# Environmental and Social Scoping Report

# SPITALLA UP TO 100 MW SOLAR PV PROJECT, ALBANIA

Revised November / 2022

Tirana, Albania

# REPORT SUMMARY

| | |
|---|---|
| PROJECT TITLE | SPITALLA 100 MW SOLAR PV PROJECT, ALBANIA Spitalla Solar sh.p.k. established by Voltalia Ltd. |
| DOCUMENT TITLE | Environmental and Social Scoping Report |

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# ACRONYMS

| | |
|---|---|
| AC | Alternating Current |
| ACEG | Albanian Center for environmental Governance |
| AEWA | African-Eurasian Migratory Water Birds Agreement |
| AoI | Area of Influence |
| AOS | Albanian Ornithological Society |
| AU | Administrative Unit |
| BID | Background Information Document |
| BP | before period |
| BTEX | benzene, toluene, ethylbenzene and xylene |
| CBD | Convention on Biological Diversity |
| CCTV | Closed-circuit television |
| CH | Cultural Heritage |
| CIA | Central Intelligence Agency |
| CITES | Convention on International Trade in Endangered Species of Wild Fauna and Flora |
| CO | Carbon Monoxide |
| DC | Direct Current |
| DCM | Decision of the Council of Ministers |
| DCM | Decisions of the Council of Ministers |
| E | East |
| EBRD | European Bank for Reconstruction and Development |
| EC | European Commission |
| EEC | European Economic Community |
| EIA | Environmental Impact Assessment |
| EIR | Environmental Interaction Report |
| EMF | Electric and Magnetic Fields |
| EMMP | Environmental Management and Monitoring Plan |
| EPC | Engineering, Procurement and Construction |
| ESF | Environmental and Social Framework |
| ESIA | Environmental and Social Impact Assessment |
| EUNIS | EU Habitats Directive Annex 1 |
| EUROCODE | Series of 10 European Standards, EN 1990 - EN 1999 |
| FDI | Foreign Direct Investment |
| FGD | Focus Group Discussions |
| GDP | Gross domestic product |
| GHG | greenhouse gas |
| GPS | Global Positioning System |
| GW | Giga Wat |
| HC | Hydrocarbons |
| HCV | High Conservation Value |
| HH | House holders |
| HKL | grey-brown meadow soils |
| HSE | Health, Safety and Environmental |
| HSE | Health, Safety and Environment |
| HV | High Voltage |

| | |
|---|---|
| I&APs | Interested and Affected Parties |
| IBA | Important Bird Areas |
| ICE shpk | ILLYRIAN CONSULTING ENGINEERS |
| ICM | Cultural heritage monuments Institute |
| IEC | Independent Environmental Consultants |
| IFC | International Finance Corporation |
| IGJEUM/ IGEWE | Institute of Geosciences, Energy, Water and Environment |
| IKTK | Ministry of Culture and National Institute of Cultural Heritage |
| ILO | International Labour Organization |
| INSTAT | National Institute of Statistics |
| IPP | independent power plants |
| ISO | International Organization for Standardization |
| IUCN | International Union for Conservation of Nature |
| KB | Key Biodiversity Areas |
| KII | Key Informant Interviews |
| LARF | Land Acquisition and Resettlement Framework |
| LHK | grey-brown meadow soils |
| LV | Low Voltage |
| MARD | Ministry of Agriculture and Rural Development |
| MEI | Ministry of Infrastructure and Energy |
| MTE | Ministry of Tourism and Environment |
| MV | Medium Voltage |
| MW | Mega Wat |
| N | Nord |
| NAPA | National Agency for the Protected Areas |
| NDC | National Targeted Target Contribution |
| NE | Nord-East |
| NEA | National Environment Agency |
| NICH | National Institute of Cultural Heritage in Albania |
| NICM | National Institute of Cultural Monuments |
| $NO_2$ | Nitrogen dioxide |
| NSDI/ ASIG | National Spatial Data Infrastructure |
| NTPA | National Territorial Planning Agency |
| NTPA | National Territorial Planning Agency |
| NTS | Non-Technical Summary |
| NW | Nord-West |
| O&M | Operation and Maintenance |
| $O_3$ | Ozone |
| OHL | Overhead Transmission Line |
| OHSAS | Occupational Health and Safety Assessment Series |
| OST | Transmission Line Operator |
| PA | Project Area |
| PBF | Priority Biodiversity Features |
| PDA | Project development area |
| PM | Particular Matter |
| PPNEA | Protection and Preservation of Natural Environment in Albania |

| | |
|---|---|
| PR | Performance Requirements |
| PRTS | Porto Romano Transmission Substation |
| PS | Performance Standard |
| PV | Photovoltaic |
| RAP | Resettlement Action Plan |
| RAPA | Regional Agency for the Protected Areas |
| RAPA | Regional Administrate of Protected Areas |
| RDCH | Regional Directory of Cultural Heritage |
| RES | Renewable Energy Sources |
| S | Sud |
| SCADA | Supervisory Control and Data Acquisition |
| SE | Sud-East |
| SEA | Strategic Environmental Assessment |
| SEP | Stakeholder Engagement Plan |
| SGS | SGS Automotive Albania |
| $SO_2$ | Sulphur dioxide |
| SW | Sud-West |
| TAP | Trans-Adriatic Pipeline |
| UNFCCC | UN Framework Convention on Climate Change |
| UT | Universiteti i Tiranes |
| UTM | Universal Transverse Mercator |
| VOC | Volatile Organic Compound |
| W | West |
| WDPA | World Database on Protected Areas |
| WHO | World Health Organization |
| WP | Way Point |

# 1. INTRODUCTION

This Scoping Report has been compiled on behalf of Voltalia S.A (Voltalia) as part of the Environmental and Social Impact Assessment (ESIA) process for the proposed Spitalla Solar PV Project in the Durrës Region of Albania (the Project). Voltalia has appointed Abkons sh.p.k (Abkons), to act as Independent Environmental Consultants (IEC) and perform the ESIA for the Project.

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Abkons will identify and assess the potential environmental and social impacts associated with the development of the Project by conducting an objective and independent ESIA process, including relevant information and opinions of Interested and Affected Parties (IAPs) which will be collected and passed on to the Ministry of Tourism and Environment (MTE), and National Environmental Agency (NEA) to enable an informed decision-making process to take place.

The Project design will evolve throughout the ESIA process, with an iterative design process applied, whereby site-specific constraints are identified, and take into account the comments and suggestions made by different stakeholders to guide the final layout of the Project.

The ESIA will describe how the design of the Project, and associated facilities, has been influenced by such comments. This Scoping Report is the first stage of the ESIA process and aims to identify the key potential impacts and set out the framework for the ESIA.

## 1.1. Project Background and Overview

Albania has a considerable potential of Renewable Energy Sources (RES) and therefore represents an important energy resource in Albania. The use of such resources for energy production supports the long-term objective of the country's energy policies, including support for the overall economic development, increase in security of energy supply and protection of the environment. The use of renewable energy can help decrease the dependence on energy imports and improve the security of energy supply, and can even help with macroeconomic and political security of the country, decreasing the domestic budget deficit. The solar energy in particular shall play an important role in the diversification from the hydropower generation and contribute to the governmental agenda to position Albania as a net exporter of electricity in the Balkans.

The Spitalla project was originated by the MEI with the sponsorship of EBRD. It consists in solar photovoltaic plant with an installed capacity of up to 100MWp located in the municipality of Durrës in Albania. Last year, it was awarded to Voltalia further to an international tender procedure for the development, construction, financing, commissioning, operation and maintenance of the PV plant. Further to the notification of award by the MEI, Voltalia established Spitalla Solar sh.p.k., the special purpose vehicle that will house the entire project and is the developer for the proposed Spitalla Solar PV Project.

The European Bank for Reconstruction and Development (EBRD) has categorized the Project as "B" in terms of its 2019 Environmental and Social (E&S) Policy, as it was considered that this Project could result in potential adverse future environmental and social impacts that are typically site-specific and/or readily identified and addressed through mitigation measures, and therefore an Environmental and Social Impact Assessment (ESIA) and review of associated documents must be carried out.

Referring to IFC Guidelines, this project is categorized as "B" as well and an ESIA and review of associated documents must be carried out followed by their public disclosure for a minimum period of 30 days.

Furthermore, the MTE (Ministry of Tourism and Environment) has confirmed that the project is considered to be covered by Annex 2 under Decision of the Council of Ministers (DCM) No. 686 dated 29.7.2015 (amended) on EIA Procedure and categorised as requiring a Preliminary ESIA.

## 1.2. Purpose and Structure of Scoping Report

This Scoping Report has been prepared as part of the ESIA process for the Project. The ESIA, including this Scoping Report, is specifically developed to demonstrate compliance with international Lender, namely EBRD, and Albanian requirements.

The Scoping Report identifies the potentially significant environmental and social issues relating to the construction, operation and decommissioning of the proposed project that will be addressed in the ESIA. This was done through a desktop review of available project and baseline information, initial engagement with key stakeholders (and other public consultation initiatives), as well as site visits.

The Scoping Report also includes a description of the proposed project, infrastructure and activities, alternatives considered, and the ESIA methodology to be applied. An outline of the stakeholder engagement process is also presented. These issues have initiated the development of the plan for undertaking the ESIA, including the detailed studies to be undertaken. The scope of the ESIA may also be updated during the project development as a result of the findings of additional technical studies or information supplied by stakeholders.
It should be noted that the scoping report is not intended to provide detailed information regarding the Project, but rather it is a preliminary overview of the Project intended to form the basis for early engagement with relevant stakeholders and to help identify key potential Project impacts. Scoping is designed to ensure that ESIA is focusing on the most important impacts and any other significant issues.

**Report Structure**

This report is structured as follows:

- Chapter 1: provides an introduction to the Project, its participants, and the overall approach of the ESIA scoping process;
- Chapter 2: provides a brief description of the Project and its alternatives;
- Chapter 3: provides an outline of the relevant administrative framework for the Project;
- Chapter 4: sets the environmental and social context and conditions of the Project area;
- Chapter 5: including an outline of the approach for stakeholder engagement;
- Chapter 6. outlines the identified potential environmental and social impacts of the Project;
- Chapter 7: provides the proposed plan and scope for the ESIA, outlining the proposed approach and methodology for assessment and mitigation for the ESIA;
- Chapter 8: summarises the main conclusions and recommendations identified during this scoping exercise;

## 1.3. Introduction to Project Proponent (Voltalia)

Founded in 2005, Voltalia Group is a global renewable energy producer and service provider. The company develops, finances, builds and operates solar, hybrid, wind, hydro and biomass power plants. With its main activity residing in the generation and sale of electricity from self-owned renewable independent power plants (IPP), Voltalia Group also provides services related to Engineering, Procurement and Construction (EPC) and Operations & Maintenance (O&M) for its power plants as well as for third-party clients.
With nearly 800 employees, Voltalia Group has an established presence in 20 countries and covers a large diversity of markets in Africa, Europe, Latin America, as well as some parts of the Middle East and Asia. The acquisition of Martifer Solar in 2016 accelerated Voltalia Group's growth and diversification towards new countries, technologies and business models.
Voltalia Group has an extensive track record throughout Africa, Europe, South America, the Middle East and Asia. As of August 2019, the Company had developed more than 2.4 GW of renewable energy projects, among which Voltalia directly owns and operates a total installed capacity of 559.8 MW. As a service provider, Voltalia has also built 1.7 GW of power plants (mainly solar PV) and currently operates 1.2 GW of power plants (mainly solar PV) through O&M contracts.


**Figure 1. Voltalia O&M capacity**

Voltalia Group has an additional secured pipeline of 420 MW, currently in an advanced stage of development or under construction, to be commissioned by 2020, in line with the Company's 1 GW target for that date. In 2020, solar will represent almost 20% of the Company's portfolio, compared to only 4% in 2016.

**Technical Expertise & Experience**

Voltalia Group has extensive and renowned experience and capacity in developing and building renewable energy plants. The Company has dedicated EPC teams, which include a highly-technical engineering body with extensive experience in designing power stations using solar, wind and hydro technologies, as well as battery storages, electrical systems and grid connections. Over the last few years, the Company has also been deploying new capacities in hybrid power plants design and engineering.

Voltalia Group has successfully developed projects across the world, mainly in Europe, East Africa (Kenya, Tanzania), South America (Brazil, Chile) and Mexico, and Middle-East (Egypt, Jordan). Most of those projects were built by the Company as the main EPC contractor. Regarding wind power, the largest project that Voltalia has successfully developed has the capacity of 163 MW, located in the Serra Branca cluster in Brazil with the 20-year power sale contract.

In addition to EPC services, Voltalia Group offers best-in-class O&M services to the renewable energy market. The Company performs plant supervision in real-time, 24/7, and acts with local O&M teams to ensure fast failures' detection, reducing the plant production losses and maximizing revenues. The Company operates and maintains a total of 1.19 GW of solar PV assets and 616 MW of wind assets in the world, which are mainly located in Europe, Brazil, Jordan and Egypt.

# 2. PROJECT DESCRIPTION

## 2.1. Project Summary

The Power Plant is called Spitalla Solar, and is located in Porto Romano area, in Durrës. The location of the area proposed by the MEI for the construction of the Photovoltaic Park is in the cadastral zone no. 8517 and has an area of about 120 ha. As of today, the final area of the Project is not yet defined, given that the MEI has encountered difficulties to collect the ownership titles of the 120 ha and ultimately to transfer the rights to Voltalia, in accordance with the tender procedure. As a result, the Project final layout may vary. In all cases, it is certain that the footprint of the project will be located in a perimeter indicated in the figure 3 below. Other certainties are that the project will have [1] an installed capacity of up to 100MW, [2] a step-up substation to accumulate and transform the energy to 110 kV and [3] a 110kV overhead line (OHL) of approximately 2 km to transport the electricity and connect to the electricity transmission network through an income bay connecting to the busbars of the 110/20 substation kV in Porto Romano substation.

## 2.2. Project Location and Routing

Spitallë PV Plant is located in the district of Durrës (Durrës Prefecture). The distance to the main key cities and infrastructures are:

- 40 km on the west side of Tirana;
- 6 km on north of the city of Durrës;
- 7 km from Port of Durrës and from the Railway Station of Durrës;
- 9 km from the Tirana-Durrës highway.

PV Plant is bordered on the north by Porto-Romano industrial and energy zone, on the south by the Durrës city, on east by the hills of Shënavlash and Rrashbull and on the west by the Adriatic Sea.
The area of the up to 100 MW Photovoltaic Park is included within the area of the Spitallë Industrial Park, near the Porto-Romano area, which will also be developed with a series of other planned industrial activities. The location of the proposed area for the construction of the Photovoltaic Park in Spitallë is in the cadastral zone no. 8517 and includes an area of about 120 ha (Figure 3). The terrain in the project area consists of saline soils, which make it unsuitable for any agricultural activity.
In order to connect the solar PV facilities to the grid, grid connection infrastructure comprising a transmission line and a substation will be required. The transmission line will have a capacity of 110 kV and the substation will have a capacity of 110 kV. The grid connection infrastructure will connect the proposed projects to the Porto Romano Transmission Substation (PRTS), located approximately 2 km south - west of the project site. The grid connection infrastructure will be part of the Environmental Assessment process.
Two options are currently being considered for the transmission line and the connection to the Porto Romano substation (see Figure 3). The most technically, environmentally and socially preferred option will be determined at a further stage of the study such as the ESIA process.
From a social point of view these present the worst-case scenario since these alignments may result in the largest impacts. However, from an environmental point of view, running the line through the fields would be the worst case. These alignments will be studied and any change or amendment may occur in the following considering technical or E&S aspects.
The exact location and coordinates of the proposed project are presented below.

**Table 1. Coordinates of the selected area**

| Points | X_UTM_WGS84_34N | Y_UTM_WGS84_34N |
|---|---|---|
| 1 | 370421.00 | 4579372.00 |
| 2 | 370351.00 | 4579499.00 |
| 3 | 369686.00 | 4580771.00 |
| 4 | 370202.00 | 4581033.00 |
| 5 | 370259.00 | 4580949.00 |
| 6 | 370941.00 | 4579639.00 |
| 7 | 370226.00 | 4581045.00 |

| | | |
|---|---|---|
| 8 | 370564.00 | 4581218.00 |
| 9 | 370935.00 | 4580544.00 |
| 10 | 370760.00 | 4580456.00 |
| 11 | 371066.00 | 4579862.00 |
| 12 | 370924.00 | 4579789.00 |
| 13 | 370334.00 | 4580902.00 |
| 14 | 370296.00 | 4580912.00 |

**Table 2. Substation area coordinates**

| Points | X_UTM_WGS84_34N | Y_UTM_WGS84_34N |
|---|---|---|
| A | 370387.00 | 4579451.00 |
| B | 370467.00 | 4579490.00 |
| C | 370426.00 | 4579382.00 |
| D | 370507.00 | 4579423.00 |

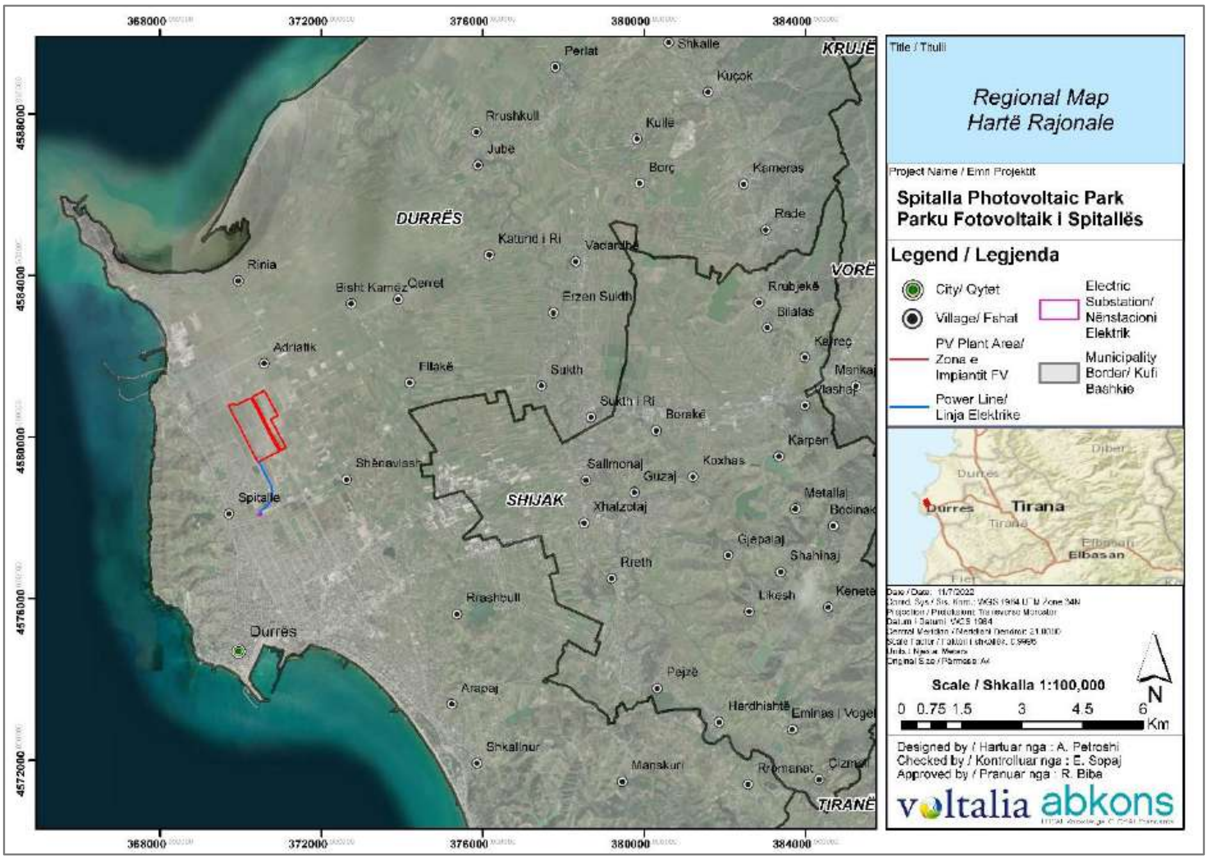



**Figure 2. Regional Location of Project**

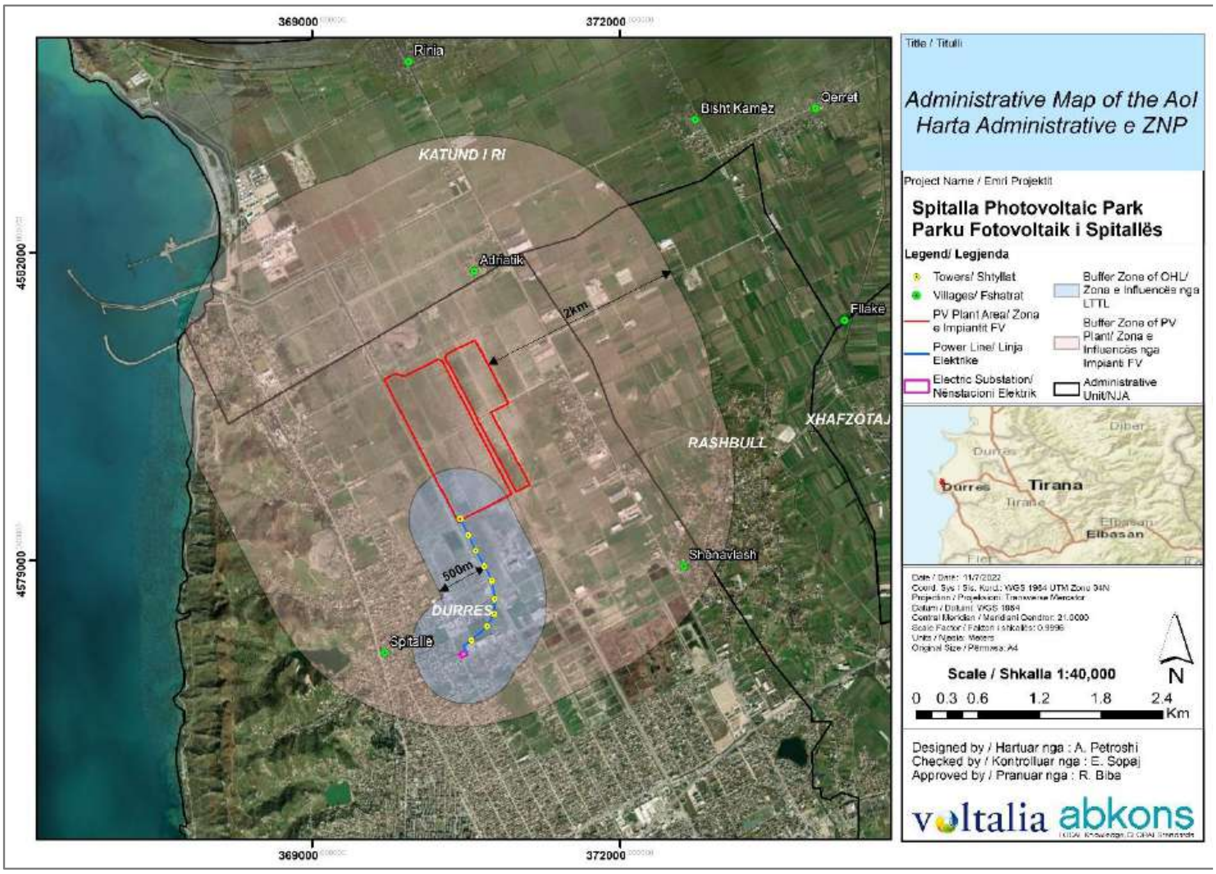



**Figure 3. Project Site and nearby districts/ Villages in the Project Area**[1]

## 2.3. Rationale for the Project

The Albanian Government is working towards a reliable and more sustainable energy sector, the development of which shall be based on exploiting all energy sources and production options to meet Albania's energy demand and create added value for Albanian citizens, in alignment with the principles of environmental, economic and social responsibility.

Historically, the electricity generation has been generated almost exclusively by hydropower plants. In 2017, the country had a total installed capacity of about 2,100 MW of which only 100 MW was thermal. In 2017, annual electricity consumption was about 7.1 TWh with a peak load demand of 1.4 GW.

Albania also imports electricity from neighbouring countries. However, these imports have progressively dropped in the last ten years following the increase in domestic power generation and the reduction in electricity losses, which have been reduced from 45% in 2013 to 23% at the end of 2018, with an investment and management plan to further reduce them to 17% by the end of 2020.

Albania is a country that in certain zones has an average of 360 days of sun radiation and therefore energy production from solar photovoltaic (PV) is an important potential source of electricity that will help in the diversification of energy sources and reduce its dependence on hydro and imported electricity.

According to Albanian National Strategy on Energy[2] 2018 -2030, Albania is aiming at "Enhancing security of energy supply and minimising environmental impacts at affordable cost for Albanian citizens". The guiding principles of the strategy are:

- Increasing the reliability and security of energy supply, while ensuring growth in welfare;

[1] Note: For the reasons mentioned in Section 2.1, the final layout of the PV plant will be located in the vicinity of the red zone indicated in the map. The buffer area was purposely made a bit wider to foresee any change of the PV plant zone and ensure that the final design and its final buffer zone will be covered in the study.

