Employment	Employment opportunities for operation/ maintenance works.	Increased employment opportunities - Positive impact to communities	- Development and Implementation of Local Employment and Workforce Management Plan (PLMPP): The Project Developer (IPN) shall develop and implement a Local Employment and Workforce Management Plan (PLMPP) and Human Resources policies that promote the employment of local workforce and deliver positive socio-economic benefits to the host communities. The PLMPP shall include: - Advertisement and dissemination of job opportunities at the local level. - Encouragement and facilitation of local workforce applications. - Prioritization of local workforce recruitment where reasonable and practical. - Training programs for skill development. - Monitoring of locally recruited workforce performance and compliance. - Occupational Health and Safety (OHS) Management: Implement a construction-phase OHS management system to safeguard workers' health and ensure proper management of occupational hazards and risks. - Inclusive Employment Practices:	***Minor to moderate positive – PV plant***

			- Prioritize employment of vulnerable groups and women during recruitment. - Collaborate with State Employment Offices and local authorities (municipalities and administrative units) to enhance local employment opportunities. - Establish transparent and fair recruitment procedures in compliance with: - Albanian Labour Code requirements - Ratified ILO conventions - EBRD Performance Requirement 2 (Workers and Working Conditions) - IFC Performance Standard 2 (Labour and Working Conditions) - Child Labour and Minimum Age Compliance: Internal policies of SPV Blue 3 strictly prohibit the employment of workers under 18 years of age. - Provide workers with a safe and healthy work environment; - Implement a grievance mechanism open to employee and non-employee workers. Ensure that all workers directly and indirectly employed are informed on how to submit grievances. Ensure that the grievance mechanism is managed in line with indications of the SEP. - The EPC Contractor and subcontractors will be contractually required to maximise use of local workforce in the Project; - In order to increase the project's Local Contents, the Company will aim to procure goods, services and materials from local businesses to the extent possible; - A strategy for the procurement of goods, services and materials will be prepared, including a demand-and- supply analysis, in order to identify to what extent local sources can contribute to procurement needs and to implement tailored measures to support local businesses; - The Company will provide information on procurement, tendering, and contracting processes with a transparent and clear approach, to ensure that equal access to opportunities is guaranteed; - Information on procurement opportunities will be given to local businesses, through tailored communication with Local authorities and other appropriate parties;	

			- Local companies identified as able to provide goods, materials and services in the during the strategical analysis will be contacted directly providing information on tendering opportunities; - Local authorities and local communities will be informed and consulted on impacts due to project activities and planned mitigation measures during the pre-construction meetings and throughout the Project life cycle as planned in the Stakeholder Engagement Plan. - Provide training opportunities for local workforce to be employed during the operational phase; - Provide equal employment opportunities for men and women; - Controling and monitoring activities regarding Contractor constructors' actions, that have overall responsibility for employment, social, health and safety, and cultural heritage aspects of the Project.	
Health and safety	Operation and maintenance of the PV; Operation and maintenance of the UGTL; Generation of electric and magnetic fields around UGTL route cables.	Potential impact on health of local residents: Potential for electrocution; Electromagnetic Fields (EMF) Lightning strike and fire; and Issues associated unauthorised access and vandalism	- Develop and implement a comprehensive Occupational Health and Safety (OHS) Management Plan covering UGTL operation and maintenance, in accordance with EBRD, World Bank, and UNPN standards. This plan will include a dedicated EMF safety program for all project workers. - Prevent electrocution through: - Use of warning signs, barriers, gates, locked doors, and protective fencing around UGTL and substations. - Grounding of metallic objects near transmission lines to prevent accidental electric shocks. - Public awareness campaigns and education programs to inform local residents of potential hazards. - Install automatic fire detection and shutdown systems at substations to ensure rapid response in case of fire or electrical faults. - In the event of storms or other damage (e.g., downed cables, fires, electrocution hazards), notify relevant utility companies immediately and secure damaged areas to prevent further harm (e.g., temporary covers to prevent water ingress). - Conduct regular monitoring and inspections by qualified professionals to detect: - Illegal connections or tampering	***Negligible – PV Plant and minor forUGTL***

			- Non-compliance by landowners or land users - Maintain comprehensive records of occupational accidents, incidents, and dangerous occurrences as part of ongoing OHS monitoring. -	
Electromagnetic Field (EMF)	Generation of electromagnetic field radiation along the Underground Transmission Line (UGTL) route	Possible impact on the health of local residents	- Providing information to local farm workers working on land above the UGTL about EMF, along with recommendations to reduce possible exposure and on safe work practices. - The EMF safety program for Project personnel will be managed through the development of a Health and Safety Management Plan (HSMP), in accordance with EBRD, IFC, WB standards.	

7 Environmental and Social Management and Monitoring Framework

The Environmental and Social Management Plan (ESMP) establishes the overarching framework for managing, mitigating, and monitoring all environmental and social (E&S) aspects of the Blue 3 Photovoltaic Park Project, ensuring full compliance with Albanian legislation, EBRD Performance Requirements (PR 1–PR 10), and international best practices.