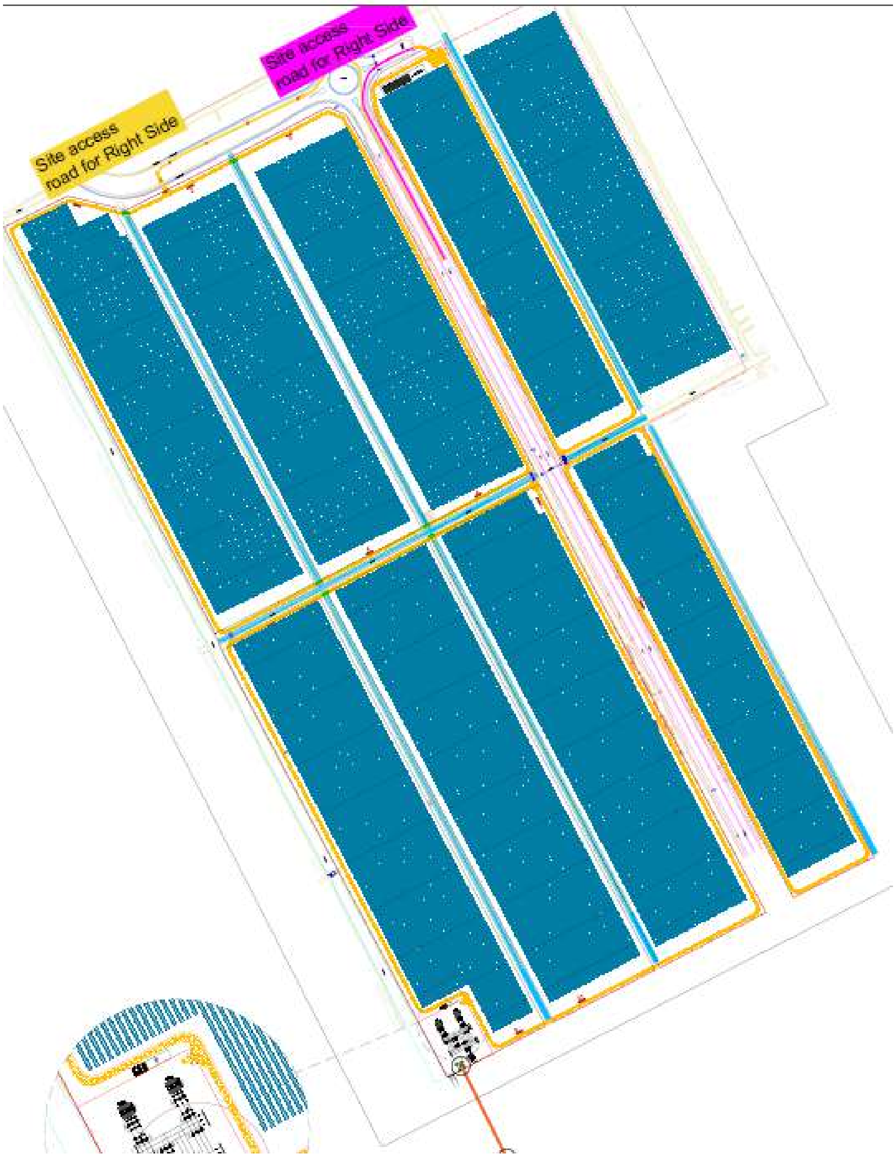
[2] https://qbz.gov.al/

- Developing internal energy sources of primary energy in a sustainable and competitive manner;
- Improving the cost effectiveness of power supply systems;
- Achieving objectives for renewable energy sources and energy efficiency set out in the National Energy Efficiency Action Plans and Renewable Energy Sources;
- Integration of the Albanian electricity market and natural gas with Kosovo, the region and European markets;
- Achieving National Targeted Target Contribution (NDC) Objectives for Reducing Greenhouse Gas Emissions (GHGs).

In this context, the investment in and development of solar PV projects is an important element in achieving the principles of this strategy, and therefore this Project is aligned with the overall objectives of Albania's national energy strategy. The Project will support Albania's strategy to meet its growing energy needs and reduce reliance on energy imports while taking advantage of Albania's optimal features for solar PV power generation.

## 2.4. Technical Overview & Project Components

Voltalia has considered a number of possible designs and layouts for the Plant. The initial layout of the




PV Project is shown in


Figure 5 below and corresponds to the project footprint on the plots of land initially foreseen by the MEI in the tender procedure. It's important to mention that the final footprint may vary according to the land that the MEI will end up selecting for the project given the MEI. In all cases, the project will have a maximum installed capacity up to $100MW_p$. It will consist in series of bi-facials modules mounted on a single-axis horizontal tracking structures and will deliver up to 90 MW (AC) to the grid.
Figure 4 gives an overview of a utility scale grid-connected solar PV power plant. The main components include:

- Solar PV modules: Each Photovoltaic module (PV Module) provides at its terminals a direct current. These PV modules are arranged in series to form a string with a defined and appropriated voltage level, and then the strings are grouped in parallel in order to increase the direct current to a defined and appropriated value, for the correct operation of the inverter. The definition of the number of modules in series ("string") is fundamental to guarantee that the string voltage is always under the maximum admissible DC voltage of the solar plant, 1500 $V_{DC}$ in this case.
- A total between 128,000 to 171,000 PV modules, each generating up to 580Wp, will be installed for the proposed project.
- **Module tracking systems**: These allow PV modules to be securely attached to the ground on tracking frames. The selected tracking system for the Project is a horizontal single axis tracker (North-South orientation) with the PV modules rotating from East (sunrise) to West (sunset), with a rotational angle of ±55°. The purpose of the tracking system is to maximise the yield of the Project by increasing the time PV modules face the sun at their optimum angle, from the early hours until the end of the day, significantly increasing the electricity generated compared to fixed structure systems.
- Inverters: The Inverter is the component which converts the direct current in alternated current. After converted and passed through all necessary protections, the energy voltage level is increased through a step-up transformer (LV/MV Transformer), in order to reduce its transmission losses, and is evacuated through the Medium Voltage cables until plant internal Substation which is connected to the distribution network (Injection Point).
- Many modules in series strings and parallel strings are connected to the inverters. The Project will require a total between 21 to 30 inverters.
- **Step-up transformers**: The output from the inverters require a step-up in voltage to reach the AC grid voltage level. The step-up transformer takes the output from the inverters (600 V) and initially steps this voltage up to 20 kV which will be collected and stepped-up again at the Project sub-station to the required grid voltage of 110 kV.

- **The grid connection interface**[3]: This is where the electricity is exported into the grid network. The substation will also have the required grid interface switchgear such as circuit breakers (CBs) and disconnects for protection and isolation of the PV power plant, as well as metering equipment. The Project will connect to the Albanian National Grid at Porto-Romano Substation located approximately 2 km south southwest from the Project Site via a 110-kV overhead transmission line. The proposed routes for the transmission line are shown below in Figure 6.

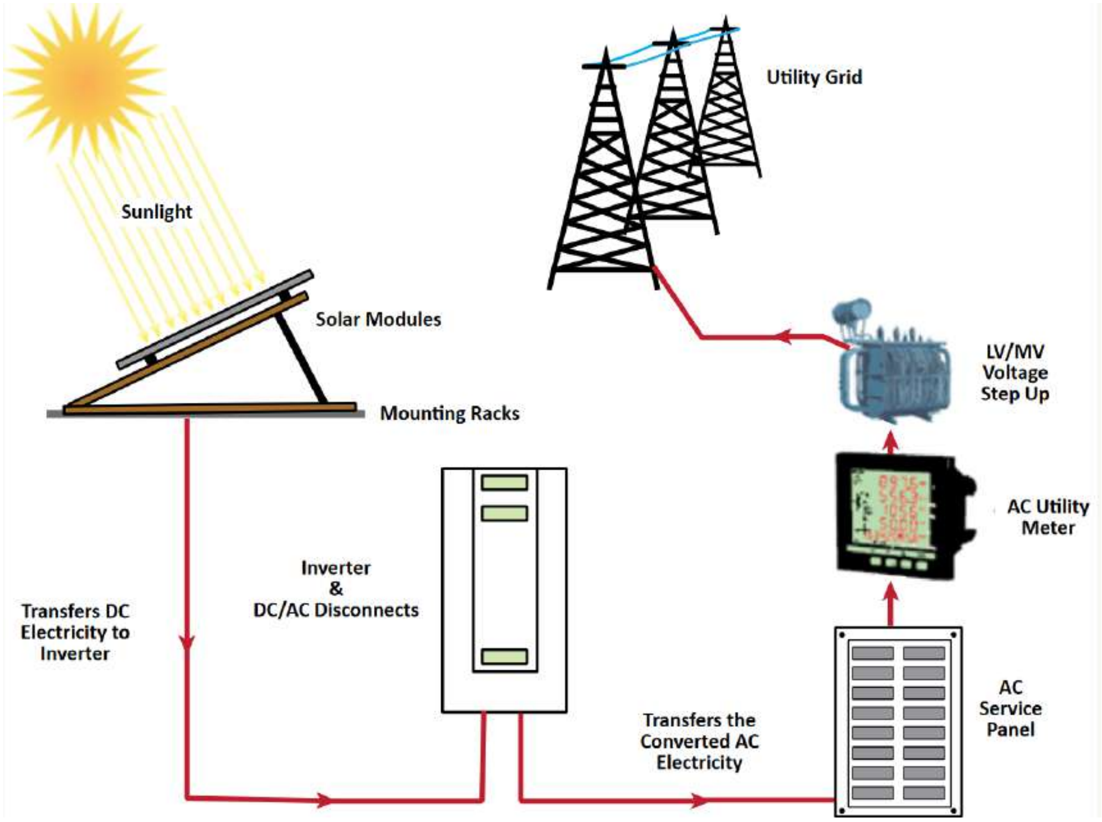



**Figure 4. Overview of Utility Scale Solar PV Plant (IFC, 2015)**

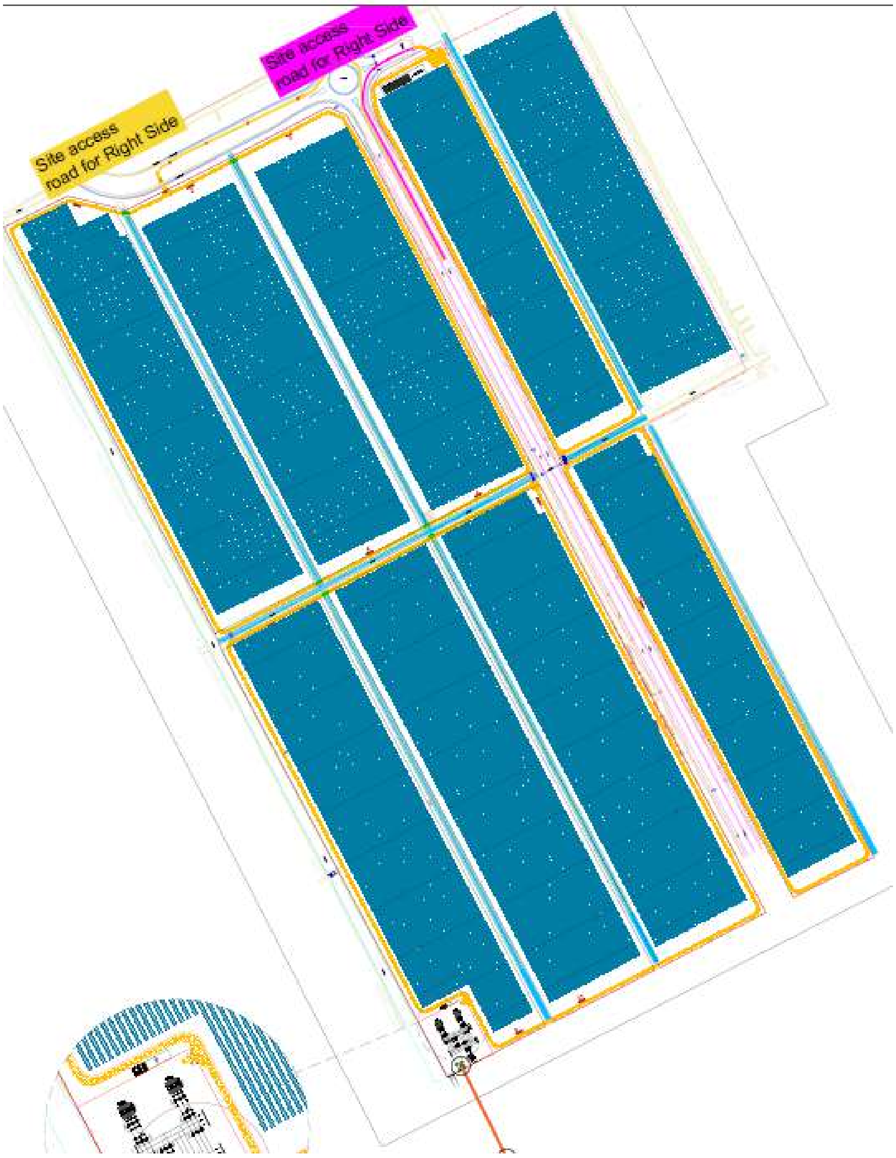
The Project will also require a building to accommodate the SCADA (Supervisory Control and Data Acquisition) equipment for the command, control and protection of the Project. This will be manned by the technicians employed for the control, operation and maintenance of the Project.
In addition to the 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.
The Project also requires a 110 kV overhead transmission line (OHL) to connect the Project to the National grid. This will be achieved via an approximately 2 km OHL connecting the Project to the substation located in the suburban area of the area of Porto Romano. The proposed OHL route lies

[3]The company need to confirm which the most preferable grid connection is in order to identify the villages potentially affected.

within the county of Durrës and the Administrative Units of Porto Romano. The OHL route is shown below in Figure 6.
All interconnection infrastructures shall be designed to ensure continuity of operation under all working conditions at the site as the first consideration and to facilitate inspection, maintenance and repairs.




Key:

PV table - 2 strings

Pathway

Existing Road

Water Channel

Site Boundary

Fence

PV Plant Entrance

Transformer Center

Substation

**Figure 5: Initial Project Layout**

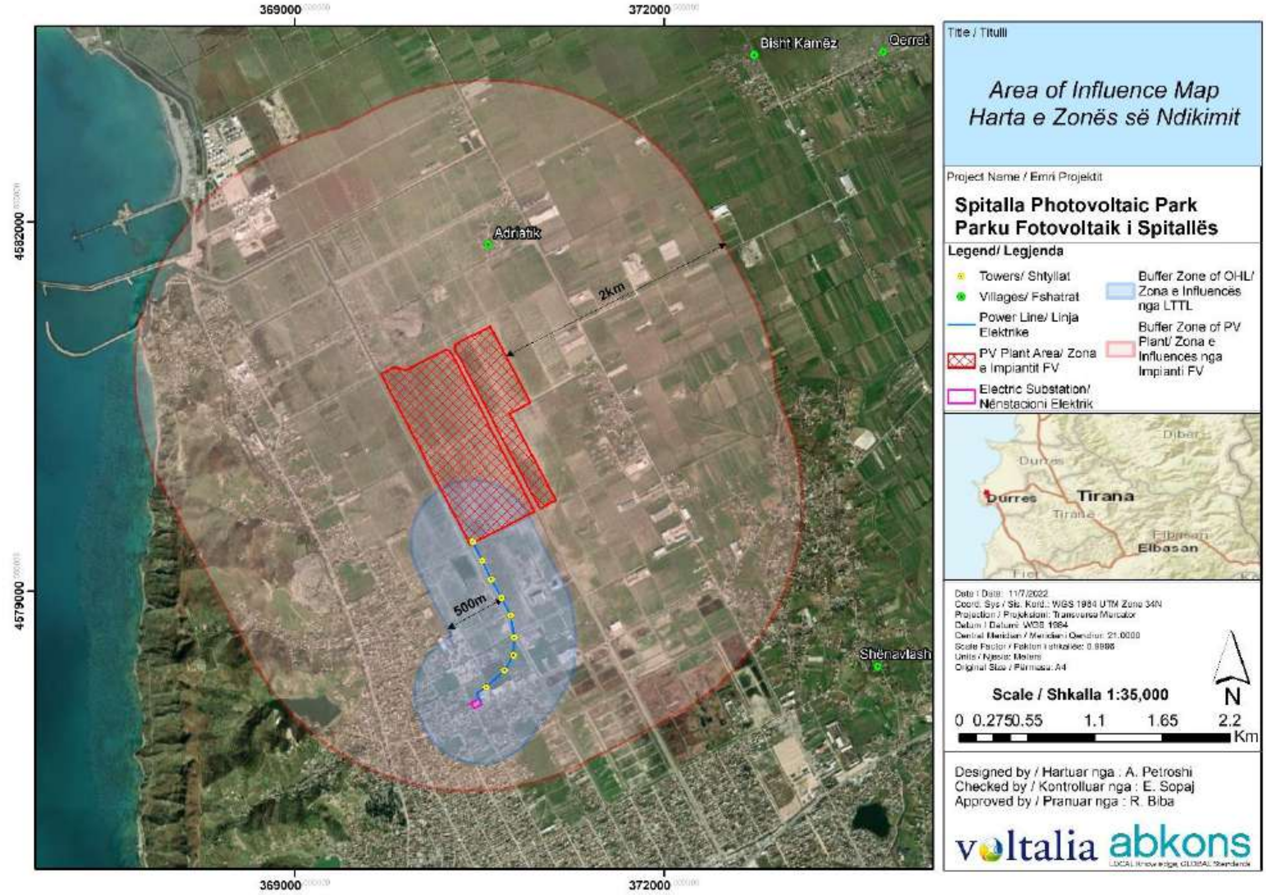



**Figure 6: Overall Project Location and Transmission Route option[4]**

[4] Note: For the reasons mentioned in Section 2.1, the final layout of the PV plant will be located in the vicinity of the red zone indicated in the map. The buffer area was purposely made a bit wider to foresee any change of the PV plant zone and ensure that the final design and its final buffer zone will be covered in the study.

## 2.5. Overview of Project Phases and Activities

The general development phases for large scale solar PV project can be categorised as follows:

- **Mobilisation/Pre-construction**: site preparation, mobilisation of equipment and materials to site.
- **Construction and Installation**: civil works, electrical works, and equipment installation.
- **Operation**: Plant operation and routine maintenance.
- **Decommissioning**: Dismantling of equipment and associated facilities and site restoration.

The proposed total capacity of the PV plant is up to 100 MW and it is proposed to be built in a single phase. Construction of the Project is planned to commence in Q3 2023 and be in full operations in Q4 2024. Electricity generated from the project will be exported via power lines to the nearby substation for transmission and distribution via the national network, construction of which is planned to occur parallel to the PV element of the Project.

Potential environmental and social impacts are related to activities undertaken during construction, operational and decommissioning phases; key activities during these phases are summarised in the sections below.

### 2.5.1. Mobilisation/Pre-construction

The mobilisation phase needs to take place before construction and installation work can begin at the project site. The pre-construction phase includes the development of detail design, mobilisation and site preparation stages. The project will be implemented by Voltalia acting as the EPC Contractor. As EPC Contractor, Voltalia will be responsible for the development of the detailed design, construction and commissioning of the plant.

The mobilization phase includes the ordering of materials and equipment, signing contracts with subcontractors and the hiring of staff. This phase also involves the mobilisation of workers, planning and transportation of the project components, equipment and materials to the site (e.g., PV modules), as well as site preparation which involves the clearing, grading and levelling of the site and establishment of on-site facilities and the construction compound; there are no plans to provide on-site worker accommodation.

Heavy-duty and other pieces of equipment will be moved to the project site at the beginning of construction activities for civil work activities and equipment installation. All PV modules, electrical and structural equipment are planned to arrive to site via road in “containers”. Besides equipment, the project would also require large construction vehicles and equipment, such as bulldozers, excavators, cranes etc. to assemble the facility.

During the site preparation period, the workforce required for site security, manual labour, civil works, transportation of goods and other similar services will most likely be drawn from the local labour pool.

### 2.5.2. Construction and Installation Phase

The construction phase of the project will include many activities and phases, such as:

- Construction/improvement of internal and external access roads;
- The Levelling of the ground;
- Fencing around the site;
- Installation of PV Power Units;
- Pile driving for mounting structure;
- Construction of electrical substation and foundations;
- Excavation, trenching and cable laying;
- Fixing and wiring of the panels;
- Installing CCTV (if applicable) around the fence line and access points;
- Installing water tank for staff and O&M activities;
- Installation of septic tank;
- Construction of buildings;
- Erection of overhead HV power lines;

- Testing and commissioning of equipment and the project as a whole;
- Site clean-up.

During the construction phase the piles need to be driven into the ground to form the structural base of the PV arrays. Once the PV components have arrived on site, technicians will supervise the assembly of the panels and test the facility. The PV panels will be installed on galvanized steel structures. There will be a basic dirt roadway providing internal access for the construction activities. A phased approach will be adopted during the Project construction.

A section of the site will be used as a laydown area where shelters, equipment, sanitary facilities (portable) and containers will be located.

To provide access to the site from the nearby public road a short access route will need to be prepared to levels that will be acceptable for the transport of equipment, material and people to and from the site. It is estimated that around 5 diggers/loaders/bulldozers will be required for land clearing and 5 to 10 trucks with cranes will be required for the construction. Approximately 600-800 x 40-foot container loads would be required to construct the PV solar facility. The need for cut and fill areas and/or borrow pits at the PV sites, along roads and at substation/ transformer sites, will only be known after the final design has been completed.

Auxiliary buildings, such as guard rooms, O&M buildings, water treatment facilities, etc., will also be required.

The expected duration of the construction period is 3 months for the site preparation and 8 months for construction (seeTable 3). The final construction schedule will be determined during the detailed design phase based on the defined work to be performed.

It is envisaged that during the construction phase up to about 200 people will be employed. This would include around 20 experienced engineers, 10 experts and 150-180 local skilled, semi-skilled and unskilled workers. The number of workers on site will build up over time until peak construction activity is reached and then will start to tail-off as construction nears completion and the Project enters the commissioning phase. No onsite workers' accommodation is planned as part of the project. The project will aim to employ unskilled and skilled labour from the surrounding communities for construction where possible, and non-local workers will be housed within the existing nearby accommodations.

**OHL Transmission Line**

The overhead transmission line (OHL) will be supported and guided by pylons connecting the Project to the Porto Romano substation. The construction of the transmission line will be undertaken in the following sequential steps:

- Preparatory work:

  - Micro-siting and finalisation of the locations of towers and route of OHL;
  - Mobilisation of engineering machinery on the OHL route;
  - Construction of platforms for pylons and delivery of materials along the OHL route;

- Construction work:

  - Marking out of foundation, earth works and excavations;
  - Installation of foundations and grounding devices;
  - Assembly, installation, alignment and fixing of pylons;

- Installation work:

  - Rolling out and connecting wires and cables, lifting them onto pylons, stretching and fixing on pylons;
  - Installation of vibration dampers and remote spacers, mounting loops.

Tentative timings and schedule for the construction of the Project are shown in the Tables below:

**Table 3: Construction Schedule**

| Tasks | Duration | Estimated date |
|---|---|---|
| Construction notices to proceed | 1 Day | July 2023 |
| Engineering and procurement | 150 Days | May 2023 – September 2023 |

| Tasks | Duration | Estimated date |
|---|---|---|
| Site Mobilization | 20 Days | September2023 |
| Site Preparation | 90 Days | September – November 2023 |
| Mechanical works | 150 Days | December 2023 – April 2024 |
| Electrical works | 150 Days | March – July 2024 |
| Commissioning & Testing | 60 Days | August – September 2024 |
| | | |
| Commercial Operation Date | 1 Day | October 2024 |

### 2.5.3. Operations and Maintenance

Once the facility is complete and operational, it is expected that it will have a lifespan of approximately 30 years.
Due to the passive nature of solar PV plants, there are no emissions or very limited waste generated during the operation of the project, no significant noise generating equipment or machinery, and limited need for hazardous materials to be stored on site.

The Project will be controlled and managed through a SCADA system which will be manned during daytime hours by fully qualified and trained technicians.

Day to day facility operations will involve regular on-site preventive and corrective maintenance tasks in order to keep the PV power plant in optimal working order throughout the operational period, to ensure extended system lifetime, as well as compliance with manufacturer warranty. The preventive maintenance follows a routine service schedule aimed at preventing faults from occurring and keeping the plant operating at its optimum level. The frequency of the preventive maintenance depends on a number of factors such as the technology selected, environmental conditions of the site, warranty terms and seasonal variances. It includes activities like PV module cleaning, inverter servicing, checks on structural integrity of the mounting structure, and vegetation management. Corrective maintenance is carried out in response to failures, for example the repair/exchange of damaged or faulty equipment. Typical O&M activities include:

- Monthly cleaning of PV modules;
- Control of vegetation (weeds, bushes etc.) within the site;
- Routine inspection of all PV modules and associated structures, such as cables, transformers, inverters, mounting structures etc.;
- Operation and maintenance of ancillary facilities such as substation;
- Inspection and maintenance of transmission lines;
- Inspection and maintenance of internal pathways and access roads.

One of the key activities during the operation phase is the regular cleaning of PV modules to prevent dust build-up which could affect their performance. This has the potential to consume significant quantities of water. In order to reduce the water demand of the project it is planned that the PV modules will be cleaned monthly using dry cleaning techniques, with wet cleaning (using water) only planned on a quarterly basis or should there be a degradation in plant performance. For wet cleaning it is estimated that on average around 1 litre of water per PV module is required, which equates to around 300 $m^3$ of water per wet clean, and up to a total of 1,200 $m^3$ per year. No additives are expected to be used. Nevertheless, in case of usage, it must be biodegradable with low environmental impact and contain no Volatile Organic Compounds (VOCs), Phosphate or Chlorine.
Once the OHL has been completed and commissioned, it will be handed over to the Transmission Line Operator (OST) to manage its operation and maintenance.
The water for cleaning, and potable use, will be sourced from local water wells if available onsite. Otherwise, it will be provided through agreements done with local companies like specialized companies, municipality or fire station. The Project will conduct ground water analysis and, in the case that purification is required, will provide the necessary water treatment facilities.
It is planned that the buildings (guard house, O&M buildings) will be heated using electric heaters.

A total of around 200 job opportunities will arise during the operation phase, including skilled and semi-skilled labour (such as electrical and mechanical technicians, environmental and social specialists) and unskilled labour (such as module cleaners and security personnel) for a duration of 30 years.

### 2.5.4. Decommissioning and Closure

The Project is expected to have an economic useful lifespan of 30 years and the power plant infrastructure would either be decommissioned, extended or upgraded (if a new license is granted) once it has reached the end of its economic life. Upgrading the Project would consist of replacing old PV modules with new ones, increasing the total peak power of the plant (a process called "repowering") or increasing the power of the plant by adding new elements such as trackers, PV modules or transformers.

If the Project is to be decommissioned, then the site will be returned to close to its original state. The components of a PV plant have an intrinsic value either for re-use or recycling. This value will cover the cost of decommissioning the plant and rehabilitating the site.

PV panels and ancillary structures consist of numerous recyclable materials, including glass, semiconductor material, steel, concrete, wood, aluminium, copper and plastic. When the PV Project reaches the end of its operational life, the component parts will be dismantled and recycled. The Project will be dismantled and removed using conventional equipment with minimal impact on the environment. These materials will then be safely recycled or disposed of in accordance with all applicable laws and regulations at the time of dismantling.

Decommissioning is expected to take between 6 and 12 months. The effects of decommissioning are often similar to, or of a lesser magnitude than, construction effects and will be considered where possible in the relevant sections of the ESIA. However, there can be a high degree of uncertainty regarding decommissioning as engineering approaches and technologies evolve over the operational life of the Project. A Decommissioning Plan, to include timescales and transportation methods, will be developed by the Project and agreed in advance with the relevant authorities.

## 2.6. Project Alternatives

### 2.6.1. No-Project Alternative or Do Nothing

Under the 'Do nothing' option, the proposed Spitalla Solar PV Project and associated transmission line would not be built, therefore no capital investment costs will be incurred, and any negative environmental and social impacts associated with the construction and operation of the project would be avoided; however, the benefits of the Project, as outlined in section 2.3 'Need for the Project', would not be realized.

Furthermore, any benefits that the solar PV Project can bring to the local ecology through active biodiversity management and elimination of agriculture within the site footprint allowing natural processes to continue, would also be lost in the do-nothing scenario. In a wider context, the 'Do nothing' option would limit overall economic development and possibilities for the improvement in the social welfare of people in the region.

### 2.6.2. Alternative forms of electricity generation

Besides solar PV technology, other forms of potential power generation include thermal (use of fossil fuels), biomass, hydro, wind farms and/or nuclear power; these options are discussed below:

**Thermal generation** is not considered a good choice as fuel sources (such as gas and/or coal) must be imported or generated at high cost. For example, the use of coal or oil as a fuel is highly noted with the environmental impacts of pollutant emissions inherent in coal combustion, for which control technology adds significantly to project costs. As a result, transport costs would be high, which are stated as a reason why there are no coal-fired power plants in Albania. In addition, the generation of greenhouse gases as a result of operating thermal power plants contributes to global warming, and air emissions associated with thermal generation are often problematic.

**Nuclear power** is an expensive and very complex energy generation system with a number of technical, safety and environmental challenges. Currently, the possibility of installing nuclear power plant in Albania is considered almost non-existent.

**Gas:** Albania is connected to international gas networks only though Trans-Adriatic Pipeline which is under construction in its territory. The country does produce a small amount of gas. However, it has an outdated pipeline network, which is mostly not operational. Gas development plans will require considerable additional infrastructure planning and development, and give rise to emissions to air and require significant quantities of clean water.

**Hydropower:** Almost 100 per cent of the country's domestically produced electricity comes from hydropower. The mountainous nation is home to eight major river systems. The Drin river, located in northern Albania, is the largest river in the country and hosts the Fierzë (500 MW), Komani (600 MW) and Vau I Dejës (250 MW) hydropower stations. This cascade provides around three-quarters of the country's total electricity capacity and 90 per cent of domestic electricity production. However, the feasibility of a hydropower project wholly depends on having the correct resources and topography to enable the construction and operation of such a facility. A hydropower project is not feasible at the proposed Project site.

**Wind energy:** the wind resource is considered unknown in Albania; the supply-demand balancing is considered challenging and the resource intermittent. The economics of wind projects are wholly dependent on having sufficient wind resource at a given location. The wind resources at the proposed Project site are unknown. Furthermore, a large-scale wind farm also presents risks to local and migratory bird species, and given the site's close proximity to the protected Spitalla National Park, which is recognised for its importance for bird species, this would present a major ecological risk for a large-scale wind farm.

### 2.6.3. Alternative Sites

The proposed location for the PV Park was defined by the Ministry of Infrastructure of Albania, therefore cannot be subject to change. The only element of the project that can substantially be designed in different ways is the OHL route.

The principle to design OHL route is to avoid as much as is possible the following areas:

- Populated areas;
- Forested areas and implicitly avoid deforestation;
- Farming lands, especially with vineyards and orchards;
- Parks and natural reserves;
- Geologically unstable areas;
- Special landscape or with an architectural and historical value.

OHL routing will consider land use restrictions in the zone around the OHL which are mandated by Albanian legislation, as well as land needed for pylon footings. Furthermore, the ESIA will identify sensitive ecological areas. The findings of the ESIA will be used to inform final route selection in this area, to further minimise, where feasible, the potential for economic displacement with regards to agricultural land use, as well as limit the potential ecological impact.

It is considered that the proposed approach, including incorporation of the findings and recommendations of the ESIA into the final route design, will fulfil the principles listed above.

## 2.7. Iterative Design

The Project design will evolve throughout the ESIA process, with an iterative design process applied, whereby site-specific constraints and design criteria will be identified to guide the final layout of the Project. If necessary, areas of the Project site may not be developed in order to avoid, reduce or remove major adverse effects or due to physical constraints.

The iterative design process will take into account the comments made during consultation, including in response to this Scoping Report. The ESIA will describe how the design of the Project, and associated facilities, has been influenced by such comments.

# 3. LEGAL FRAMEWORK

## 3.1. Introduction

This section outlines the regulatory national and international requirements and standards relating to the management of E&S risks that are applicable to the Project.

## 3.2. National Legislative Requirements

Albania has specific legislation requiring the need for an Environmental Impact Assessment (EIA). The 2002 Law on Environmental Protection established certain requirements, including the requirement to conduct an EIA and to obtain an environmental permit before initiating a project. It establishes monitoring requirements to help identify project impacts during construction, operation and decommissioning, as well as requirements during the project closure phase. The law was substituted by Law No.10431, dated 09.06.2011 “On Environmental Protection” amended, which aims to mirror EU Directives and best practices towards environment management. The 2011 Law on Environmental Protection (as amended) establishes the environmental protection framework, institutional framework and competencies, environmental impact assessment principles and environmental permitting. It defines activities affecting the environment as “any economic and social activity that uses the environment or part of it, or that discharges materials and energy by changing its characteristics”.
The legal framework for the EIA procedure in Albania is based on Law No. 10440 “On Environmental Impact Assessment”, approved on 07.07, 2011 and later amended with Law No. 12/2015 “On some changes to the law No. 10440, dated 07.07.2011, On the Environment Impact Assessment” and the Decision of the Council of Ministers (DCM) No. 10 448, dated 14.07.2011 “On Environmental Permits” amended. An important legal framework for EIA is also the DCM No. 686, dated 29.07.2015 “On the rules, responsibilities, timelines for the EIA procedure and the transfer procedure of the decision for the environmental declaration” amended and DCM No. 247, date 30.04.2014 “On the determination of rules, requirements and procedures for public information and involvement in the environment decision-making process”. The framework and procedural legislation relevant for the undertaking of an EIA is provided in Table 4 below.

**Table 4. Albanian Legislation for an EIA**

| 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 EU principles and best practice toward environment management. | It requires that an EIA is conducted and an environmental permit obtained before initiating the Project. 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 of an EIA, determines the project categories with environmental impacts, and establishes the responsibilities and rights of institutions and public in the EIA procedure. The law determines the competencies of National Environmental Agency (NEA) and Ministry of Tourism and Environment (MTE) in the procedure, review of EIA report and final approval. | The EIA for the Project will be submitted to MTE and NEA for control, review and approval. |

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| Law No. 10448 (14/07/2011) Amended | "On Environmental Permits" (as amended) - defines the terms and conditions for granting environmental permits to industrial operators and determines measures for the prevention and control of pollution emissions and the safe management of chemicals. Generally, the objective of the regulatory regime is to prevent environmental damage, comply with health and environmental standards, and protect against any residual liability. | Environmental Declaration applies for the construction of the proposed Project (regulated under law 10440/2011) |
| DCM No.686 (29.07.2015) Amended | "On the rules, responsibilities, timelines for the EIA 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 EIA report and appendices, timeframe of the procedure, application for approval, final decision and impact monitoring and reporting during the project execution. | The ESIA report will be prepared in accordance with this DCM. |
| 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. | Stakeholders will be engaged/consulted throughout the ESIA process; a Stakeholder Engagement Plan (SEP) has been developed and will be implemented by the developer and consultant. |

### 3.2.1. Environmental Approval Procedure

All projects that have the potential to impact on the environment shall undertake an EIA prior to implementation. The EIA report and other necessary documents will be submitted to the MTE who will transfer the project files to the NEA for review. The project shall be approved with Environmental Decision/ Declaration of the NEA and MTE. The procedure of EIA is detailed in the DCM No. 686 dated 29.07.2015 "On the rules, responsibilities, timelines for the EIA procedure and the transfer procedure of the decision for the environmental declaration" amended.

The basic document, which supports the EIA process, is the environmental impact assessment (EIA) report, which, depending on the potential impacts of the project, may be:

- preliminary EIA report, for the projects of Annex II;
- in-depth EIA report, for projects of Annex I.

Based on the legal requirements of Law No.10440/ 2011, "On Environmental Impact Assessment" amended, Annex II Point 3. Energy industry the Project falls under the following relevant category:

- Industrial installations for the production of electricity, steam or hot water (projects not included in Annex I).

However, we have required information from NEA referring to EIA project classification.

Referred to NEA response with prot no. 1375/1 date 03.03.2022 this project is classified under In-Depth EIA procedure.

Part of the scoping consultation is to receive confirmation from NEA whether the proposed Project is overall subject to the requirements of an in Depth EIA under Law No.10440/ 2011, or preliminary EIA

procedure. “Decision” is the official document issued by the NEA, in which it is decided whether or not a project of Annex II should be subject to the in-depth EIA procedure.
During the initial consultation meeting with the Ministry of Tourism and Environment (MTE), they confirmed that the project is considered to be categorized for in-depth ESIA.
A summary of the overall EIA decision making process is presented below in Table 5.
The In-depth EIA procedure flowchart along with timelines is illustrated in the Table 5 below.
**Table 5: Overall EIA Decision Making Process**

| Step | Action | Timeline | Documents to prepare |
|---|---|---|---|
| Screening / Classification | Based on the project capacity / specifications, carry out a self-classification of the project in terms of Annex I (In-depth EIA) or Annex II (Preliminary EIA) of the Law on EIA, No.10440 dated 07.07.2011.<br>a) **IF the project falls under Annex 1**, the EIA application starts with the preparation of the Environmental Interaction Report (EIR) and proceed with the in-depth EIA procedure;<br>b) **IF the project falls under Annex 2,** the Consultant prepares the preliminary EIA study and proceeds with Preliminary EIA process;<br>c) **IF the project does not fall in any annexes,** then the Consultant asks the opinion of the National Environmental Agency (NEA). | --- | ---- |
| Preliminary EIA | As per point “b” above the consultant prepares and applies with preliminary EIA.<br>NEA may accept this procedure, and may also require additional information.<br>NEA will then consult with the state stakeholders (at national and local level) and proceed with a decision/ approval or not.<br>If NEA considers the Preliminary EIA Study is not sufficient for the project (due to issues such as protected areas, sensitive areas, natural or social economic issues), it will request further studies and to implement an in-depth EIA Procedure. | 45 days to obtain a decision / an approval and declaration | Technical report on the proposed project,<br>Preliminary EIA report,<br>Payment of 30’000 ALL for NEA |
| Environmental Interaction Report (EIR) | The consultant prepares and sends the EIR as the first step of the in-depth EIA Procedure.<br>NEA consults the EIR with state stakeholders, confirms the procedure and sends recommendations or requests for additional studies to be carried out during in the depth EIA study; | 45 days to obtain a decision and recommendations | Environmental Interaction Report (EIR)<br>No payment is required |
| Public consultation | The consultant prepares the application for public hearing;<br>NEA publishes EIR for 20 days (in NEA webpage; | After 20 days from application organise | EIR and application for public hearing. No payment is required for application; |

| Step | Action | Timeline | Documents to prepare |
|---|---|---|---|
| | Consultant distributes the notification for public hearing (place, date and time) in TVs, radio, newspaper; | the public hearing | After public hearing: Public consultation report, containing: Presentation for stakeholders, MoM-s of the discussions; Consultation form and signature of stakeholders. Costs of publications and public hearing to be covered by the Developer; |
| In-depth EIA | Consultant submits the in-depth EIA package to MTE;<br>MTE forwards the application to NEA;<br>NEA consults the EIA report with stakeholders and may require additional information;<br>NEA takes a decision, approve or not the EIA report;<br>If approved, MTE issues an EIA declaration to the Developer/ Consultant | 60 days to obtain the EIA declaration. | EIA package contains:<br>• Technical report on the proposed project,<br>• Non-technical summary of the in-depth EIA report<br>• In-depth EIA report,<br>• Public consultation Report<br>Payment of 50,000 ALL for NEA |

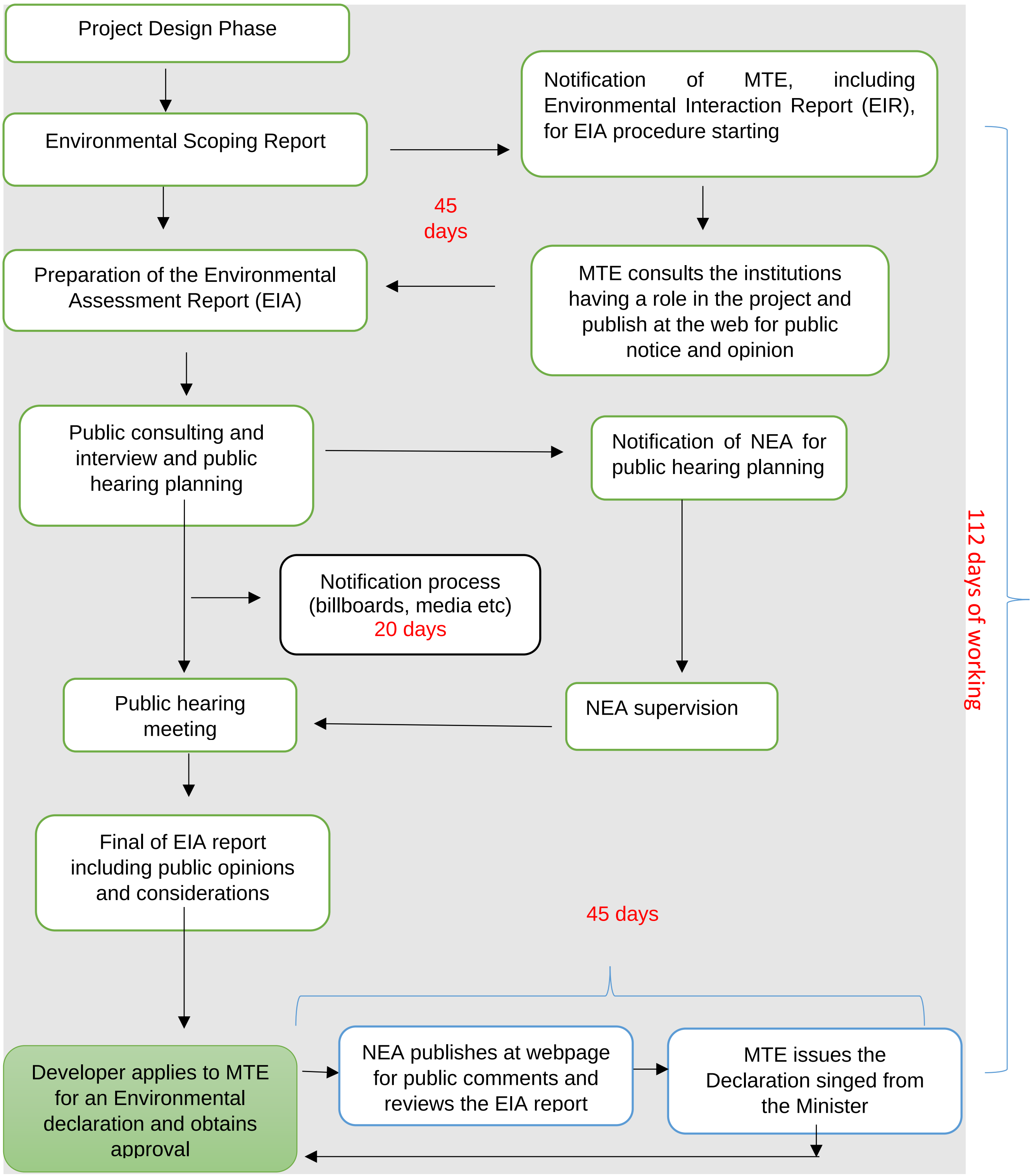



**Figure 7. Procedure for Preliminary EIA and Timeline according to Albanian Legislation**

According to Law No.10440/ 2011 (Article 11), at the conclusion of the EIA process, NEA will decide if an Environmental Declaration will be issued or if further studies are required (i.e., an 'in depth' EIA is required). It has been anticipated that at the end of the EIA process, an Environmental Declaration will be issued by the Ministry; hence an application to MTE will be made for an Environmental Declaration. The documents required to be submitted to MTE along with the application for the Environmental Declaration include:

- Environmental Interaction Report;
- Full EIA report;

- Non-technical Summary;
- Technical report summarizing the project;
- A summary of the consultation process with the public and other stakeholders, conducted during the EIA process;
- A copy of the payment of the service fee as defined in the relevant legislation.

The National, Regional and Local institutions with a role in the EIA process include:

- Ministry of Tourism and Environment (MTE);
- National Environmental Agency;
- Regional Directory of Environment;
- National Agency of Protected Area;
- Regional Administration of Protected Areas;
- Municipality of Durrës;

In addition to the legislation specifically pertaining to the need for an EIA, there are national policies, laws, and regulations applicable to the proposed Project and its environmental and social aspects. Furthermore, Albania has developed environmental standards that are mainly based on European Commission Directives. Existing standards include: protection of biodiversity, cultural heritage, air emissions, noise levels, water quality and discharge, and waste management.

### 3.2.2. Protection of Biodiversity and Protected Areas Framework

The MTE is responsible for natural resources conservation and management in Albania, including the protection of the environment, forest resources, biodiversity, pastures and watercourses. Biodiversity within Albania is protected by specific legislation and practical measures as foreseen under the system of Protected Areas (PAs). Albanian legislation for the protection of biodiversity and relevance to the Project is summarized in Table 6 below.

The central government is currently restructuring and decentralizing the administration and management system of nature conservation, focused mainly in the forest resources and pastures. The aim is to strengthen the existing policy and regulatory framework; create a more effective PAs administration, enable participation and active involvement of local governments in the management of PAs, Forest Areas and pasturelands, facilitate appropriate training of administration staff, and provide financial support and technical assistance for PAs management and biodiversity conservation.

**Table 6. Albanian Legislation on Biodiversity Relevant to the Project**

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| Biodiversity | | |
| Law No. 9587 (20.07.2006) | "On the Protection of Biodiversity" (as amended) – This law establishes requirements for the preservation and protection of biological diversity, including protected areas, sensitive habitats and species. The law requires a biological assessment as part of environmental assessment and collection of all relevant data for the decision-making process. | The EIA baseline characterization of biodiversity in the Project Area includes a description of protected areas, sensitive habitats and species based on a desktop review of available literature, supplemented by data collected as part of the baseline field studies. The impact assessment considers potential impacts on biodiversity and proposes mitigation measures for the protection of biodiversity. |
| Protected Areas | | |
| Law No. 81/2017 dated 04.07.2017 | "On Protected Areas" – This law governs all matters related to Protected Areas in Albania. It determines the categories of the protected areas in Albania, management rules and roles on decision making process. It requires compliance with the specific rules when accessing, working and performing any other related activities nearby and/ or within the protected areas. | The Project's construction activity will not occur close to a protected area |

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| Ordinance No. 1280, dated 20.11.2013 | "On the approval of the Red List of Wild Flora and Fauna" (as amended) - This ordinance lists the status of the conservation for flora and fauna species in Albania | Species of conservation interest based on literature and recent studies conducted. Further studies will be conducted within the scope of the EIA. |

Law No. 81/2017 "On Protected Areas" defines the different categories of the PA's in Albania, and their management prescriptions. Albanian Law No. 81/2017 on PA's defines 7 categories of PA, each with varying degrees of protection as follows:

- Strict Nature Reserve (Category I);
- National Park (Category II);
- Natural Monument (Category III);
- Municipal Natural Park (Category IV);
- Protected Landscape (Category V);
- Protected Area of Managed Resource (Category VI);
- Protected areas of international interest (no specific protection category).

The category designation does not necessarily define the protection afforded to a protected area. Additional information on protected areas in the Study Area is provided in Section 4.

### 3.2.3. Protection of Cultural Heritage

Albanian legislation for the protection of cultural heritage and relevance to the Project is summarised in Table 7.

**Table 7. Legislation for the protection of cultural heritage**

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| Law 27/2018 (17.05.2018) | "On Cultural Heritage and Museums" - All matters relating to cultural heritage in Albania are governed by this law". The law defines the preservation and chance finds procedures (archaeological objects or items of cultural heritage value which are discovered by chance) to be used during Project implementation. | *Cultural heritage monuments* in the vicinity of the project area have been preliminary identified based on literature data and ASIG portal and ICM Portal. Further studies will be performed during EIA baseline. |
| Article 146 of the law | Requires and obliges any person who discovers or excavates objects of cultural heritage value, by chance during construction works, to suspend work immediately and inform the relevant local authorities within three days. The relevant local authorities consist of the local government office (municipality), the Police Department and the Regional Directory of Cultural Heritage (RDCH). The RDCH verifies the situation/findings and reports to the Institute of Cultural Monuments (IoCM). These institutions are responsible for assessing the archaeological value of the objects found, and determining whether work may continue or whether it must remain suspended until further ground investigations have been undertaken. | A chance find procedure will be developed and implemented prior to construction of the Project and in the event of a chance find, the authorities will be notified as required. The local authority responsible for the preservation, restoration, and management of cultural monuments is the RDCH, under the authority of Ministry of Culture. The regional directorate that covers this project is Durrës County RDCH. |
| Article 5, paragraph 64 and article 31 | Defines the conservation of non-material cultural heritage by measures that aim of long-lasting preservation of such cultural assets. | At this moment the project has not identified any non-tangible (non-material) cultural assets. |

### 3.2.4. Protection of physical environment framework

Albania has developed legislation for the protection of the physical environment including guidelines, thresholds and limits for emissions. Legislation related to water, air, noise, vehicle and equipment emissions, fuel quality, waste and wastewater is summarised in Table 8.