The ESMP serves as a practical and operational tool for the Project Developers – Blessed Investment sh.p.k. and Matrix Constructions sh.p.k. – and their EPC Contractor, enabling systematic management of E&S risks and opportunities throughout the construction and operation phases. It translates the mitigation measures identified in the ESIA into actionable commitments, defining responsibilities, resources, and performance indicators, supported by a continuous cycle of monitoring, auditing, and reporting to the relevant authorities and the EBRD.

The ESMP is a living document, subject to periodic updates based on monitoring results, stakeholder engagement outcomes, and lessons learned from implementation.

Key Objectives of the ESMP

- Ensure full compliance with legal, regulatory, and lender requirements;
- Integrate environmental and social considerations into project planning, design, construction, and operation;
- Prevent, minimize, or offset adverse impacts and enhance project benefits;
- Promote transparency, accountability, and stakeholder engagement;
- Facilitate continuous improvement through measurable performance indicators.

The ESMP clearly defines the roles and responsibilities of all project participants, including the Developer, EPC Contractor, subcontractors, and supervision consultants. Dedicated E&S professionals—such as the HSES Manager, Health & Safety Coordinator, Community Liaison Officer, and Biodiversity Specialist—will be responsible for oversight, compliance monitoring, and stakeholder interface.

Targeted training and awareness programs will ensure that all workers and contractors understand their environmental, social, health, and safety obligations, including procedures for emergency preparedness, waste management, biodiversity protection, and community safety.

Specific Management and Monitoring Plans

To operationalize the ESMP, a comprehensive set of sub-management plans and procedures will be prepared and implemented, covering all key environmental, social, health, and safety aspects of the Project. These include, but are not limited to:

1. Core Management Framework

- Construction Environmental and Social Management Plan (CESMP) – overarching plan integrating all E&S measures for construction;
- Operation Environmental Management Plan (OEMP) – defines monitoring and maintenance during operation;
- Monitoring and Reporting Plan – specifies parameters, frequency, and responsibilities for E&S performance monitoring.

2. Environmental Management Plans

- Waste Management Plan (WMP) – segregation, storage, transport, and disposal of hazardous and non-hazardous waste;
- Traffic and Transport Management Plan (TTMP) – management of construction traffic, vehicle movement, and access control;
- Erosion and Sediment Control Plan (ESCP) – prevention of soil loss, dust, and sediment runoff;
- Stormwater and Drainage Management Plan – control of runoff and prevention of flooding or contamination;
- Air Quality and Dust Management Plan – suppression measures and monitoring near sensitive receptors;
- Noise and Vibration Management Plan – mitigation and monitoring of noise impacts during construction;
- Pollution Prevention and Spill Response Plan – procedures for managing spills of fuel, oil, or chemicals;
- Reinstatement and Site Restoration Plan – rehabilitation and revegetation of disturbed areas post-construction.

3. Biodiversity and Natural Resources Plans

- Biodiversity Management Plan (BMP) – protection of flora, fauna, and habitats during all project stages;
- Biodiversity Action Plan (BAP) – if triggered by ESIA findings, targeting species or habitat restoration and offset measures.

4. Social and Community Plans

- Stakeholder Engagement Plan (SEP) – framework for information disclosure, consultation, and grievance handling;
- Grievance Redress Mechanism (GRM) – transparent system for addressing community and worker complaints;
- Community Health, Safety, and Security Plan (CHSSP) – ensures safety and wellbeing of local residents and project-adjacent communities;
- Land Acquisition and Livelihood Restoration Plan (LALRP) – if applicable, addresses economic displacement and compensation measures;
- Labour Management Plan (LMP) – covers recruitment, working conditions, worker rights, and code of conduct.

5. Cultural Heritage and Emergency Preparedness

- Cultural Heritage Management Plan (CHMP) – protection of tangible and intangible cultural heritage;
- Chance Finds Procedure (CFP) – guidance for managing unexpected archaeological discoveries;
- Emergency Preparedness and Response Plan (EPRP) – outlines response actions for fire, accidents, spills, or natural hazards.

6. Occupational Health and Safety

- Occupational Health and Safety Management Plan (OHSMP) – framework for managing workplace safety, PPE use, and risk controls;

The EPC Contractor shall continuously monitor and keep records of all construction activities occurring along the project and prepare regular reports on the performance of HSES components. The ESMS that will be developed for the project will define the monitoring and reporting requirements, but as a minimum it shall cover:

- Daily walkovers;
- Weekly inspections;
- Monthly internal audits

8 Approach for resettlement and restoration of livelihoods

8.1 Introduction

The Blue 3 Photovoltaic Park Project does not require a resettlement plan, as there are no residents, local farmers, or livelihoods affected by the project. While the ESIA references the Land Acquisition and Livelihood Restoration Plan (LALRP) framework in line with EBRD Performance Requirement 5 (PR5) and national legislation, this is strictly precautionary.

The LALRP framework ensures that, in the unlikely event of unforeseen impacts on land or livelihoods, appropriate mitigation measures such as compensation, livelihood support, stakeholder consultation, and land reinstatement would be applied. In practice, no resettlement or economic displacement is expected, and the project will proceed without affecting local communities or land use.