**Table 8. Legislation related to protection of the physical environment**

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| Water | | |
| Law No. 111/2012, amended with Law Nr. 6/2018 | "On integrated management of water resources" amended with Law No. 6/2018 "On some changes and updates "On integrated management of water resources" based on Directive 2000/60/EC Water Framework. The aim of the law focuses on: (i) environmental protection and improvement of water, surface water, either temporary or permanent, internal sea waters, territorial waters, exclusive economic zones, continental shelf, trans-boundary waters, groundwater, and their status; (ii) security, protection, development and rational utilization of water resources, protection of water resources from pollution etc. This law provides the definition of water bodies and sets some protection and usage restrictions, and requires others to be approved by several by-laws. The law defines the banks of the water resources, restriction of certain harmful construction activities in the banks[5]/ shores and water protection areas. | For purposes of protection of water and aquatic ecosystems it is necessary to undertake special protection measures. Protected areas shall be determined, based on this Law and other specific laws. Protected areas may include the following: a) sanitary protected zones for potable water; b) areas for fish and shellfish farming, according to the fishing legislation; c) areas for bathing and recreation; d) areas prone to eutrophication and areas vulnerable to nitrates; and e) areas intended for protection of humans, plants or animals or habitats where maintaining or improving water status is a significant element for their protection. Mitigation measures for the protection of groundwater and surface water quality have been proposed. |
| DCM No. 177 (31.3.2005) | "On the allowed norms of liquid discharges and host water environmental criteria" - provides the allowed norms for effluent discharges on the environment, for the protection water resources. | All liquid effluents must comply with Albanian standards and regulations for quality, temperature and odour before being discharged to the environment. The water discharge standards related to the project are limited to the construction of the temporary construction facilities. Several options for wastewater will be evaluated within the scope of the EIA process. It shall be noted that there are no standards for small waste water discharge facilities and current standards consider only community discharge after treatment in a specific plant. Currently, there are no specific standards for the discharges of small agglomerates (as might be generated by faculties for the 200 or so workers). In the absence of such emission standards for the project, international |

5 Banks" are strips of land adjoining seas, lakes, reservoirs, lagoons, ponds, rivers and streams which comprise a minimum of two areas of land: i. 5 meters at a right angle upper edge of the natural banks on steep banks and 20 meters from the maximum water level over a period of 25 years on flat banks, which can be used, on the basis of special provisions, for public purposes, ii. 100 meters at a right angle from the upper edge of the natural banks on the steep banks, and 200 meters from the maximum water level over a period of 25 years on flat banks, where every activity undertaken will be determined by the water authorities.

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| | | standards can be applied but this shall be agreed with authorities through a clarification procedure for (potential) construction facilities. |
| DCM No. 379 (25.5.2016) | "On the approval of the regulation[6] on Drinking Water Quality" - Its objective is to protect human health from adverse effects of any contamination of water intended for human consumption, by ensuring that it is wholesome and clean. Regulates several issues related to testing of drinking water and protection zones around the water well or community ground water deposit. The regulation determines three protection zones (buffer zones) around ground water wells or water deposit places on the ground. The immediate zone of protection ranges from 15 to 100 m from the axis of the well or the deposit. The precise distance is determined based on the evaluation of the geological formations by the hydrogeological expert. The second and third buffer zones surround the first one. For these zones the regulation does not set out any distance criteria, but restricts the activities that can impact the water quality such as disposal or burial of waste, mining, etc. | The standard set by this regulation (immediate zone of protection) has been considered in the EIA and appropriate mitigation measures have been proposed. |
| Air | | |
| Law No. 162 (04.12.2014 enforced by the January 2018) | "On protection of ambient air quality", fully transpose Directive 2008/50/EC on ambient air quality and cleaner air for Europe, as well as Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air. This Law entered in force in 1st of January 2018 and provides the institutional framework, regulations, roles and penalties to ensure compliance. The law stipulates that natural and legal persons, public or private, native or foreign, have a duty to keep the air clean and protect it from pollution caused by the activities they conduct in the territory of the Republic of Albania. | Mitigation measures to limit the impact of project activities have been proposed in the EIA. |
| Vehicle Emissions | | |
| Guideline No. 6527 (24.12.2004) | Minister of Environment and Minister of Transport "Over the permissible values of the elements of air pollutants from the environment and noise emissions caused through road vehicles and methods to | Certificate of technical compliance is issued by SGS-Albania[7] and it is mandatory for all vehicles registered in Albania (with Albanian license plate). Compliance with this guideline has |

6 Based on Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption) concerns the quality of water intended for human consumption.

7 https://www.automotivealbania.sgs.com

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| | control them" amended by Guideline No. 12, dated 15.6.2010 "On amendments and addenda to Guidelines No 6527, of 24.12.2004 accompanied by the Manual of Vehicles Control. | been considered in the development of mitigation measures of the EIA. |
| Transport, vehicle and equipment emissions | | |
| Order of Minister of Transport and Infrastructure No. 149 (07.04.2014) | "On the approval of the rules on implementing the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organizations", fully aligned with the EU Regulation No 748/2012 of 3 August 2012, laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organizations. | Compliance with this order has been considered in the development of mitigation measures of the EIA. |
| Instruction No.6527 (24.12.2004) | "On allowed vehicle air emission, noise generation levels, and control methods "amended - This instruction includes requirements for annual vehicle inspections and allowed air emissions. All vehicles must comply with these norms. | Heavy machinery, 4-wheel drive vehicles and pick-up trucks will be used for the construction of the Project. The Certificate of technical compliance is issued by SGS Albania and it is mandatory for all vehicles registered in Albania (with Albanian licence plate). Compliance with this instruction has been considered in the development of mitigation measures of the EIA. |
| DCM No.613 (07.9.2011) | "Approval of the technical rules for the assessment of the noise conformity for the equipment installed in open spaces or environment". Set noise release norms for certain equipment generating noise, such as electricity generators, tractors, compressors, etc. The regulation lists set thresholds. | Heavy machinery will be used for the construction of the Project. Compliance with this decision has been considered in the development of mitigation measures of the EIA. |
| Guidance No.10 (30.5.2015) | "Relating to the type-approval of agricultural or forestry tractors, their trailers and interchangeable towed machinery, together with their systems, components and separate technical units" based on EU Directive 2003/37/EC dated 26.5.2003. | Compliance with this guidance has been considered as mitigation and recommendation measures at the EIA report. |
| Noise | | |
| Law No. 9774, dated 12.07.2007, amended by Law No. 39/2013 | "On the assessment and administration of ambient noise" – defines the requirements for environmental protection from noise, how to avoid and prevent, reduce and eliminate the harmful effects of exposure to them, including inconvenience from noise. This Law aims to protect human health and the environment from adverse effects caused by noise emissions and sets general rules, authorities, inspection etc. | Heavy machinery and trucks will be used during the construction of the Project. It is important for the EIA process, to operate with noise generating machinery during daytime hours. Compliance with this law will be considered as a relevant document for suggesting mitigation and management measures within the scope of the EIA process. |
| DCM No. 587, dated 07.07.2010 | "On monitoring and control of noise levels in urban and touristic areas" – sets the rules and regulations on the protection from | Compliance with this law will be considered as a relevant document for suggesting mitigation and |

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| | noise generation and noise level administration in urban and touristic areas. | management measures within the scope of the EIA process. |
| DCM No. 1063 (23.12.2015) | "On the Approval of the technical rules for the assessment of the noise conformity for the equipment installed in open spaces or environment" sets the noise release norms for certain equipment's generation noise such as electricity generators, tractors, compressors etc. The regulation lists set thresholds (mainly power capacity - kW). | Compliance with this decision has been considered in the development of mitigation measures of the EIA. Application of these rules needs to be ensured from sub-contractor based on list of equipment and vehicles that will be employed for operations. |
| Guideline No. 6527/2004 | The guideline regulates vehicle noise generation levels and control methods. This includes requirements for the annual vehicle inspections and to comply with predetermined norms. The compliance of these norms shall be verified with certification of control issued from SGS-Albania[8]. | Compliance with this guideline has been considered in the development of mitigation measures of the EIA. Application of these rules needs to be ensured from sub-contractors, based on the list of equipment and vehicles that will be employed for operations. |
| Instruction No.8 (27.11.2007) | Ministry of Environment and Ministry of Health on "Noise levels in different media", sets the numerical values of noise in specific zones and aims to ensure adequate noise exposure protection for human health. | Compliance with this instruction has been considered in the development of mitigation measures of the EIA. |
| Instruction No.6527 (24.12.2004) | "On allowed vehicle air emission, noise generation levels, and control methods" amended - This includes requirements for annual vehicle inspections and allowed air emissions. All vehicles must comply with these norms. | Compliance with this instruction has been considered in the development of mitigation measures of the EIA. |
| Fuel Quality | | |
| DCM No. 147 (21.03.2007) | "On the quality of petrol and diesel fuels". | Only fuel available in Albania that is in compliance with this decision will be used. |
| DCM No.781 (14.11.2012) | "On the quality of certain liquid fuels for thermal, civil, industrial and water transport use (sea, river and lake)". | Only fuel available in Albania that is in compliance with this decision will be used. |
| Waste | | |
| Law No.10463 (22.09.2011) amended | "On the integrated waste management" (as amended) - aims to protect human health and the environment, and to ensure environmental sound management of waste through integrated management. | Both hazardous and non-hazardous wastes will be generated principally only during the construction of the Project. Waste management has been considered in the development of mitigation measures and will be addressed in the Environmental Management and Monitoring Plan (EMMP) |
| DMC No.99 (18.02.2005) amended | "Albanian waste catalogue" (as amended) - which makes the classification of the waste, based on industry types, and the criteria to assess the hazardousness of the waste. The regulation codifies the waste types based on the European Waste Catalogue. | This Law has been considered in the classification of the wastes to be generated during the construction and operation of the Project. |
| DCM No. 229 | "On the approval of the rules for non-hazardous waste transfer and the data to | Non-hazardous wastes generated during the construction of the Project |

[8] https://www.automotivealbania.sgs.com

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| (23.04.2014) | register in the transferring document" - The newly enforced regulation requires transferring the waste at licensed companies and ensuring final disposal in approved facilities. This act requires documenting the waste transfers and providing the final disposal certificate to the NEA. The regulation requires for all waste generating companies to be registered at NEA and obtain a personal waste generation number. | will be transferred and disposed of in accordance with this directive. |
| DCM No. 371 (11.06.2014) | "On the approval of the rules for transferring the hazardous waste and the data to register in the transferring document" - The newly enforced regulation requires transferring the waste at the licensed company and ensuring final disposal in approved facilities. This act requires documenting the waste transfer and delivering the final disposal certificate at the NEA. The regulation requires for all waste generating companies to be registered at NEA and obtain a personal waste generation number. | Hazardous wastes will be considered within the scope of the ESIA process. A personal waste generation number with be registered to the NEA in compliance with Albanian law requirements. |
| Wastewater | | |
| Law No. 9115/2003 (24/07/2003) | "On the Treatment of polluted water" provides regulations that state the need for treatment of polluted water before it is discharged. Article 6 sets the obligations of physical and legal entities that discharge polluted waters. Physical and legal entities, the activity of which discharges polluted waters, are obligated to take measures to: a) Continuously reduce the amount of used waters they discharge in the receiving environment; b) reduce the degree of pollution in discharged waters, especially such pollution as caused by hazardous substances and waste; c) manage and treat polluted waters. To comply with these obligations, the physical and legal entities whose activities discharge polluted waters must design a program of technical, technological and organizational measures. This program is subject to control by the Environmental Inspectorate, the licensing authority and the local government structures | Compliance with this law has been considered in the development of mitigation measures of the EIA. |

### 3.2.5. Health and Safety Framework

Law No. 10237/2010 "On safety and health at work" ensures the security and protection of health through prevention of professional risks, eliminating the factors that constitute risk and accidents, inform, advice, balanced participation, in accordance with the law. The present law applies the following:

- The Directive of the European Council 89/391/EEC, dated 12 July 1989 "On the introduction of measures to encourage improvements in the safety and health of workers at work";

- The Directive of the European Council 94/33 EEC, dated 22 July 1994 "On the protection of young people at work," article 6; and
- The Directive of the European Council 92/85 EEC "On the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding".

Albanian legislation on health and safety and the relevance to the project are presented in the Table 9.

**Table 9. Legislation for health and safety**

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| Law No. 10237/2010 (18/02/2010) | "On Safety and Health at Work" - This law regulates the framework of health and safety in the workplace and determines the roles of each party subject to the law. | The project will comply with this law to ensure the health and safety of its workers. Specific measures will be included in the mitigation plan. |
| Law No. 9863/2008 | The State Sanitary Inspectorate aims to protect workers from the impacts of adverse working conditions, such as exposure to toxic substances, radiation, unworkable noise, vibrations, unfavourable microclimate, and controls the level of occupational diseases and accidents as a result of adverse conditions. | The project will comply with this law to protect the health safety of its workers. Specific measures will be included in the mitigation plan. |
| Law No. 9863/2008 (28/01/2008) | "On food" specifies the rules of food safety in Albania | The project needs to ensure the safety of food consumed by its workers. Specific measures will be included in the mitigation plan. |
| Law No. 10433/2011 (16/06/2011) | "On Inspection in the Republic of Albania" | The project is subject to inspections for adherence to health and safety regulations. |
| DCM No. 562/2013 (3/07/2013) | Decision of the Council of Ministers concerning the approval of the regulation on minimum safety and health requirements for the workplace. | The project/ employer needs to ensure the safety of its workers in the work place. A specific set of rules are to be drafted in the Safety Regulation of the Employer. Specific measures will be included in the mitigation plan. |
| DCM No. 312/2010 (5/5/2010) | "On safety in site construction" sets the rules of safety for construction activities. | The installation of worker facilities needs to comply with the rules of this decision. Specific measures will be included in the mitigation plan. |
| DCM No. 410/2015 (13/05/2015) | "On the establishment, organization and operation of technical and industrial state inspectorate". This act regulates the inspection of the installations related with industrial processes in Albania. | The project may be the subject of several inspections as regulated in Albanian legislation and standards. Compliance with these rules is to be ensured by the Sub-contractor for power plant operations. An initial screening of equipment that will be used, and communication with the appropriate inspectorate, is required in order to determine any obligation before starting the field operations of importing the equipment. |
| Decision No. 692/2001 (13/12/2001) | "On special measures on safety and health protection at work" | The project will comply with this law to protect the health safety of its workers. Specific measures will be included in the mitigation plan. |

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| DCM No. 842/2014 (3/12/2014) | "For the health safety and protection of the employee from noise risks in the working places" requires the employer to assess the noise levels at the working place and ensure the protection of its workers | Specific measures will be included in the mitigation plan. |

### 3.2.6. Other Relevant National Legislation

Other Albanian legislation of relevance to the project is highlighted in Table 10.

**Table 10. Other Relevant national legislation**

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| Land Use and territory planning | | |
| Law No. 107/2014 | "On Territory Planning and Development" - The law aims to integrate the urban planning legislative framework into a single law, and includes the concept of the protection of natural and cultural heritage, and community's health and safety for territory planning. | The law and its by-laws require declaration for any construction. The protection of natural and cultural heritage, and community's health and safety will be included in the EIA mitigation measures. |
| DCM No. 408 (13.5.2015 amended by DCM 231/2017) | The regulation for territorial development. | This regulation specifies the type of installations that require a construction permit. A preliminary clearance should be sought for construction facilities.<br>The installations of mobile structures require a preliminary clearance (or declaration of works) issued by the municipality. |
| Law No. 9244/2004 | "On Agricultural Land Protection" determines the protection status of given agricultural fields. | The project is obliged to inform the local authority of any damage to agricultural land from the operations. The authority assesses the damage and requires that the land user restore any damage in agricultural land. Mitigation measures will be proposed. |
| Law No. 8752/2001 (26/03/2001 amended several times) | "On the establishment and functioning of the structures for land administration and protection", amended by Law No. 10257/2010 regulates land uses issues, and their compatibility with Regional Planning. | The land administration department of each municipality is responsible for land management and leasing of state-owned land. This authority will be responsible for the coordination of the implementation procedures and execution of the compensation during the project implementation. |
| Explosive and detonating substances | | |
| Decision No. 467/2011 (29/06/2011 ) | This decision defines procedures for issuing import, export, and production licenses for civilian use of explosive material. The governing institution is the Ministry of Defence, which is responsible for issuing the licenses. Upon evaluation by the licensing committee of the Ministry of Defence, an import license is issued for a period of one year, subject to renewal. | The contractor will be responsible for abiding by all the requirements of this decision for any explosives required for the construction of the Project. |
| Decision No. 533/2005 (07/08/ | This decision defines the procedures for issuing import, export, and production | The project needs to comply with the explosive importation rules. The application for explosives importation |

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| 2005) amended by 467/2011 | licenses for civilian use of explosive material. | and the required documentation is to be submitted to the Ministry of Defence. |

### 3.2.6.1. Albanian Legislation for the Energy Sector

**Table 11. Albanian Legislation on the Energy Sector**

| Legislation | Overview | Relevance to the Project |
|---|---|---|
| Law No. 125/2013 dates 25/04/2013 amended by 88/2014 | For concessions and private public partnership. The purpose of this law is to create a favourable and sustainable framework for promoting, absorbing and creating facilities for investments that are realized as private public concessions / partnerships. | Article 4 of the law requires the Operator of the concessions Agreement to comply with environmental legislation during the implementation of its operations.<br>The Project will comply with national and international environmental standards. |

## 3.2.7. International Conventions and Agreements

Albania is signatory to a number of international agreements relevant to the Project as listed in Table 12.

**Table 12. International Conventions and agreements signed/ratified Albania**

| Convention/Agreement | Overview | Relevance to the Project |
|---|---|---|
| General | | |
| Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (1998)<br>Ratified- 26/10/2000 | The Convention establishes a number of rights to the public, with regard to the environment; including access to environmental information; public participation in environmental decision-making and access to justice[9]. | Arrangements are to be made by public authorities to enable the public potentially affected by the project and environmental NGOs, to comment on proposals for projects affecting the environment, or plans and programmes relating to the environment. The comments received are to be taken into consideration in decision-making, and information to be provided on the final decisions and the reasons for it. |
| Climate Change | | |
| UN Framework Convention on Climate Change (UNFCCC) (1992) entered into force in 1994<br>Ratified- 01/01/1994 | The UN Framework Convention on Climate Change (UNFCCC) has been crucial in addressing climate change and the need for a reduction of emissions of greenhouse gases. The ultimate objective of the Convention is to stabilize greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous | As Albania is signatory to the convention, every effort should be made to limit GHGs, and as this Project is a renewable energy project meets this requirement. |

[9] http://ec.europa.eu/environment/aarhus/index.htm

| Convention/Agreement | Overview | Relevance to the Project |
|---|---|---|
| | human interference with the climate system. | |
| Paris Agreement at the COP21 in Paris on 12 December 2015, entered into force on 4 November 2016<br>Ratified- 21/09/2016 | The Paris Agreement builds on the Climate Change Convention to combat climate change[10]. | The Project is a renewable energy project and therefore in general fulfils this requirement. |
| Kyoto Protocol<br>Ratified- 01/04/2005 | The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change; signatories commit to setting internationally binding emission reduction targets[11]. | The Project is a renewable energy project and therefore in general fulfils this requirement. |
| Water | | |
| Convention on the Protection and Use of Trans boundary Watercourses and International Lakes (1992)<br>Ratified- 05/01/1994 | Avoid or minimize adverse effects on water resources and water quality | The study area is situated near Adriatic Sea. |
| Biodiversity | | |
| Convention on Biological Diversity (CBD) (1992)<br>Ratified- 05/04/1994 | Avoid or minimize adverse effects on important habitats and species, internationally and naturally designated nature conservation sites; conservation, sustainable and equitable use of biodiversity. | The Convention requires, under Principle 17, that EIA shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority. |
| Convention on the Protection of Wild Flora and Fauna and Natural Habitats in Europe (Bern Convention) (1976)<br>Ratified- 02/03/1998 | The Convention aims to ensure conservation of wild flora and fauna species and their habitats. Special attention is given to endangered and vulnerable species, including endangered and vulnerable migratory species[12]; to avoid or minimize adverse effects upon important habitats and species, internationally and naturally designated nature conservation sites. | There are IUCN protected areas within the Study area including Category 1a (Strict Nature Reserve), Category II (National Park), Category III (Natural Monument) and Category IV (Species Management Area. |
| Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (1979)<br>Ratified- 01/09/2001 | Avoid or minimize adverse effects upon migratory species | The Project Area includes protected sites that may contain globally vulnerable species of birds as well as migratory birds. There are specific resolutions and instruments such as species action plans under this convention that apply to Albania. |

10 http://unfccc.int/files/paris_agreement/application/pdf/qa_paris_agreement_entry_into_force.pdf
11 https://unfccc.int/resource/docs/convkp/kpeng.pdf
12 https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/104

| Convention/Agreement | Overview | Relevance to the Project |
|---|---|---|
| Agreement on the Conservation of African-Eurasian Migratory Water birds (1995)<br>Ratified- 01/09/2001 | African-Eurasian Migratory Water birds Agreement (AEWA) covers 254 species of birds ecologically dependent on wetlands for at least part of their annual cycle. All AEWA species cross international boundaries during their migrations and require good quality habitat for breeding as well as a network of suitable sites to support their annual journeys[13]. Avoid or minimize adverse effects upon migratory water bird species. | Species and habitats protected by this agreement may be present in the study area. Mitigation measures for the protection of flora and fauna will be identified in the ESIA. |
| Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1975)<br>Ratified- 27/06/2003 | CITES is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival[14]. | Threatened and endangered species and their habitats along with mitigation measures for the protection of flora and fauna will be identified in the ESIA. |
| Cultural Heritage | | |
| Convention on the Protection of the World Cultural and Natural Heritage (1989)<br>Ratified- 10/07/1989 | Avoid adverse effects upon Albanian and World Cultural Heritage sites; minimize adverse effects on unknown and intangible cultural heritage sites, material assets and another infrastructure. | Cultural and natural heritage sites along with mitigation measures for their will be identified in the ESIA. |
| Labour | | |
| ILO Convention 29 Forced Labour Convention (1930) and ILO 105 Abolition of Forced Labour Convention (1957))<br>Ratified- 25/06/1957 & 27/02/1997 | Its object and purpose are to suppress the use of forced labour in all its forms, irrespective of the nature of the work or the sector of activity in which it may be performed. | Local workers will be employed on the project. The project will adopt monitoring measures to ensure compliance with the convention. |
| ILO Convention 87 Freedom of Association and Protection of the Right to Organize (1948)<br>Ratified- 03/06/1957 | Protects the rights of workers and employers to “join organizations of their own choosing without previous authorization. | Local workers will be employed on the project. The project will adopt monitoring measures to ensure compliance with the convention. |
| ILO Convention 98 Right to Organize and Collective Bargaining<br>Ratified- 03/06/1957 | The convention provides for workers to be able to join unions and engage in collective bargaining. | Local workers will be employed on the project. The project will adopt monitoring measures to ensure compliance with the convention. |
| ILO Convention 100 Equal Remuneration Convention (1951)<br>Ratified- 03/06/1957 | Each Member shall, by means appropriate to the methods in operation for determining rates of remuneration, promote and, in so far as is consistent with such methods, ensure the application to all workers of the principle of equal remuneration | Local workers will be employed on the project. The project will adopt monitoring measures to ensure compliance with the convention. |

[13] https://www.cms.int/en/legalinstrument/aewa
[14] https://www.cites.org/eng/disc/what.php

| Convention/Agreement | Overview | Relevance to the Project |
|---|---|---|
| | for men and women workers for work of equal value. | |

#### 3.2.7.1. WHO Guidelines

Relevant WHO guidelines that will be considered within the ESIA Report include:

- WHO Guidelines for Community Noise (1999);
- WHO Air Quality Guidelines (2005);
- WHO Guidelines for Drinking Water Quality (2011).

#### 3.2.7.2. International Union for the Conservation of Nature

The IUCN Red List of Threatened Species is one of the most well-known objective assessment systems for classifying the status of plants, animals, and other organisms threatened with extinction. It contains explicit criteria and categories to classify the conservation status of individual species on the basis of their probability of extinction. The IUCN Red List (2017) for Albania is utilized for the descriptions of flora and fauna within the Study Area.

## 3.3. EBRD Requirements

The European Bank for Reconstruction and Development (EBRD) is committed to promoting "environmentally sound and sustainable development" in the full range of its activities. The Bank recognises that environmental and social sustainability is a fundamental aspect of achieving outcomes consistent with its mandate.

The Environmental and Social Policy (2019) is the key document that guides the EBRD's commitment to promoting "environmentally sound and sustainable development" in the full range of its investment and technical cooperation activities. It sets out the ways in which they implement this commitment in practice and on projects.

To enable clients and their Projects achieve their E&S Policy requirements, EBRD has defined specific Performance Requirements (PRs) within the E&S Policy for key areas of environmental and social sustainability. EBRD has adopted ten PRs, which are consistent with and mirror the overall structure, approach and issue coverage of the IFC's 2012 Performance Standards while specifically requiring projects to meet EU environmental standards.

### 3.3.1. EBRD E&S Performance Requirements

EBRD has adopted a comprehensive set of specific PRs for key areas of environmental and social sustainability that projects are required to meet. Central to the PRs is the application of the mitigation hierarchy and good international practice. As the Project will involve funding from EBRD, in addition to compliance with the Republic of Albania legal requirements, the Project will also need to meet the following specific PRs defined in EBRD's E&S Policy:

- PR1 - Assessment and Management of Environmental and Social Impacts and Issues;
- PR2 - Labour and Working condition;
- PR3 - Resource Efficiency and Pollution Prevention and Control;
- PR4 - Health and Safety;
- PR5 - Land Acquisition, Involuntary Resettlement and Economic Displacement;
- PR6 - Conservation and Sustainable Management of Living Natural Resources;
- PR7 - Indigenous Peoples;
- PR8 - Cultural Heritage;
- PR9 - Financial Intermediaries;
- PR10 - Information Disclosure and Stakeholder Engagement.

### 3.3.2. EU EIA Legislation

The EBRD is committed to promoting the European Union's (EU) environmental requirements and is a signatory of the European Principles for the Environment. EU Directives relevant to this Project are outlined below.
The EIA was introduced for the first time in Europe in 1985 by the EIA Directive (85/337/EEC) and represents a key instrument for EU environmental policy. The EIA Directive as amended by Directive 2014/52/EU requires that Member States adopt all measures necessary to ensure that projects likely to have significant effects on the environment are subject to a requirement for development consent and assessment of their environmental effects.
The Project is located in Albania, which is not an EU Member State, and therefore the EU EIA Directive 2014/52/EU is not applicable through law in Albania; although Albanian Law No.10431 (09.06.2011) "On Environmental Protection" aims to mirror EU EIA Directives. Furthermore, EBRD as a signatory requires a review against EU requirements and as the Project has been defined as a Category A Project by EBRD the ESIA will be drafted in line with these requirements.
EU EIA Annex I Projects are considered as having significant effects on the environment and require a mandatory full EIA in the EU. For Annex II projects, an EIA is not compulsory, but the national authorities have to decide whether an EIA is needed. This is done by the "screening procedure", which determines the effects of projects on the basis of thresholds/criteria or a case-by-case examination.
The Project requires development of the following:

- Construction of PV of photovoltaic plant;
- Construction of proximally 2 km 110 kV overhead transmission line (OHL).

Based on the above the Project is not considered to fall under the definition of projects listed on Annex I of the EIA Directive but is covered under the following Annex II activities for 'Energy Industry':

- Industrial installations for the production of electricity, steam and hot water (projects not included in Annex I);
- Industrial installations for holding gas, steam or hot water; high-power cable transmission (projects not included in Annex I)

### 3.3.3. World Bank Group Environmental and Social Framework

Since October 1, 2018, the World Bank has been applying the Environmental and Social Framework (ESF) to all new investments of project financing. The ESF sets out the World Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social Standards that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity.
The ten Environmental and Social Standards establish the standards that the Borrower and the project will meet through the project life cycle, as follows:

- **Environmental and Social Standard 1:** Assessment and Management of Environmental and Social Risks and Impacts;
- **Environmental and Social Standard 2:** Labour and Working Conditions;
- **Environmental and Social Standard 3:** Resource Efficiency and Pollution Prevention and Management;
- **Environmental and Social Standard 4:** Community Health and Safety;
- **Environmental and Social Standard 5:** Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
- **Environmental and Social Standard 6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- **Environmental and Social Standard 7:** Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities;
- **Environmental and Social Standard 8:** Cultural Heritage;
- **Environmental and Social Standard 9:** Financial Intermediaries; and

- **Environmental and Social Standard 10:** Stakeholder Engagement and Information Disclosure.

### 3.3.4. The IFC Performance Standards

The IFC applies Performance Standards to manage social and environmental risks and impacts and to enhance development opportunities in the private sector. The Performance Standards may be applied by other financial institutions electing to apply them to projects in emerging markets. Together, the eight Performance Standards establish standards that a project is to meet throughout the life of an investment by IFC or other relevant financial institutions. Based on IFC Performance Standards on Environmental and Social Sustainability, approved January 1, 2012, these performance standards are;

- **Performance Standard 1:** Assessment and Management of Environmental and Social Risks and Impacts;[15]
- **Performance Standard 2:** Labour and Working Conditions;
- **Performance Standard 3:** Resource Efficiency and Pollution Prevention;
- **Performance Standard 4:** Community Health, Safety and Security;
- **Performance Standard 5:** Land Acquisition and Involuntary Resettlement;
- **Performance Standard 6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources;[16]
- **Performance Standard 7:** Indigenous Peoples;
- **Performance Standard 8:** Cultural Heritage.

With respect to the Albanian requirements for the ESIA, the application of IFC Standards requires the following additional processes:

- **Focus on Scoping Phase**: a process by which stakeholders are consulted to contribute to the identification of key issues to be investigated as part of the ESIA. This ESIA Report was prepared in line with this requirement.
- **Stakeholder Engagement Plan**: a comprehensive approach to the communication and consultation with the identified stakeholders throughout the whole project lifecycle.
- **Focus on Social Issues**: whereas the Albanian legislation mainly refers to environmental impacts, the IFC approach also focuses on the identification of impacts on the affected communities and subsequent definition of necessary mitigation measures.

### 3.3.5. IFC Environmental, Social and Stakeholder Engagement Guidelines

This ESIA Report was prepared in line with best practices put forward in the IFC guidelines and in particular:

- 2007 Systems EHS Guidelines for Electric Power Transmission and Distribution;
- 2007 Environmental, Health and Safety Guidelines;
- 2007 Stakeholder Engagement Handbook;
- 2009 Good Practice Note Addressing Grievances from Project-Affected Communities
- 2009 Handbook for Addressing Project-Induced In-Migration;
- 2009 Introduction to Health Impact Assessment.

[15] Updated June 2021 / https://www.ifc.org/wps/wcm/connect/6df1de8f-2a00-4d11-a07c-c09b038f947b/GN1_English_06142021_FINAL.pdf?MOD=AJPERES&CVID=nF3z-gq

[16] Updated June 2019 / https://www.ifc.org/wps/wcm/connect/5e0f3c0c-0aa4-4290-a0f8-4490b61de245/GN6_English_June-27-2019.pdf?MOD=AJPERES&CVID=mRQjZva

- 2016 Environmental, Health and Safety Guidelines; Industry Sector Guidelines[17]
- 2018 Environmental, Health, and Safety Approaches for Hydropower Projects

[17] Update 2016 / https://www.ifc.org/wps/wcm/connect/377bfe12-a3c0-433f-a5e3-c51dbebe38d4/SectorSpecificEHSGuidelines_Applicability.pdf?MOD=AJPERES&CVID=lakafE1

# 4. ENVIRONMENTAL & SOCIAL CONTEXT/BASELINE

## 4.1. Physical Environment

### 4.1.1. Topography and Natural Hazards

The Project area is part of the coastal lowland and represented by alluvial and saline soils along the coast, with low agricultural capacity.

Due to the location and flat topography, the area may be prone to flooding. In fact, repeated flood events have been reported in area in recent years. This issue, although considered manageable, should be subject to further investigation. Area is rated High in relation to the risk of flooding referred to WHO E-atlas of disaster risks in the Europe Region.[18]

The PDA have high seismic activity due to an active longitudinal tectonic fault that separates Durrës anticline and Spitalla syncline. Durrës lies in an area of known high seismicity, where a considerable number of earthquakes have been recorded over the years. Based on seismological data, the Durrës area is considered the centre of seismic activity in Albania.

Based on the above, it is necessary to define standardized criteria for the construction of supporting structures of photovoltaic panels (profiles) which must be calculated based on the norms (EUROCODE) for a possible seismicity activity of 7.5-8 points of the Merkali scale, according to the seismic micro-zoom map, compiled by Albanian Institute of Seismic Studies.

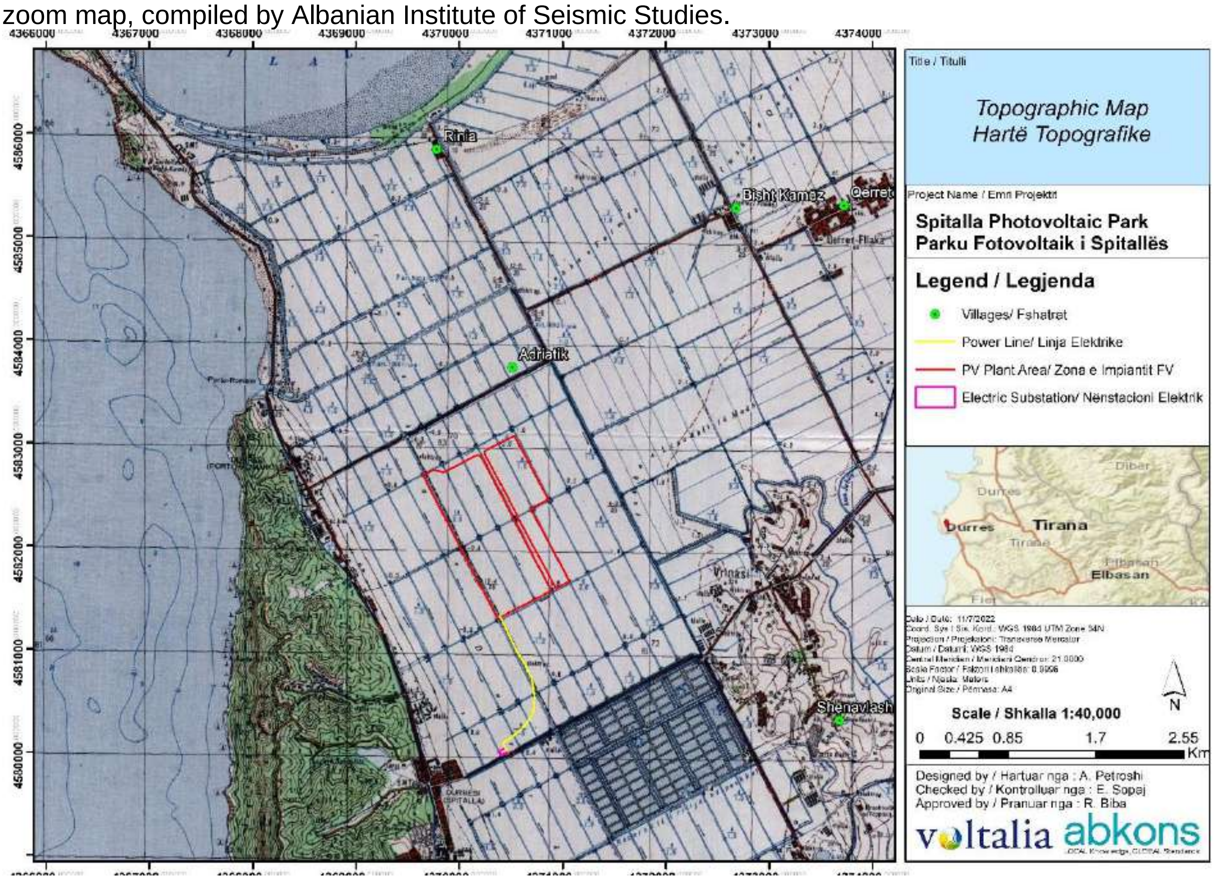



**Figure 8. Topographic map of the area and trace of the proposed project**

#### 4.1.1.1. Geographical position and geographical features of the area

The city of Durrës is a coastal town and lies to the west of the country. This city is one of the most important urban and economic centres of the country. The urban area based on the multiple use of territory, has gained important functions and intensive use of territory, becoming one of the most

[18] Volume 1. Exposure to natural hazards. Version 2.0, Copenhagen: WHO Regional Officer for Europe; 2011"

developed regions in the country. Durrësi is one of the most important nodes of transport in the country. Through this city, the most important national and international road axes and maritime links pass such as: East-West Corridor (262 km), part of the pan-European Corridor VIII, North-South Corridor, 405 km (Hani i Hoti-Tirana-Durrës, Vlora, Saranda- Greece / Durrës Gjirokastra-Kakavija / Durrës- Greece), and Durrës-Kukës-Morine (180 km), connecting the country with Kosovo.
In the city of Durrës Port of Durrës is situated, the most important node of maritime transport in the country. The port of Durrës is also the main line of Corridor VIII and one of the most important of gas and oil lines of Adriatic-Black Sea itineraries. The area outside the city or suburbs includes 8 and 15 quarters (in the north), 13 and 14 quarters (part of region 6). Part of it, is industrial city and Porto Romano (with Energy Park in the north) and the coastal part (court 13).
Porto Romano area lies:

- North of Durrës and 7 km from its centre and port.
- 9 km from the highway linking Tirana with Durrës.

Porto Romano is bordered to the north by Bisht Palla, to the south by Durrës city, to the east by Shën Vlash and Rrashbull hills and to the west by the Adriatic Sea. Porto Romano is about 2.2 km of coastline[19]. Attractive and recreation landscape created by capes and rocky peninsulas, and hilly forest systems valued as important assets for natural and cultural tourism. One important natural and ecological resource is the Adriatic Sea which is an interesting ecosystem.

### 4.1.2. Climatic conditions

The city of Durrës is characterized by a Mediterranean climate (hot and dry summers and wet and cold winters). The average annual temperature in Durrës is 16.1˚C. During the summer months the temperature varies from 23.6 ˚C to 26 ˚C, while the average temperature in winter is around 8.9 ˚C. June, July and August are the hottest and driest months while January is considered to be the coldest month. The maximum temperature ranges from 39-40 ˚C.
Climate formation is influenced by a number of regional and local factors. Local factors are related to the relief. The most active factor in the climate of Durrës is the influence of the sea through the circulation of the air masses of the Atlantic and the Mediterranean. Local factors include human activity, which in Durrës has been expressed by interventions in natural conditions.

**Table 13. Average temperatures during the year[20]**

| Month | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Temp. Max. (˚C) | 11 | 12 | 15 | 18 | 23 | 28 | 30 | 30 | 26 | 22 | 17 | 12 | 20.3 |
| Temp. Min. (˚C) | 4 | 5 | 8 | 11 | 15 | 19 | 21 | 21 | 17 | 14 | 10 | 6 | 12.6 |

The average rainfall is 985 mm / year, most of which falls during the October-February period (about 70%). The smallest annual rainfall for the same period is 640 mm and the maximum 1550 mm.

**Table 14. Average rainfall during the year [21]**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | year Σ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Prec.(mm) | 91 | 103 | 99 | 83 | 63 | 50 | 31 | 43 | 118 | 80 | 146 | 140 | 1.047 |

#### 4.1.2.1. Wind

During the summer period, the wind is usually mild in the Adriatic area, with an average strength 2 to 3 on the Beaufort scale. During the winter wind is stronger. The average wind strength is approximately equal to 4. The data on wind direction are presented in Table 15 . A meteorological station is located directly in the port area of Durrës. It should be mentioned that this station is protected from winds blowing from the east and northeast and this indicates that there will be low wind frequencies from these directions.

**Table 15. Wind direction (blowing from) and frequency (Durrës Port station)**

| Wind direction | Calmness | N | NE | E | SE | S | SW | W | NW |
|---|---|---|---|---|---|---|---|---|---|

[19] Directory of Statistic, Durrës Prefecture.
[20] Institute of GeoSciences, Energy, Water and Environment
[21] Institute of GeoSciences, Energy, Water and Environment

| Frequency % | 6.2 | 27.3 | 4.3 | 3.8 | 21.9 | 7.6 | 6.6 | 13.3 | 8.5 |
|---|---|---|---|---|---|---|---|---|---|

According to Institute of Geosciences, Energy, Water and Environment the main wind direction is North. However, the strongest wind comes from the south and south-east direction.

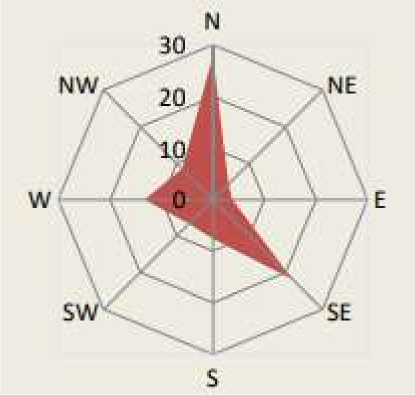



**Figure 9. Wind Rose**

As we can see from this table below, the average wind speed per month ranges from 3.1 to 4.8 m/s. The highest speed observed was 40 m/s. The table shows the wind speed frequency. During a calendar year, in just 20 days the winds are stronger than 15 m/s. The main directions of these strong winds are South and South-west.

**Table 16. Wind direction during the year**

| Month | Direction | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Nord | Nord-East | East | South-East | South | South-West | West | Nord-West |
| January | 3.6 | 2.6 | 3.5 | 4.9 | 7.5 | 6.1 | 4.4 | 2.1 |
| February | 4.5 | 2.6 | 2.8 | 4.3 | 7.1 | 7.2 | 5.5 | 3.6 |
| March | 3.4 | 2.5 | 3.3 | 4.4 | 7.6 | 6.7 | 4.2 | 3.6 |
| April | 2.8 | 2.5 | 2.7 | 3.9 | 7.0 | 6.1 | 4.8 | 3.5 |
| May | 2.5 | 1.9 | 1.8 | 3.1 | 6.3 | 4.6 | 4.6 | 3.9 |
| June | 2.4 | 2.0 | 1.6 | 2.7 | 5.1 | 4.8 | 4.8 | 3.5 |
| July | 2.3 | 1.4 | 1.5 | 2.6 | 3.6 | 4.8 | 4.9 | 4.4 |
| August | 2.1 | 1.7 | 1.8 | 2.9 | 4.5 | 4.8 | 4.9 | 4.1 |
| September | 2.6 | 1.9 | 2.3 | 3.2 | 5.8 | 4.7 | 4.6 | 3.8 |
| October | 2.7 | 2.2 | 3.6 | 3.7 | 6.0 | 6.0 | 3.6 | 3.2 |
| November | 2.9 | 2.2 | 2.9 | 4.9 | 6.9 | 6.9 | 4.9 | 2.7 |
| December | 3.3 | 2.9 | 3.7 | 5.3 | 9.1 | 7.7 | 6.2 | 1.9 |

### 4.1.3. Air Quality

The main factors that cause air pollution and affect air quality are vehicles and the amount of traffic in general; industrial activity; heating equipment in buildings.
The main contributors to air pollution come from the transport sector, which remains one of the main sources of urban air pollution. This is related to the large number of vehicles that do not meet the standards of air emissions, the quality of fuel they use, the year of their production, as well as the use of motor vehicles without a catalytic converter favouring the increase of dust content and emissions. Also, the lack of green areas and the indiscriminate implementation of constructions impact air quality, especially the discharge of dust.

NEA conducts continuous monitoring of air pollutants $PM_{10}$, $PM_{2.5}$, $NO_2$, $SO_2$, $O_3$, CO and BTEX, at the station in the city of Durrës. The monitoring station in the city of Durrës is 800 m from the port of Durrës. Urban air quality monitoring in Durrës is carried out with fixed automatic stations.

The monitoring values for 2017, 2019, 2020 are as follows:

**Table 17. Average annual values of air indicators for 2017, 2019,2020 (μg / m³)**

| Year | Location | $PM_{10}$ | $PM_{2.5}$ | $NO_2$ | $SO_2$ | $O_3$ | CO | Benzene |
|---|---|---|---|---|---|---|---|---|
| 2017 | Durrës | 24.45 | 13.01 | 24.42 | 3.94 | 50.16 | 0.57 | 1.39 |
| 2019 | Durrës | 24.03 | 12.33 | 15.64 | 9.72 | 0 | 0.87 | 0.88 |
| 2020 | Durrës (School “Jusuf Puka”) | 29.15 | 17.56 | 21.86 | 17 | 50 | 1 | 2.3 |

Existing air quality conditions in the Project area have been identified using the European Environmental Agency (EEA) Air quality Database (AirBase)[22]. According to the data available from the EEA AirBase, the NOx annual average concentration is estimated to be 20-30 μg/m³ and $SO_2$ annual average concentrations are estimated to be 5-20 μg/m³; which lies within national and EU air quality standards.

| IProject Area Values | Albanian law according to DCM No. 248, dated 24.04.2003 "On the Approval of Temporary Air Emission Norms and their Implementation" | Directive 2008/50/EC on ambient air quality and cleaner Air for Europe, |
|---|---|---|
| | $CO_{(24\text{-hour})}$ = 2000 μg/m³ | $CO_{(8\text{- hour})}$ = 10000 μg/m³ |
| $NO_{2(1\ year)}$ = 20-30 μg/m³ | $NO_{2(1\ year)}$ = 60 μg/m³ | $NO_{2(1\ year)}$ = 40 μg/m³ |
| $SO_{2(1\ year)}$ ≤ 5 μg/m³ | $SO_{2(1\ year)}$ = 35 mg/m³ | $SO_{2(24\ hours)}$ = 125 μg/m³ |
| | $PM_{10(1\ year)}$ = 60 μg/m³ | $PM_{10(1\ year)}$ = 40 μg/m³ |
| | $PM_{2.5\ (1\ year)}$ = 15 μg/m³ | $PM_{2.5\ (1\ year)}$ = 25 μg/m³ |
| | | $O_{3\ (8\text{- hour})}$ = 120 μg/m³ |

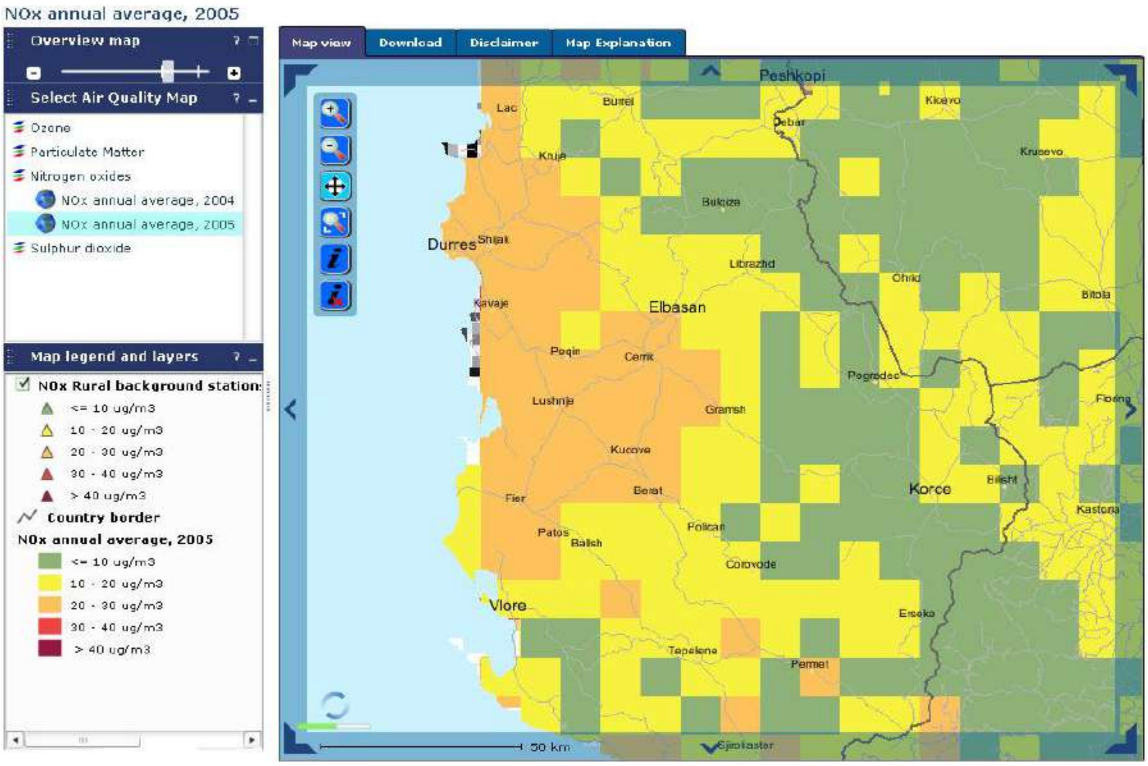



**Figure 10. $NO_x$ Annual Average Background Concentration (Source: EEA Interpolation dataset, 2005)**

[22] https://www.eea.europa.eu/themes/air/air-quality/map/airbase

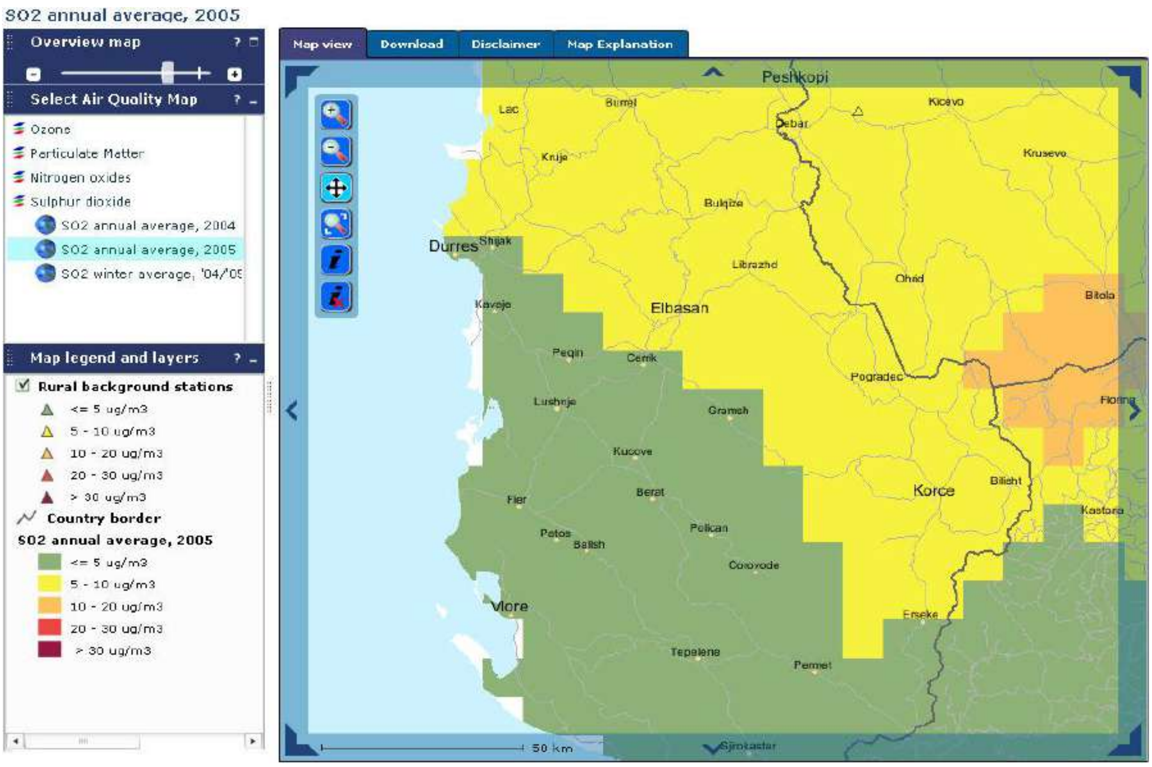



**Figure 11. $SO_2$ Annual Average Background Concentration (Source: EEA Interpolation dataset, 2005)**

According to this data, no elevated concentration of analysed chemicals was detected. There is a direct relationship between this result and the characteristics of the areas in which the air samples were collected, as these are rural areas without significant sources of air pollution, and consequently low levels of expected $NO_x$, $CO_2$ and $SO_2$ concentrations, directly related to the absence of air pollution sources in these rural areas.