Conclusion:
The ESIA confirms that potential social impacts have been considered and that the LALRP framework is integrated into the project's mitigation strategy, even though no resettlement or livelihood restoration actions are required for Blue 3.

9 Grievance mechanism

9.1 Introduction to the mechanism

The Blue 3 Photovoltaic Park Project has established a grievance mechanism to ensure that all stakeholders, including community members, workers, and land users, can raise concerns, complaints, or provide feedback in a transparent, accessible, and timely manner. The mechanism is designed to promote trust, accountability, and responsive project management, helping to address issues before they escalate and ensuring compliance with the Stakeholder Engagement Plan (SEP) and the Land Acquisition and Livelihood Restoration Plan (LALRP) framework.

9.2 Grievance Processing

Stakeholders can submit grievances through multiple channels, including:

- Community Liaison Officers (CLOs)
- Local municipal offices
- Project site offices
- Email or phone (contact details provided in public notices)

The grievance mechanism allows for anonymous submissions, with confidentiality maintained at all stages. All grievances are acknowledged within 7 days and addressed as quickly as possible, typically within 30 days. Each complaint is recorded, tracked, and monitored through a dedicated system to ensure effective follow-up.

If a stakeholder is not satisfied with the resolution, an appeal process is available. Information on the grievance mechanism will be actively communicated to stakeholders through consultations, public notices, and engagement activities, ensuring that all affected parties are aware of how to raise concerns.

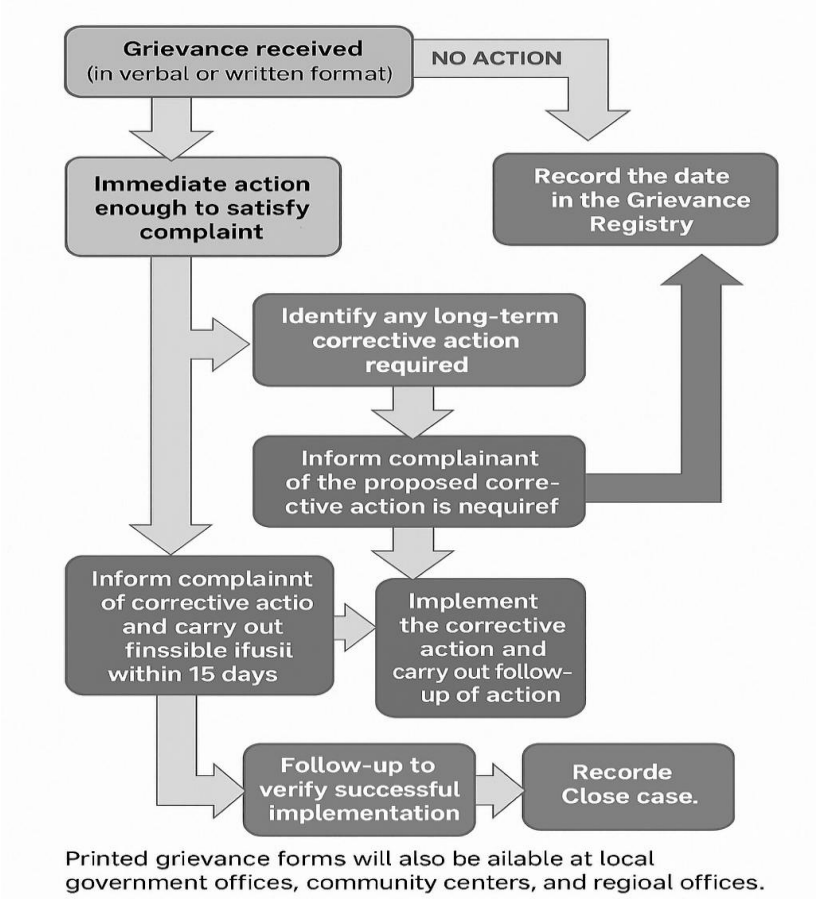

Figure 7: Grievance Processing Workflow

9.3 Grievances Submission

The Blue 3 Photovoltaic Park Project has established a transparent and accessible grievance mechanism to allow stakeholders to raise concerns, complaints, or feedback related to the project. A Public (Third-Party) Grievance Form will be used to record and manage grievances. This form will be available in both hard copy at local administration offices, including municipalities and regional offices, and in electronic format on the project website.

Stakeholders and affected persons may submit grievances at any time and at no cost through multiple channels, including:

- Electronic submission: via the grievance form available on the project website.
- Public meetings: submitting written or verbal grievances directly during consultations.
- Direct delivery or mail: submitting a written grievance to the Local Management Team or the Community Liaison Officer (CLO).
- Phone or email: contacting the CLO via the dedicated phone number or email.
- On-site submission: placing grievances in complaint boxes installed at all entry points to the SPV Blue 3 project site.

All grievances will be reviewed promptly, and responses will be provided in a fair, transparent, and timely manner. This process ensures that stakeholder concerns are addressed in accordance with the project's Environmental and Social Management Plan (ESMP) and international best practices.

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