### 4.1.1. Hydrology

Durrës municipality territories are part of the catchment area of Erzen and Ishëm river, and the Adriatic Sea. The Rodon-Erzen hilly ridge serves as the dividing line of the catchment basins of the above rivers. Certain parts of the Durrës plain, which have a slight slope from sea level, discharge water directly into the Adriatic Sea. The surface hydrographic network is represented by the Adriatic Sea, rivers (Erzen and Ishëm), streams, ravines, coastal lakes and artificial water bodies such as: catchments and drainage canals built after 1950. The main objects that were built during the communist period respectively 1961 - 1967, are: Porto Romano hydropower plant with 7 motor pumps with a capacity of about 24 $m^3$ / sec; high water canal Spitallë , which collects the waters of the hills and discharges them with free flow into Porto Romano with a length of 7200 m; Shënavlash high water canal that collects rainwater from the hills and flows it freely near the Army Holiday Home on Durrës Beach with a length of 7800 m; protection of the swamp from the sea with embankment with a length of 9200 m; protection of the swamp from the river Erzen with embankment (left arm) with a length of 4700 m; the main swamp drainage collector that brings drainage water to the Porto Romano hydropower plant with a length of 7883.60 m; 26 secondary drainage channels with a total length of 39 164 m. After the completion of the construction of the above-mentioned facilities, a field of 3050 ha of land was acquired.

#### 4.1.1.1. Surface Water

Water resources in Porto Romano - Bishti Palles as well as all in the Durrës are scarce, both considering surface and groundwater resources. No natural surface water course is located in the studied area. The only surface water bodies are the drainage channels of Durrës plain that were constructed with the amelioration of the area around 25 years ago. Due to the limited natural slope of the plain, that was the natural cause of the presence of marshlands, a huge pumping station was installed in the northern edge of Durrës Hills in order to force the flow of the channels into the Adriatic Sea. The huge open drainage system was constructed for the reclamation of the former Durrës Marsh, but is now even collecting the waste water of Durrës City. The flow direction in the main channel is in the southern part of the area to the Porto Romano pumping station, from the Northern part to the pumping station at Lalzi bay.

***Sea:*** The proposed project area is located about 2 km east of the Adriatic Sea.

***Rivers:*** **Erzeni River basin** extends from the mountainous areas in east and south of Tirana until the western hills and plains along the Adriatic coast, between Tirana and Durrës. Erzeni river flows into the Adriatic Sea in the Lalzi bay near Durrës. It has an area of about 760 km$^2$, with a total length of main line about 110 km and an average altitude of the basin at about 440 meters above sea level. Erzeni, together with the river Ishëm constitutes Ishëm-Erzeni water basin with an area of 2200 km$^2$.
A hydrological map (Figure 12) indicates the surface water resources in the area.

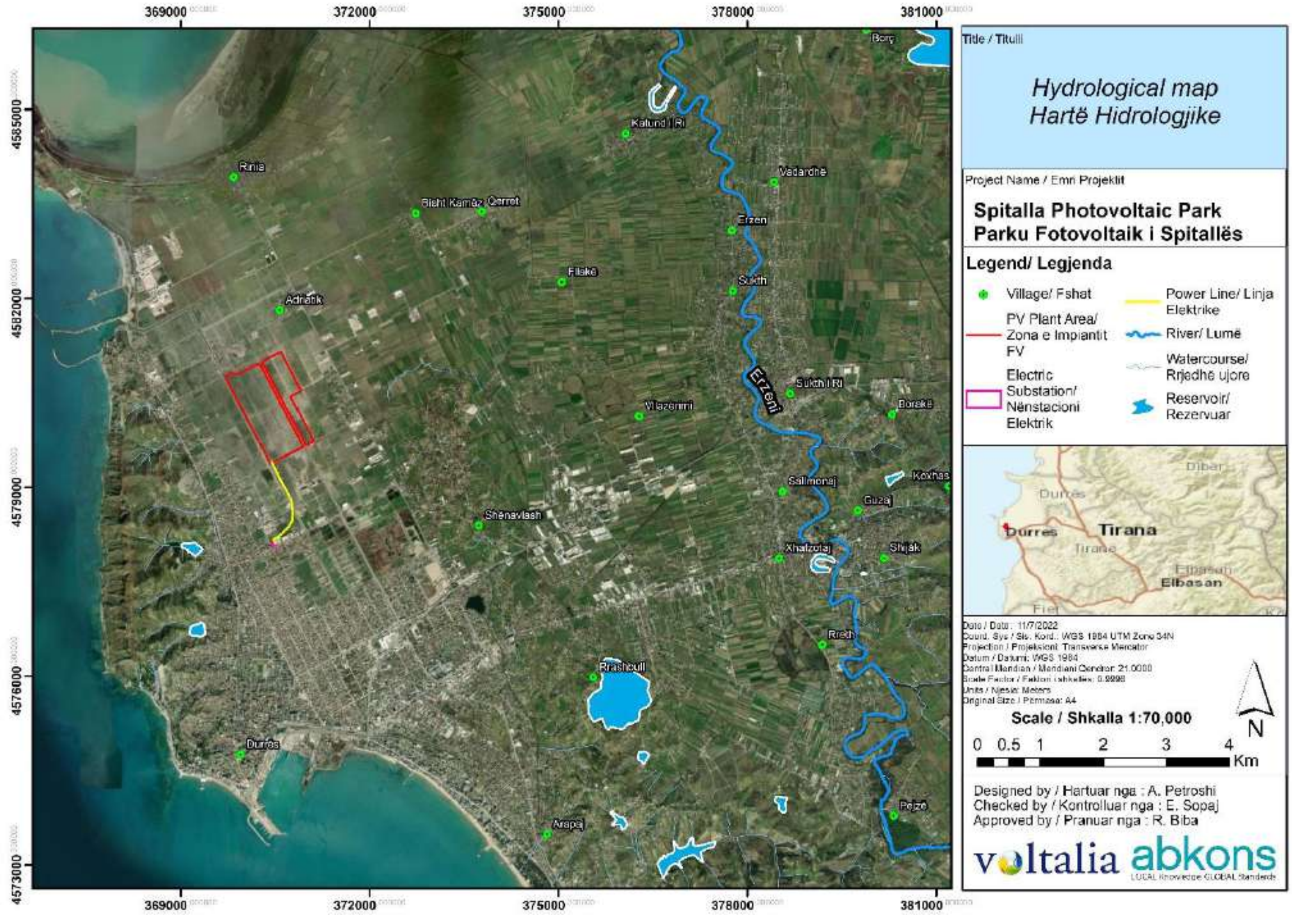



**Figure 12. Hydrological Map**

### 4.1.1.2. Ground water

Groundwater reserves are divided into two groups:

- Groundwater of rocks or Quaternary deposit complex.
- Groundwater of compact rocks or Molasses rocks.

**Groundwater Level:**

Groundwater depth from the surface reaches 0.5 -3.0 m. During the drought in the summer period, the water level decreases to a depth of 3.0-5.0 m, while during the winter it increases close to the ground surface (0.2 - 0.3 m, depth).
At the western and eastern side of Durrës region the groundwater is found with a depth extension over 5.0 m from the ground surface. At these depths the groundwater is of the artesian type, they meet in sand-conglomerate interstices which are isolated from the earth's surface by a descriptive clay layer, but during drilling these waters rise and emerge by self-discharge to the surface.

It is important to note that the groundwater reserves in the project area are saline due to the infiltration of saline water from the Adriatic Sea and therefore all land in Porto Romano is unproductive without agricultural activity due to salinization of land.
There are no freshwater resources in or around the Project area that have been used or that will potentially be used in the future.

### Irrigation and Drainage Systems

***Irrigation reservoirs:*** In the basin of the previous wetlands there are several reservoirs, which affect the water regime, such as Spitalla (1 and 2); Shkallnur, Metalla, Arapaj (1 and 2), Memaj, Xhafzotaj; Katundi i Ri (in the administrative unit of Katundi i Ri village).

Their water capacity varies from a few hundred thousand cubic meters to several million cubic meters. In this period, only a small part of them supplies the lagoon lands due to the degradation of the irrigation system and the poor maintenance of the dams and other elements of the reservoir.

***Wet deposits:*** The surface layer of these deposits is composed in the upper part and up to 0.8 m of a multi-coloured clay material and dark shades in black plastic, with thin layers of macro-fauna aggregates mainly of shells (Bivalvia) at a depth of 0.10 m up to 0.40 m. Depth up to 1.5 m consists of mud / clay with alternating layer levels with mostly well-preserved shells and deciduous macro-fauna, in some cases irregularly distributed macro-fossils. According to this profile, it turns out that the former swamp area has taken the form of a stepped tectonic gap (graben), accompanied by lower-grade tectonic scale or slip, parallel to the large tectonic slides that control the sides of this gap. The maximum thickness of Quaternary deposits, near this profile, varies from 120 to 130 m. In the beach area the thickness of the Quaternary deposit is smaller.

Figure 13 below shows views across a range of drainage and irrigation channels.

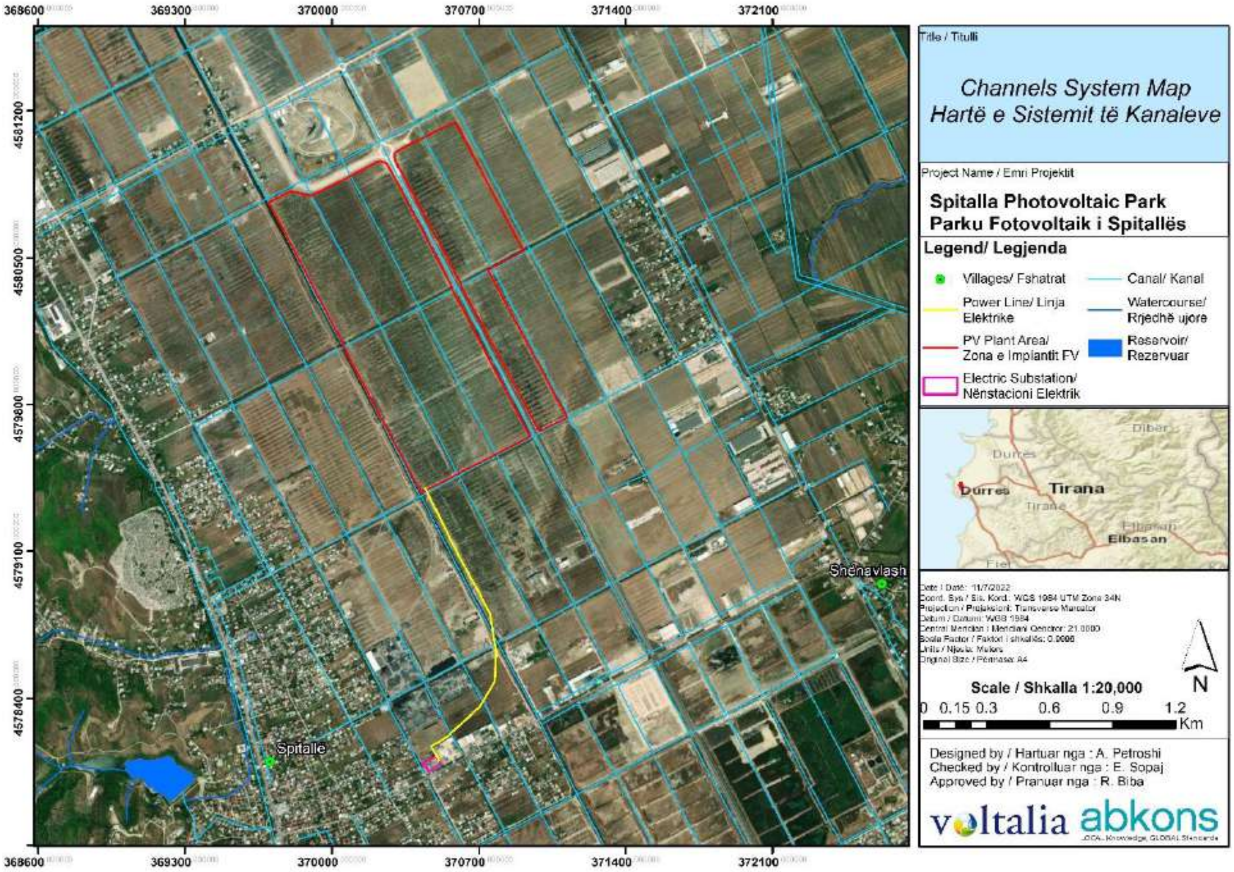



**Figure 13. Drainage channel system/ network**

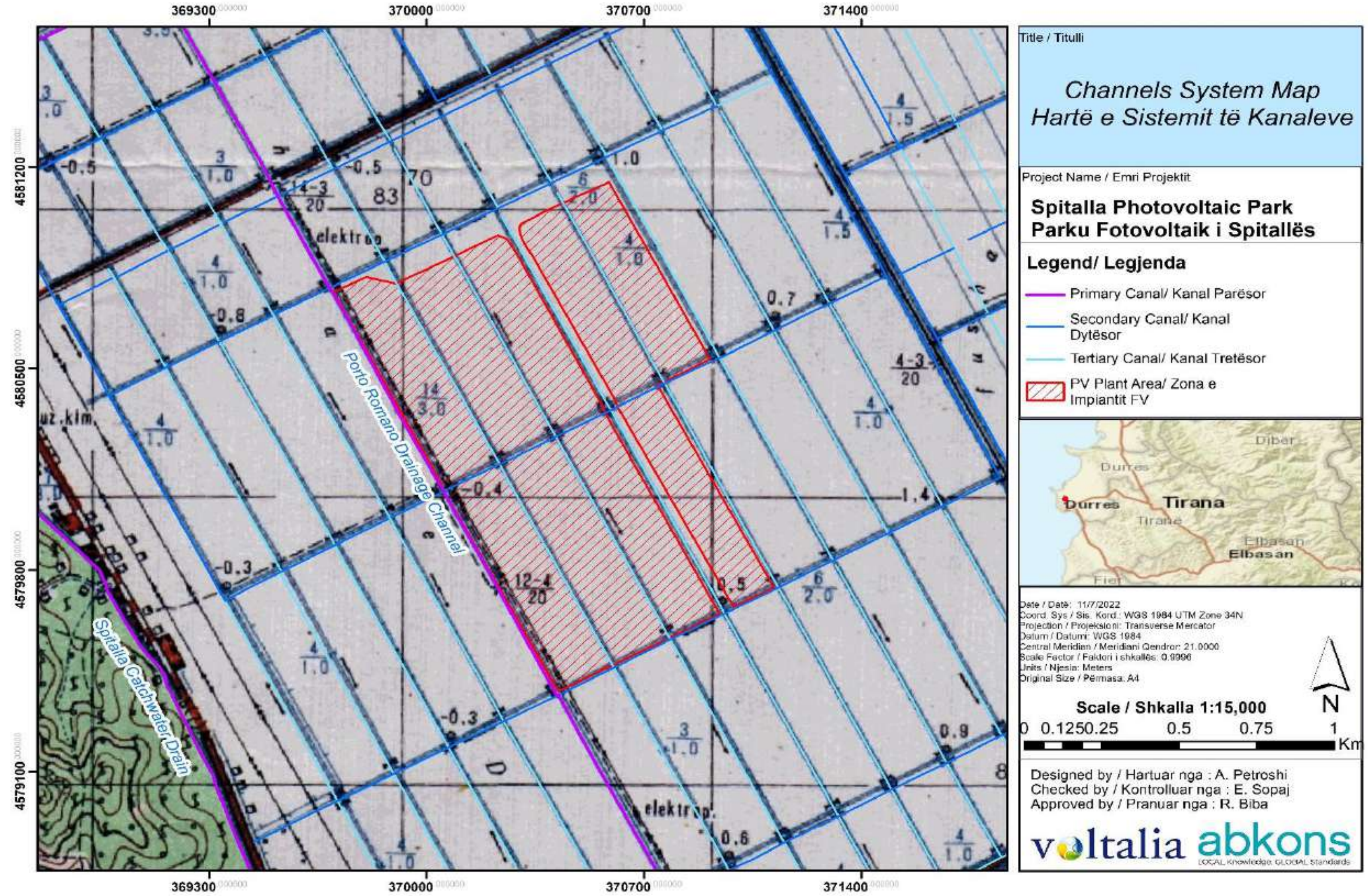



**Figure 14. Existing drainage network [23] - Topographic map**

[23] Hydrological Study Report for the Spitalla Photovoltaic Park

### 4.1.2. Geology

Geographical position, geological construction, features of relief, climatic conditions and hydrographic network of the territorial space of the municipality of Durrës, have defined several types of lands, which differ due to structure, texture, colour, porosity, etc. In this territory are present zonal, azonal and intrazonal soils.

#### 4.1.2.1. Zonal soils

Land zonation is related to altitude above sea level. Since the territory of Durrës goes up to an altitude of 269 m above sea level, these lands are part of the belt of grey-brown soils. Quaternary, river, sea, lake and swamp deposits have served as parental material in the formation of these lands. Since these deposits are of the later geological period, the Quaternary, these lands are also new. The Mediterranean character of the climate, expressed in the seasonal character of temperatures, precipitation and wind, has influenced the period of land formation and their current state. The grey-brown soils of Durrës are formed at a temperature of 160 °C, in the annual amount of precipitation of 1000 mm and in the constant presence of westerly and northerly winds. These soils are formed under Mediterranean shrubs and trees, accompanied by transient woody-herbaceous vegetation and the presence of groundwater near the surface.

Morphological characteristics, physico-chemical and formation conditions, enable the division of gray-brown soils into several subtypes: common or typical brown-brown soils; grey brown soils washed away; grayish reddish brown soils; grey-brown meadow soils (LHK) and grey-brown meadow soils (HKL). In the territory of the study municipality there is only the subtype of common grey-brown soils and gray-brown meadow lands.

#### 4.1.2.2. Azonal soil

The group of azonal soils includes alluvial-A soils (fluvisol, cambisol, regosol, arenosol, gleisol). These soils are genetically new. They have developed in the river deposits of Erzeni and Ishëm and in the deposits of the Adriatic Sea. These lands require a plain, central Mediterranean climate; herbaceous and woody vegetation (willow, poplar, alder, marine, etc.) and the impact of groundwater near the surface. Alluvial soils display the qualities of the material transported by each of the aforementioned rivers. Based on the conditions of their formation and the degree of their development, we divide these lands into: alluvial river lands (with subdivisions: alluvial and sandy meadows) and alluvial sea lands (with subdivisions: undeveloped sandy and sand dunes of old little developed). All subtypes are present in the territory of the municipality of Durrës and Shijak.

#### 4.1.2.1. Intrazonal Soils

Salt soils occupy an important place in intrazonal soils. Saline soils are those that have electrical conductivity (electrical conductivity), in saturated aqueous extract (solution obtained by pure soil centrifugation) greater than 2 mm hos / cm or above 1300 mg / l salts. The formation of saline soils is related to three main factors that are the relief (topographic and geographical position of the area), the extent of the irrigation surface and the quality of the irrigation water, and the amniotic formation. The physical, chemical and biological qualities of the above-mentioned soil types make them resources with long-term renewal. Their values and qualities will be addressed in the second chapter. All the above types of lands have been used by man for purposes of change, as their physical, chemical and biological qualities enable urban, visual and agricultural development.[24]

[24] *Baholli, E., 2016, Natural resources of the territory in the district of Durrës and their management, Department of Geography, UT*

#### 4.1.2.2. Surface Soil in Project Area

The surface soil in the area consists mainly of fine-grain sediments like clay, clayey loam, sand and organic matter. Their maximal thickness in the centre of the area is about 50 m[25]. There are no stations adequate for covering the situation in the area inherent in the Albanian Integrated Environmental Monitoring programme, and there seems to be no measurements of the chemical composition of the soil and possible pollution with substances of relevance to the project. The soil in the major part of the area is rather saline, and possibly even polluted from the frequent flooding with wastewater. The main use of the soil in the area is as pasture, only a minor part is used for different crops, mainly for self-supply with vegetables and foodstuffs for the domestic animals. An increasing part of the best soils (read: the driest ones) is now being used for construction of illegal houses.

### 4.1.3. Flooding

The central part of the Durrës plain is flooded during heavy rains, and in particular, when the Porto Romano pumping station accidentally stops pumping. The area where the PV Plant is foreseen is characterized by frequent presence of stagnant water, probably linked with backwater phenomenon of rain water and/or run-off of surface water from the outside areas, and the malfunctioning of pumping activity from the pumping station at Lalzi bay, caused by general bad maintenance of the pumping stations, and by power breaks.

The entire corridor along the Erzen River, starting from the western part of the Shijak hills and continuing to gradually expand into the estuary-discharge of the river, is risked by the phenomenon of periodic floods.[26] This area also coincides with an urban corridor populated between Rrashbull, Sukth, Katundi i Ri, and Rrushkull, which is also the second urban pole of importance in the new Municipality. The January 2016 floods in Sukth and KiR confirm the importance of this problem. According to a press release of the Ministry of Agriculture[27], on January 7, 2015, 40 hectares were flooded in Rrashbull, 25 hectares in Sukth, 200 hectares in Ishëm (including an unspecified amount of land in Gjuricaj).

Below Figure 15 shows the Map of the potential flood zone of the Erzen River, highlighted in blue.

[25] Baholli, 2016
[26] according to IGJEUM
[27] http://sot.com.al/aktualitet/ministria-e-bujqësisë-raporton-dëmet-e-reshjeve-ja-sa-sipërfaqe-toke-tëmbjellë-janë

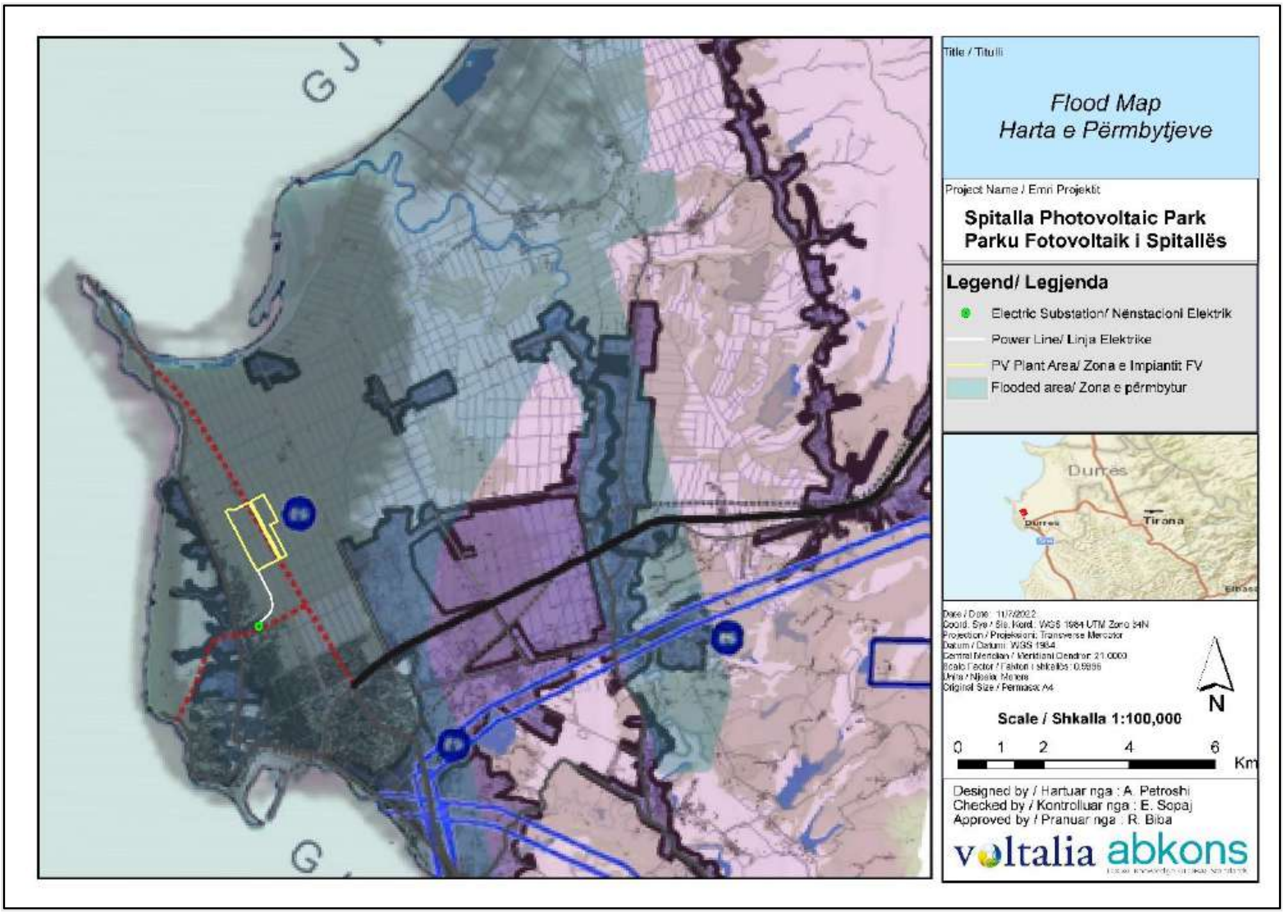



**Figure 15. Flood Map (Source Albanian Geological Survey - Albanian Geological Risk Map)**

#### 4.1.3.1. Hydrology data from field visit

On December 24, 2020, a field investigation was conducted by ICE shpk to observe the drainage system and the condition of Hidrovor. During the field observation in the study area, it was observed that the secondary drainage canals were relatively in good condition while the tertiary canals were almost full with sediments and solid waste. Ponds were observed along the field even though it had not rained for a long time.

The Porto-Romano Pump Station was equipped with 7 pumps, 4 with a capacity of 2.5 $m^3/s$, 2 with a capacity of 4.5 $m^3/s$ and 1 with a discharge capacity of 2.25 $m^3/s$. In total, Pump Station has a discharge capacity of 21.25 $m^3/s$. The pumps are very old and their performance was low.

Below are photos taken in the field to highlight the condition of the study area, canals and Pump Station.

**Figure 16. Water ponds in the study area**

**Figure 17. Secondary canal in the study area**

**Figure 18. Secondary canal on the northern border**

**Figure 19. Porto Romano Pump Station**

**Figure 20. Canal to Pump Station (left) and discharge to sea (right)**

The project will not exert additional pressure on surface waters (irrigation and drainage), coastal waters and / or drinking water sources. Any modifications to the hydrology will be such that they match the current environment when it comes to flows. Impacts on surface waters, coastal waters and drinking water sources are characteristics of the construction phase, but are temporary impacts and the project does not cause irreversible damage to the environment. Also, during the period of operation of the plant minimal or negligible effects on the environment may occur, due to the nature of the project which is based on technology that uses renewable energy (solar).

### 4.1.4. Land Use

The land use in Durrës is dedicated to urban development, agriculture, pastures, forests, abandoned or low fertility lands, wetlands and drainage and irrigation canals and surface waters. Over a 35-year period (1985-2020) land use has undergone major changes in two land use categories: urban and forest. Urban area has increased by about 6 times, while forest lands have decreased by about 45%. Pastures and shrub areas have increased by approximately 30%. A good part of agricultural land (about 15%) is abandoned and about 30% of the area is not cultivated.[28]

The land under consideration is an area of 1.2 $km^2$ in the administrative unit of Spitallë. It is owned by the Ministry of Agriculture and Rural Development and is reported as agricultural land in the cadastral register of the Durrës Real Estate Registration Office. The area is also known as the "former Spitalla swamp" and is characterized by flat terrain with no evidence of recent use as cultivated land.

The proposed area is located among the highly industrialized areas of Durrës-Tirana and is declared as an Economic Region supported by the "Integrated Cross-sectoral Plan for the coast 2015-2030" with a focus on development for services, technology, light industry and logistics. The plan recommends it as an area with priority of national and regional development in the economy, which should be supported by services and fast access for travellers and goods.

Changing the category of land from low fertility land that is not used for agriculture, to land for carrying out activities of an industrial nature in the field of electricity generation, is recommended by the competent authorities.

[28] Ermiona BRAHOLLI, 2016, NATURAL RESOURCES OF THE TERRITORY IN THE DISTRICT OF DURÈR AND THEIR MANAGEMENT, PgD, Tirana University, 202 p.

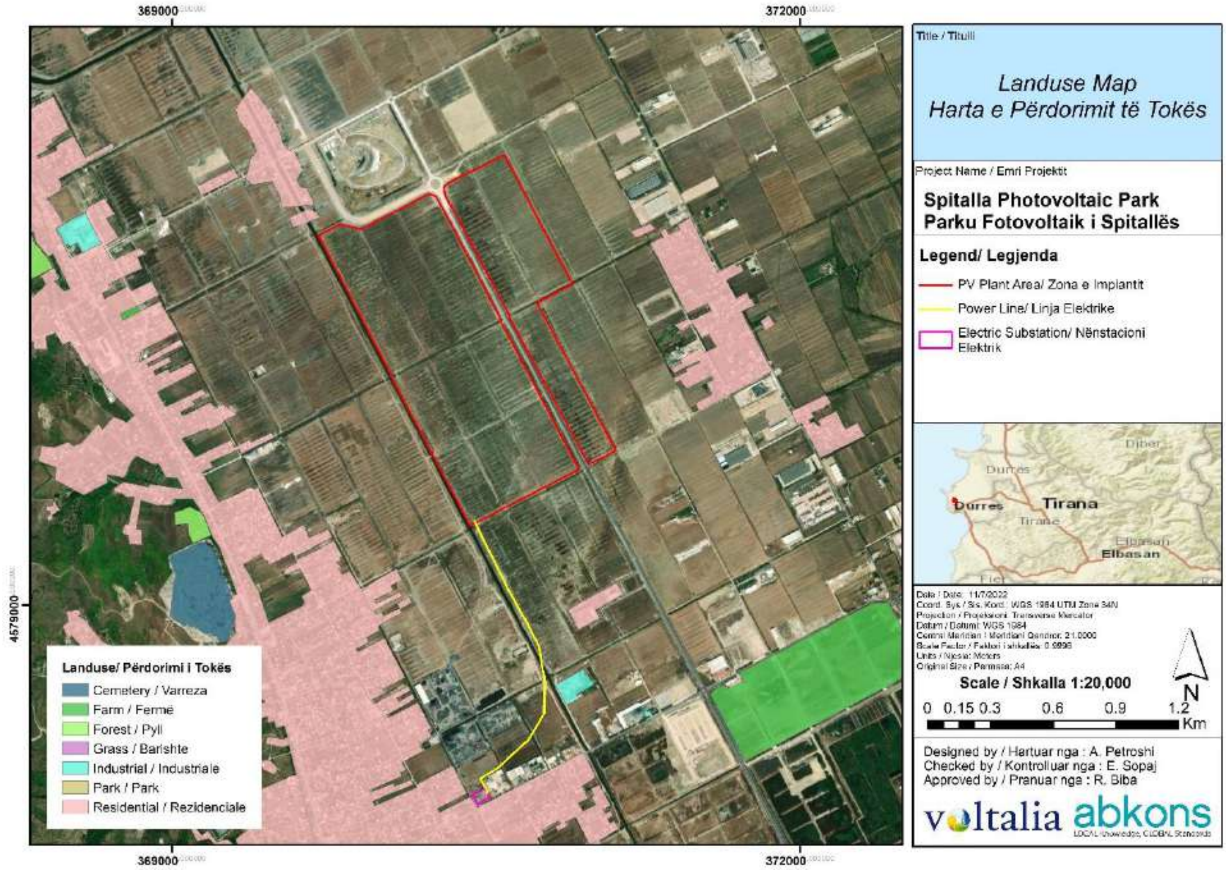



**Figure 21. Map of land use in the project area**

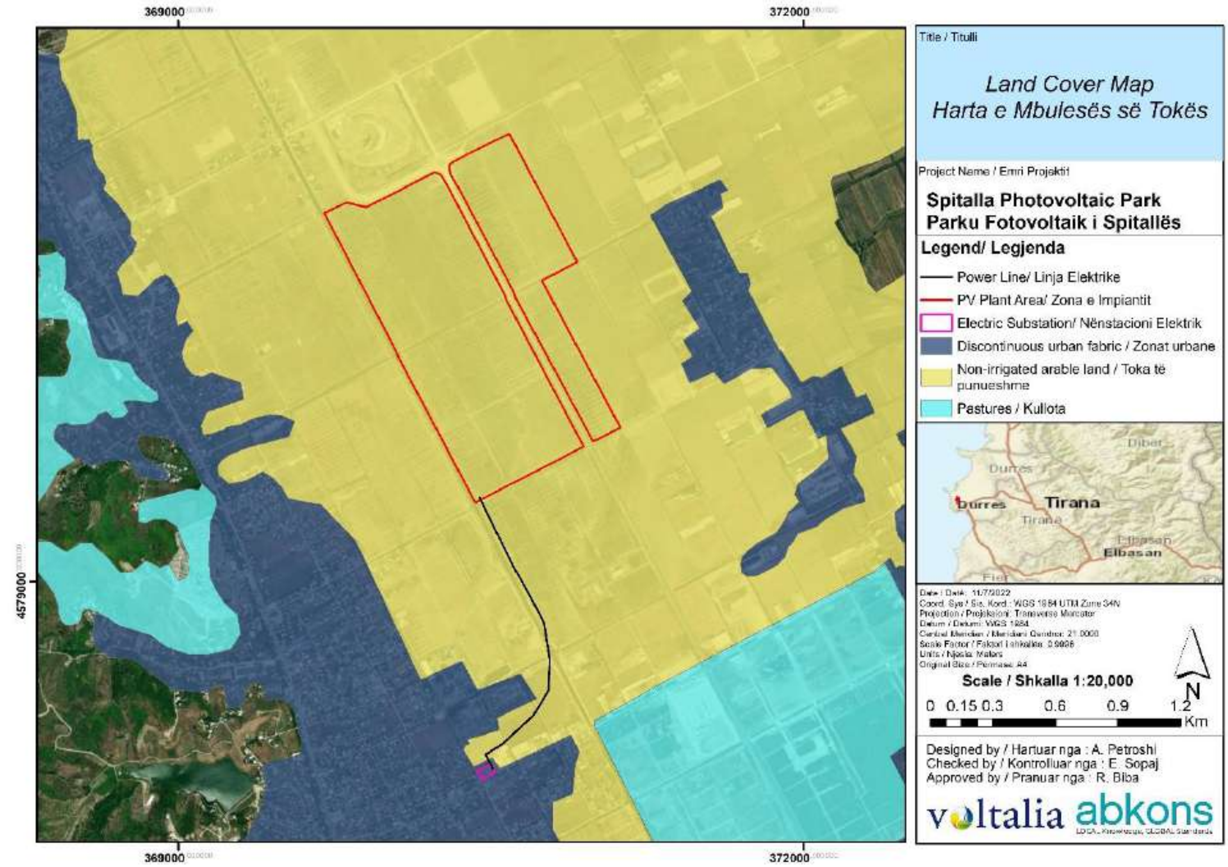



**Figure 22. Map of land cover in the project area**

## 4.2. Biological Environment

The dominant habitats of the area are salty wet-lands on clay and drainage channels; in especially the northern part even salty and sandy soils. According to this and to the use of the main part of the area for grazing, the sparse vegetation of a typical marsh flora is limited to halophytic grasses and *Myricaria germanica*, and, on drier soils, vegetation with *Trifolium*, *Silene*, *Hordeum* and *Poa* species. The drainage channels are frequently covered with *Lemna* sp., and the vegetation along them consist of species like *Phragmites*, *Typha* and *Scirpus*. This area is even characterized by the presence of *Tamarix* sp., which is very resistant to humidity and salinity. This offers a shelter to *Egreta garzeta*, that is occasionally observed in the area.

A considerably richer vegetation is to be found in the settlement areas where excavation material from other areas has been used to improve the soil quality. But this vegetation is to a great extend not natural for the area, but consists of anthropochoric species like *Urtica* and *Datura* sp. and other ruderat plants. Overall, the site setting is expected to comprise relatively poor habitat from an ecological perspective, characterized by the salty land. The sustainable use of the natural resources and the protection of biodiversity will be considered as required under PR 6 and PS 6.

The first phase of biodiversity baseline surveys has already been undertaken in May 2021 so that spring data could be captured; the findings of these surveys have been used in the below description of the ecological context. The ecological surveys were undertaken by suitably qualified specialists and the scope of these and future surveys is presented in Section 7.2.3.1 below.

### 4.2.1. Protected areas

There are no protected areas located close to the proposed project area. The nearest protected area is the "Grape Managed Area / Natural Park", which is located about 9.1 km air distance from the proposed site, northeast. This Managed Nature Reserve is classified as category IV (IUCN), area 650.0 ha, approved by Order of the Minister of Agriculture no. 2, dated 26.12.1995. Its surface consists of: Forests and Shrubs (262.8 ha), Water (323.8 ha) and Non-productive surface, sand (63.4 ha)[29].

Referring to the preliminary study in the office and the Geo-portal ASIG, there are natural monuments in the vicinity of the project area, listed as follows:

- "Kallmi Beach" - located in the west of the area, about 0.5 m above sea level. It is a beach formed by the accumulating activity of sea waves. It is 100 m long and 15 m wide. It has scientific, geomorphological, and didactic values [30]. This natural beach is positioned about 2.1 km air distance from the proposed site, south-western part;
- “Çinari i Balliasit” - located in the village with the same name, Xhafzotaj commune, about 30 m above sea level. Its characteristic is the composition with maple trees with height 32 m, trunk diameter 2.2 m, age over 500 years. It represents biological, spiritual, didactic and tourist scientific values [31]. This monument is located about 8.8 km air distance from the proposed site, on the south-east side;
- "Rrapi i Rubjekës" - located in the administrative Unit Maminas, about 20 m above sea level. It has a special trunk and crown, height 17 m, trunk circumference 7 m and age 500-600 years. It has scientific biological, didactic and tourist values [32]. This natural monument is positioned about 11.5 km air distance from the proposed site, on the east side.
- Important Bird and Biodiversity Area of Lalzi Bay (AL015) – some 3 km north-west of the Project Development Area It is an area of importance for birds and particularly wintering and migrating waterbirds. An average of 4,200 waterbirds winters here every year in accordance with the data collected during the International Waterbird Census that covers the areas since 1995. The highest figure has been recorded in 2017 with circa 12,500 waterbirds composed mainly by Gulls, Waders and Ducks.
- Nature Managed Reserve of Rrushkull – some 8 km north-east of the Project Development Area. The Nature Managed Reserve of Rrushkull has been designated in the late 1960’s for its importance as a hunting ground for waterbirds and as site used for artificial intensive breeding of Common Pheasant *Phasianus colchicus*. The site is located north of Erzeni River and it represents a wetland area typical for its riparian forest and small water bodies covered by reedbeds. The area is again important for migratory birds, particularly small passerines that see the reedbeds as a feeding station either during migration or wintering. Besides. The area is important also during the breeding season for waterbirds and small passerines.

[29] http://akzm.gov.al/wp-content/uploads/2020/02/Studimi_ZM_Draft_Dhjetor_2019.pdf
[30] Perikli Qiriazi; Skënder Sala (2006). "Durrës District". Nature Monuments of Albania.
[31] Perikli Qiriazi; Skënder Sala (2006). "Durrës District". Nature Monuments of Albania.
[32] Perikli Qiriazi; Skënder Sala (2006). "Durrës District". Nature Monuments of Albania.

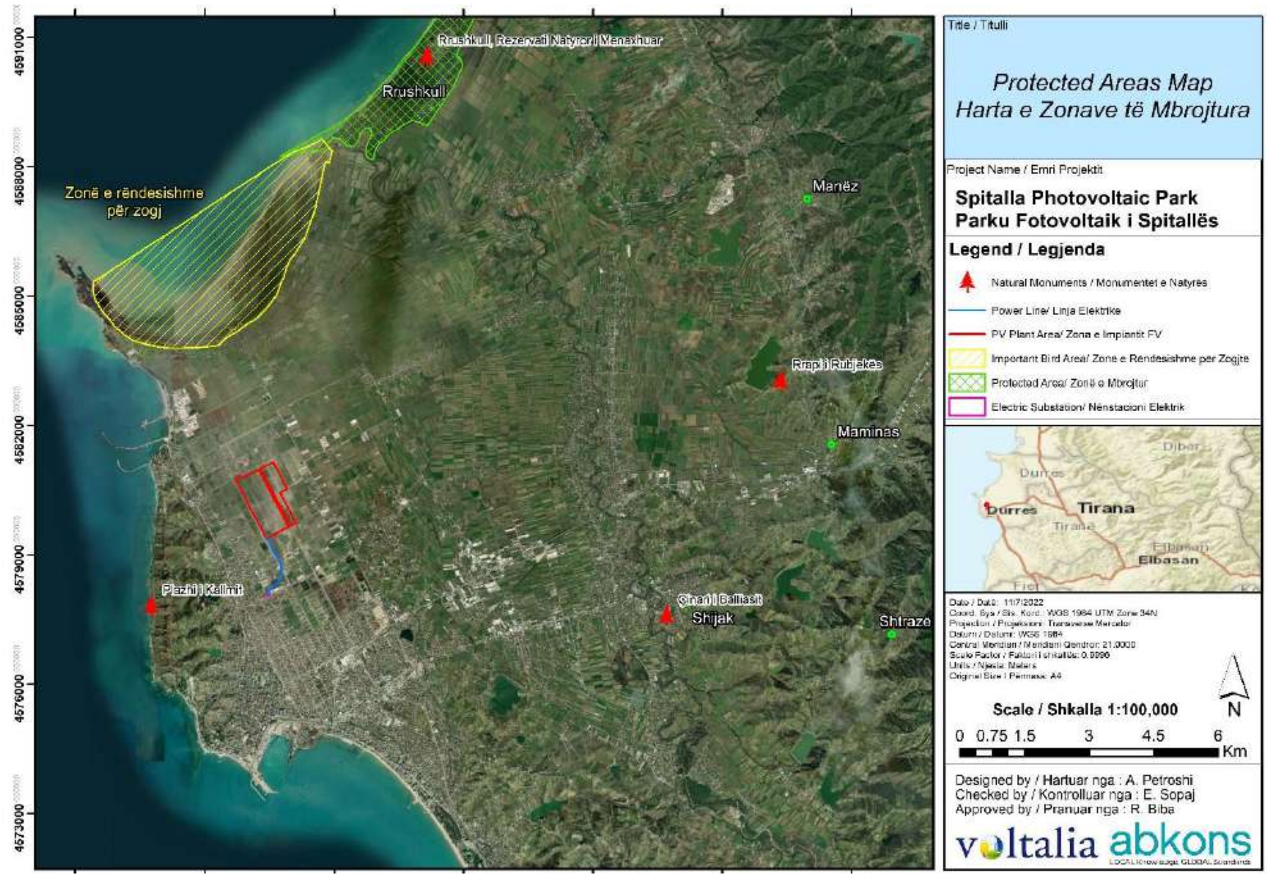



**Figure 23. Protected area map**

### 4.2.2. Habitats

The area is a very heterogeneous landscape; there is variability in this habitat (micro-habitats). Within this landscape several plant communities can be identified, depending on the species composition and human practices, which can differ from 1310 Salicornia to 1410 Mediterranean salt meadows habitat (*Sarcocornetea fruticosi*) and to Mediterranean and thermo-Atlantic halophilous scrubs (*Juncetalia maritimi*). Due to the high level of the fragmentation mapping is difficult.
There are salt soils cultivated years ago, but abandoned and overgrazed nowadays. The vegetation is damaged drastically by the intensive human intervention (grazing) and unsustainable practices.

The following types of habitats have been identified in the Project and surrounding areas:

- Salt marshes on the channels (EU Habitat Code : 1310)
- Mediterranean salt meadows (*Juncetalia maritimi*) (EU Habitat Code: 1410)
- Reed beds (*Phragmito magnocaricetea*) (EU Habitat Code: 72A0); EUNIS code C3.23

Of the above the most significant potential sensitive areas are the Stream/River (running water which includes large irrigation cannels) and drainage channels/reedbed habitats that are present within and close to the PV Project site area as well as intermittently present along the OHL route.

### 4.2.3. Flora

It is generally a heterogeneous landscape with several plant communities identified depending on human practices, which vary from Salicornia and other annuals colonizing mud and sand (in the western part of the transect) to Mediterranean salt meadows habitat (Juncetalia) and to the Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticose*).

Salt meadows are created after the reclamation of the salt marshes and are one of the most prevalent habitats in PDA, in the low-lying alluvial plain behind sandy dunes. These are inundated during the winter and dried during the summer. Often within this habitat type, plant cover alternates with bare ground that, in areas of high salinity, is covered with crystallized salt.

Glasswort is often the first plant to take hold in a mudflat and begin its ecological succession into a salt marsh.

Between two drain canals vegetation is dominated by: *Anthrocnemum fruticosum Moq., Artemisia coerulescens L., Arthrocnemum glaucum (Delile) Ung.- Sternb., Arthrocnemum perenne (Miller) Boiss, Blackstonia perfoliata (L.) Hudson., Centaurium erythraea Rafin., Centaurium spicatum G. Mans., Cirsium arvense (L.) Scop., Crypsis aculeata (L.) Aiton., Cynosurus echinatus L., Daucus guttatus Sibth & Sm.,Salicornia fruticosa L., Suaeda maritima (L.) Dumor., Plantago crassifolia Forskal, Plantago coronopus L., Inula crithmoides L., Lagurus ovata L., Limonium vulgare Miller., Atriplex hastata L., Hordeum marinum L., Linum perenne L., Sonchus maritimus L., Spergularia marina Besser., Crepis foetida L., Polypogon maritimus Willd., Polypogon monspeliensis (L.) Desf., Eryngium creticum Lam., Eryngium campestre L., Trifolium dubium Sibth., Rumex crispus L., Centaurium tenuiflorum (Hoffm. & Link) Fritsch.,*

Near and in tertiary canals vegetation is dominated by: *Carex distans L., Saccharum ravennae (L.) Murray., Scirpus holoschoenus Vahl.), Carex divisa Huds., Cynanchum acutum L., Elymus pycnathus (Godron), Erianthus ravennae (L.) Beauv., Typha angustifolia L., Juncus compressus Jacq., Juncus effusus L., Ranunculus aquatilis L., Vulpia ciliata (Danth.) Link Scirpus maritimus L, Triglochin maritima L., Link., Schoenus nigricans L., Hypochoeris radicata L., Crepis setosa Haller., Cynodon dactylon (L.) Pers. Linum tenuifgolium L., Cynosurus echinatus L. Cyperus capitatus Vandelii., Bellis peremis L., Medicago prostrata Jacq.,*

Salt meadows provide many habitats for species uniquely adapted to changes in salinity and water levels. They serve as depositories for a large amount of organic matter, which feeds a broad food chain of organisms from bacteria to mammals as it decomposes. The botanical and ecological value of this type of habitat is common because of the high level of human intervention.

In our case, the habitat doesn’t fulfil these functions. It is very damaged because of the unsustainable practices, years before used for agriculture practices and nowadays for intensive grazing.

**Figure 24. Views of flora within PV Project Site**

**Figure 25. Views along the Drainage channels**

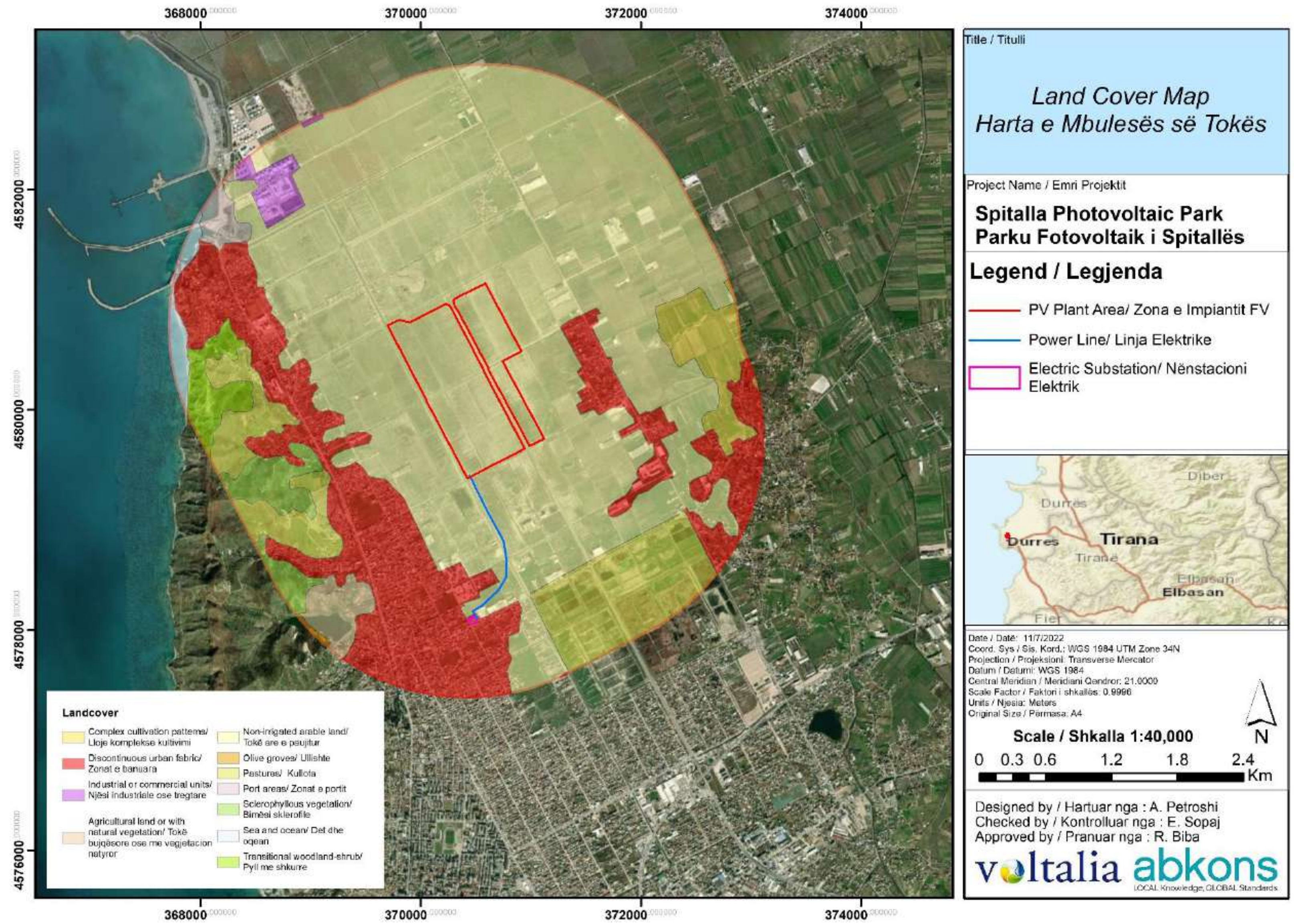



**Figure 26. Land cover Map**

### 4.2.4. Fauna

The fauna is mainly composed of reptiles and amphibians: turtles, snakes and frogs (*Rana dalmatica*). Small mammals are most frequently found in the bordering areas of the wetlands and in the more elevated dam paths. Snails are frequently found in the sparse vegetation. In the immediate project area, the bird population is neither rich in number nor in species, which is basically due to the lack vegetation. There are no important roosting sites for bats in the PDA area. Pipistrelle bats (*Pipistrellus kuhlii* and *P. pipistrellus*) use the PDA as forage ground, but in limited numbers.

Drainage channels and temporary pond with fresh and brackish water provide breeding and feeding grounds for frogs, toads, terrapin and the European pond turtle.

The site where Spitalla Photovoltaic will be constructed represents an abandoned agriculture land with natural successions towards former salt marsh, as the area used to be before being reclaimed during the communist regime in early '50s of the last century. While the irrigation channel system of the site is destroyed, the drainage channels (especially primary and secondary drainage channels) are in majority maintained and regularly cleaned up from sediments and vegetation removed from the drainage system. There are several small bridges over the drainage channels and they were checked for bats' presence signs. There are no human settlements or ruins of any storage facilities within Spitalla PDA.

Main species in the abandoned salty agriculture land were: Salicornia europaea, Juncus maritimus, Scirpus sp., Phragmites australis. Along the drainage channels most common species were: Phragmites australis, Typha latifolia, Juncus sp., Scirpus sp.

Rain-fed temporary ponds are found here and there especially along the tertiary grade drainage channels. 2$^{nd}$ and 3$^{rd}$ grade of drainage channels are used as breeding and feeding grounds for frogs and toads, especially juveniles. 1$^{st}$ and 2$^{nd}$ and 3$^{rd}$ grade drainage channels are also important breeding and feeding grounds for terrapin and the European pond turtles.

The presence of terrapin (*Mauremys rivulata*) was confirmed along the 1$^{st}$ grade drainage channel. European pond turtle (*Emys orbicularis*) was widely reported along the 1$^{st}$, 2$^{nd}$ and 3$^{rd}$ grade drainage channels of PDA area. Presence of water snakes (*Natrix natrix* and *Natrix tessellata*) were observed in few cases along the 2$^{nd}$ grade drainage channels. PDA is used as important breeding ground for *Pelophylax kurtmuelleri*, *Bufotes viridis* and *Hyla arborea;* their presence was widely recorded during the May 2021 field survey in 2$^{nd}$ and 3$^{rd}$ grade drainage channels as well in rain-fed temporary ponds.

**Figure 27. Picture 4016. Juvenile of *Bufotes viridis* after the completion of metamorphosis**

**Figure 28. Picture 4091. *Emys orbicularis* and *Mauremys rivulata* resting along the main drainage channel of Spitalla**

**Figure 29. Picture 4025. Juvenile of *Hyla arborea***

**Figure 30. Picture 4132. *Natrix natrix***

**Figure 31. Picture 4324. *Pelophylax kurtmuelleri* (adult) at the pond along the 2nd grade drainage channel**

**Figure 32. Picture 4349. Fresh tracks of *Emys orbicularis* on muddy terrain along a rainfed pond**

### 4.2.1. Avifauna (birds)

**Birds in the project area**

The project area offers more or less two types of major habitats for birds: (i) open grounds with sparse vegetation and (ii) drainage channels and ditches providing an input of fresh/brackish water in an area predominantly haline.

Open grounds are used by several bird species with a number of them considered either as confirmed breeding or probable breeding. Breeding birds were represented mostly by ground nesting passerines and several species of waders with some of them considered as probable ground nesting birds.

The drainage channels and ditches could be important for nesting birds and foraging birds when filled with water and covered by aquatic vegetation. Common Terns and Little Terns were seen using the drainage channels for foraging while other small birds could use then as a breeding ground.

The area represents a former marshland reclaimed in agricultural land around 1960s. Until 1990s, it was used for extensive agriculture due to the high content of soil salinity. After the 1990s and nowadays it is used mainly for extensive grazing by small flocks of livestock.

The most common species in the area are represented by ground nesting birds such as the Short-toed Lark *Calandrella brachydactyla,* Crested Lark *Galerida cristata*, Collared Pratincole *Glareola pratincole,* Yellow Wagtail *Motacilla flava* and Tawny Pipit *Anthus campestris*. A few birds of prey, the Common Kestrel *Falco tinnunculus* and the Short-toed Snake Eagle *Circaetus gallicus* did occur in the area while foraging in the PDA.

### Birds in the OHL Transmission Routes

The area represents a former marshland reclaimed in agricultural land around 1960s. Until 1990s, it has been used for extensive agriculture due to the high content of soil salinity. The urbanization of the area started after the 1990s and it is expected to increase together with transport infrastructure.
The extensively used arable land is important for ground nesting birds. Such habitat management should be maintained in order to preserve the current biodiversity values.

**Figure 33. Cattle egret (*Bubulcus ibis*) accompanying cattle grazing on abandoned agriculture land**

**Figure 34. *Glareola pratincola* (ca 80 inds) observed in proximity of the Spitalla PDA, NE direction**

**Figure 35: Former arable land used for extensive grazing;**

**Figure 36. *Athene noctua***

## 4.2.2. Aquatic Ecology

The transitional water bodies, including drainage channels of the project site, are important ecosystems for the numerous aquatic species.
The key findings of the field survey conducted in May 2021 are presented below:

Large Drainage Channel of Primary grade
This type of ecosystem is extremely polluted due to direct discharge of the waste water and associated other sources of pollution. The ecosystem recovery measures have considered a halt of discharge of wastewater and other type of pollution that might convert it to a good corridor for numerous of catadromous and anadromous species. The presence of alien fish species Mosquito fish (*Gambussia holbroki*) is a feature of these habitats. In the main/primary drainage channel the common cattail *(Typha latifolia)* in a very sparse presence associated with common reed (*Phragmites australis)* has been recorded. Presence of macro-invertebrate species typical of the high rate of pollution has been confirmed.

Secondary Drainage Channels

These sites are dominated by European Habitats include 72A0 Reed beds (*Phragmito-Magnocaricetea*). The study area is characterized by drainage and irrigation channels. The vegetation of the drainage channels (Secondary) in the project area is composed by both emergent and submersed plant species. The most dominant species of emergent type were: Lesser bulrush (*Typha angustifolia),* Common reed (*Phragmites australis*), Club-rush/bulrush (*Schoenoplechtus lacustris*) and floating plant of Common duckweed (*Lemna minor*). Out of several submersed plants the most dominant were Two-leaf water milfoil (*Myriophyllum heterophyllum*) and Hornwort (*Ceratophyllum demersum*).

Tertiary Drainage Channels
The originally European Habitats include 72A0 Reed beds (Phragmito-Magnocaricetea) at the Tertiary channels due to lack of maintenance already shifted to the habitat: 1310 Salicornia and other annuals colonizing mud and sand. In every case their maintenance is of importance for keeping species habitats connectivity.
**Macroinvertebrate species**: The macroinvertebrate species predominant at the secondary and tertiary drainage channel are mainly gastropod molluscs., Species such as *Nephtys hombergi, Tubificoides sp., Lumbricidae (Oligochaeta), Idotea baltica and Chironomus salinus* etc., typical for the highly polluted areas (WP 4 and 5) were recorded.

**Fish species**: At the secondary channels presence of Mosquitofish (*Gambussia affinis*), at the WP 1, while presence of this species has also been recorded at the primarly channel. Presence of Prusian carp (*Carassius gibelio*) has also been recorded in WP 4. No presence of eel or other fish species was recorded, while based on local residents' information, presence of European eel (*Anguilla anguilla*), the flathead grey mullet (*Mugil cephalus*) and the thinlip mullet (*Liza ramada*) is confirmed for the period before years 2000, etc.

**Figure 37: Secondary Drainage Channel: Drainage Channels / European Habitats include 72A0 Reed beds (*Phragmito-Magnocaricetea*)**

**Figure 38: *Idotea baltica* and *Chironomus salinus***

## 4.3. Socio-Economic Baseline

Following the Administrative Territorial Reform of 2015, Albania is divided into 12 districts and 61 municipalities. The municipalities are responsible for the geographical, economic, social and cultural undertakings inside the counties.

The 12 districts were created on 31st of July, 2000 to replace the former division into 36 districts. In 2015 new administrative divisions were introduced and the number of municipalities was reduced to 61 and 373 administrative units. The municipalities are governed by an elected Mayor.

The Administrative Units (AU) are formed by one or more cities, towns or villages within the municipality territory and are governed by an appointed administrator. In addition, each village is represented by a village head, which is subordinate to the Mayor. There are 2980 villages or communities in the entire country, formerly known as localities. The municipalities are the first level of local governance.

**Table 18. Administrative Structure of Albanian Counties with Municipalities and Population[33]**

| County | Municipalities | Area | Population |
|---|---|---|---|
| Berat | Berat, Kuçovë, Poliçan, Skrapar, Ura Vajgurore | 1,798 $km^2$ | 122.003 |
| Dibër | Bulqizë, Dibër, Klos, Mat | 2,586$km^2$ | 115,857 |
| Durrës | Durrë, Krujë, Shijak | 766 $km^2$ | 290,697 |
| Elbasan | Belsh, Cërrik, Elbasan, Gramsh, Librazhd, Peqin, Prrenjas | 3,199 $km^2$ | 270,074 |
| Fier | Divjakë, Fier, Lushnjë, Mallakastër, Patos, Roskovec | 1,890 $km^2$ | 289,889 |
| Gjirokastër | Gjirokastër, Këlcyrë, Libohovë, Memaliaj, Përmet, Tepelenë | 2,884 $km^2$ | 59,381 |
| Korçë | Devoll, Kolonjë, Korçë, Maliq, Pogradec, Pustec | 3,711 $km^2$ | 204,831 |
| Kukës | Has, Kukës, Tropojë | 2,374 $km^2$ | 75,428 |
| Lezhë | Kurbin, Lezhë, Mirditë | 1,620 $km^2$ | 122,700 |
| Shkodër | Fushë-Arrëz, Malësi e Madhe, Pukë, Shkodër, Vau i Dejës | 3,562 $km^2$ | 200,007 |
| Tiranë | Kamëz, Kavajë, Rrogozhinë, Tirana, Vorë | 1,652 $km^2$ | 906,166 |
| Vlorë | Delvinë, Finiq, Himarë, Konispol, Sarandë, Selenicë, Vlorë | 2,706 $km^2$ | 188,922 |

The proposed project is located within the territory of Durrës Municipality, in the Adiministrative Units of Katund I Ri and Rrashbull. Durrës is the second most populous city of the Republic of Albania and the capital of the eponymous county and municipality.

### 4.3.1. Demographic Profile

The population figures in Albania are often controversial due to the large discrepancies among census and the civil registry predictions. The population data comparison in recent years has become even more difficult due to territorial administrative reform in 2015, when the local administrative units were organized from 375 into 61 municipalities.

The last National Census of Albania was held in 2011, and it is based on these official data of INSTAT (National Institute of Statistics) that the demographic data will be presented. Although the INSTAT makes some demographic predictions these are not based on surveys.

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[33] INSTAT, National Institute of Statistics, as of 27th of August 2020.

The proposed location for the Project is situated inside the Industrial Park of Spitallë, near the Porto Romano area, which is being developed with a series of previously planned industrial activities, in the proximity of the villages of Rinia and Vrinas.

According to the Municipal data, the AU of Katund i Ri and Rrashbull has seen an increase in their population in the past years, in countertendency with the population of Albania generally. This is mostly related to the vicinity of these AU with the touristic areas of Durrës and to their vicinity of the industrial area of Porto Romano.

**Table 19. Population growth in the area**

| | 2015 Population | 2015 HH | 2018 Population | 2018 HH |
|---|---|---|---|---|
| Au of Rashbull | 30.212 | 7.996 | 33.685 | 9.115 |
| Au of Katund i Ri | 15.896 | 4.306 | 16.182 | 4.572 |

### 4.3.2. Economy and Livelihoods

The economy of Albania went through a process of transition from a centralized economy to a market-based economy on the principles of the free market after the year 1990. Albania's economy is based on the service (54.1%), agriculture (21.7%), and industrial (24.2%) sectors[34]. The country has some natural resources, and the economy is mainly bolstered by agriculture, food processing, lumber, oil, cement, chemicals, mining, basic metals, hydro power, tourism, textile industry, and petroleum extraction. The strongest sectors are energy, mining, metallurgy, agriculture, and tourism. Primary industrial exports are clothing and chrome.

Remittances, a significant catalyst for economic growth, declined from 12-15% of GDP before the 2008 financial crisis to 5.8% of GDP in 2015, mostly from Albanians residing in Greece and Italy. The agricultural sector, which accounts for more than 40% of employment but less than one quarter of GDP, is limited primarily to small family operations and subsistence farming, because of a lack of modern equipment, unclear property rights, and the prevalence of small, inefficient plots of land[35].

The total workforce by occupation is split across the sectors as follows: agriculture 41.4%, industry 18.3% and services 40.3%[36].

The inflow of FDI (Foreign Direct Investment) in Albania over the last few years has been driven by two large energy projects, the Trans-Adriatic Pipeline (TAP) and the Devoll Hydropower plant in the south of the country, both financed by foreign private capital.

The official rate of unemployment in Albania is 12,3%[37], but these official rates may not include those working at near-subsistence farming.

#### Durrës County

Durrës County, officially the County of Durrës is a county in the Northern Region of the Republic of Albania. It is the smallest by area and the second most populous of the twelve counties, with 292,029 people within an area of 766 km$^2$. The county borders on the Adriatic Sea to the west, the counties of Lezhë to the north, Dibër to the east and Tirana to the south. It is divided into three municipalities, Durrës, Krujë and Shijak, incorporating sixteen administrative units.

The central city Durrës is one of largest cities on the Adriatic Sea and ranks 5th with a population of 175,110 and one of the world's oldest continuously inhabited cities. Durrës is home to Albania's main

[34] "The World Factbook". CIA.gov. Central Intelligence Agency. Retrieved 28 August 2020.
[35] Idem…
[36] Idem…
[37] INSTAT, Labor Market, 2018.

port, the Port of Durrës. The port is also the 10th largest cargo port on the Adriatic Sea that handle more than 3.4 million tonnes of cargo per year.

Durrës has the largest port in Albania, processing over 90 percent of the entire port loading and unloading volume, which makes it the most important trading hub in the country.

Due to the convenience created by the port, Durrës has also developed as an important city for manufacturing, while the attraction from tourism has caused over the last two decades a boom in the construction sector. Durrës is an area with a high rate of internal migration, which has led to the rapid and informal expansion of the city in the area of the former swamp as well as along the coastline south of the city.

Durrës is also an important archaeological site, as under the current city are several layers of ancient civilizations. Archaeological discoveries are numerous, while the constructions of the last decades have damaged a part of this heritage.

With over 5600 its economic activities and 15% of foreign investments, Durrës is ranked in the second district contributing to the economy of the country, after Tirana.

Tourism is an industry with a significant impact on the economy of Durrës. With over 750,000 visitors a year, this is the most important area of the country in terms of mass tourism. According to the Durrës Regional Labour Office, the active workforce is estimated at 54,000 people. The unemployment rate for the district of Durrës goes to about 10.38%, where unemployment is more prevalent among women. The private sector employees about 31.3% of the total workforce, followed by the private agricultural sector with 36.7%, and the state sector with 21.3%.

### Project Area

The project area is located in the former swamp area of Durrës, which was transformed into agricultural area during the communist period. Despite the efforts, the area continues to remain highly unproductive due to the salinity of the soil.

The Porto Romano and Spitallë areas have seen in the past 30 years a transformation in suburban and industrial areas due to major investments form the GoA and strong internal migration from other areas of Albania.

The nearest settlements are those of Vrinas, known also as Shënavlash and Rinia. The majority of the population in these two settlements relies on incomes from immigration of the local population and some incomes from agriculture. The bad condition of the infrastructure in the area, irrigation and drainage channels, and the salinity of the soil, have reduced the capabilities of the farmers of gaining major incomes from the agriculture activities. Some of the residents work in the industrial entrepreneurship present in the area.

Some smaller settlements have been rising in the area in the past 15 years with internal migrants coming mostly from the northern areas of Albania, which work mainly in the tourism sector during the summer season and partly rely on remittances from family members living abroad. These residents do not own usually any land for agriculture activities.

The area is part of the Porto Romano industrial pool which have seen a series of investments in the past years and will be part of the new industrial port of Durrës. In addition, the former landfill of Durrës, located next to the PV plant location, has seen its transformation into an Eco Park.

The industrial investments in the area have seen a series of oil refineries and oil deposits nearly 1,5 km from the Project Area.

**Figure 39. Land coverage in the PV Project Site Area**

**Figure 40. Land Coverage in the PV Project Site Area**

**Figure 40. Land Coverage in the PV Site Area**

### 4.3.3. Education

Education in Albania for primary, secondary, and tertiary levels is mostly supported by the state. Albanian is the language of instruction in all public schools. The education takes place in three stages, primary, secondary, and pre-university education, and there are about 5,000 schools throughout the nation. Elementary education is compulsory from grades 1 to 9, but most students continue at least until a secondary education. Students must pass the graduation exams at the end of the 9th grade and also at the end of the 12th grade in order to continue their education. The 'School life expectancy (primary to tertiary education)' of Albania is 16 years. The nation ranks 25th out of 167 countries[38].

The AU of Katund I Ri has 6 middle schools and 1 high school in its territory. The same goes for the AU of Rrashbull, which has 6 middle schools and 1 high school in its administrative territory. Due to the earthquake that hit the city of Durrës in the November of 2019, some of these schools have suffered structural damages, which have been renewed from municipality and central government funds.

From 2005, the city of Durrës is also home to the university “Aleksandër Moisiu”, with 5 faculties, two of which, the Faculty of Business and the Faculty of Education, are located near the project area of the Spitalla PV Plant.

### 4.3.4. Health

Albania has a universal health care system which has evolved from the Soviet model into one nearer to the Bismarck model based on both mandatory and voluntary contributions, supplemented by funding from the state budget. The Constitution of Albania establishes the right to health insurance of Albanian citizens.

[38] "SCHOOL LIFE EXPECTANCY". World.bymap.org. 31 January 2017.

### 4.3.5. Tourism and recreational activities

Durrës is one of the country's most ancient cities. "The eternal city" over the Adriatic has a 3,000-year history, its founding dating back to 627 B.C.E. when the Corinthians and settlers from the ancient Greek city of Corcyra, situated in the island of Corfu, invaded the Illyrian territory of the Taulanti people.

Because of its long history, the city is naturally brimming with ancient archaeological sites and findings, including the famous amphitheatre of the Roman Emperor Hadrian, whose 15,000-seats capacity make it the second biggest amphitheatre in the Balkans.

Durrës is a fantastic destination for history and art: beyond the Archaeological Museum, visitors can explore the Ethnographic Museum, which was one home to famous actor Alexander Moissi, and the centrally-located Art Gallery.

Durrës is also Albania's most popular destination for a day by the sea. Durrës Beach stretches out for more than ten kilometres along the city's waterfront.

The PA is located nearly two kilometres from the nearest beaches in the area which are mostly frequented by daily visitors.

### 4.3.6. Vulnerable people

Vulnerable groups include people who, by virtue of gender, ethnicity, age, physical or mental disability, economic disadvantage or social status may be more adversely affected by a project than others, and who may be limited in their ability to take advantage of a project's development benefits. The vulnerability of these groups is also based on a lack of opportunities granted, to participate in local decision-making, as well as on their economic vulnerability.

The social security system in Albania provides assistance to the most vulnerable families. However, the social security system has a more restrictive evaluation system than the one that will be applied during the socio-economic survey. The criteria are linked to the pre-existing vulnerability and correspond to the description of economically or socially disadvantaged households, which may most likely be adversely affected by the Project. The socio-economic survey for the ESIA will identify the pre-existing vulnerable people based on but not limited to the below criteria.

- Widows living alone and/or head of family
- Households who rely on social assistance for income or has limited incomes/resources
- Households who rely on agriculture and livestock activities

Vulnerable people may be more adversely affected by the land acquisition process than others and who may be limited in their ability to claim or take advantage of compensation. In the context of the project especially for the land acquisition for the OHL vulnerable people include.

- Disabled persons, whether mentally or physically
- The elderly, particularly when living alone and/or have no networks of solidarity to support them;
- Households whose heads are female and who live with limited resources
- Households who have no or limited resources
- Widows and orphans
- Households who are affected by the Project but whose ownership rights are not registered or otherwise supported by documentation, thereby putting them at risk of not receiving compensation (this may include informal tenants and sharecroppers, and other occupiers with no legal recognition).

### 4.3.7. Gender analysis

Gender issues are common all over Albania, although the situation is gradually, albeit slowly, improving. Women are the main income contributor only when they are widowed or divorced. In those cases, parents or parents-in-law living with them are pensioners, which places them in the position of being head of the family.

Women usually take care of the children and the home. Due to cultural and religious reasons, women were usually considered as ‘those who have to take care of the family” but this is gradually changing. Women have now more freedom, attend school and university, as much as men. However, in rural areas, there remains some tendency to not allow women to attend university.

Usually, women state that they feel as equal partners to their husbands. Although during the community discussions, usually men are the ones that still represent the respective family, when it comes to family matters in the house, women have an equal role in decision-making. Further, school attendance is fairly equal. In some areas women usually attend tertiary education to a greater extent than men, who usually choose to start working instead.

Even if some forms of female discrimination (such as marriage without their consent) are not occurring theoretically anymore, much has to be achieved in order to reach gender parity. Only in very rare occasions do women own a piece of land or house. Only when their husband has passed away or due to inheritance law, they become the first beneficiary and will then pass ownership onto their children, usually male. There have been a lot of improvements made in this direction, but some of the cultural and traditional beliefs still persist, especially in remote rural areas.

### 4.3.8. Geological-geomorphological-sedimentological-oceanographic features of the coastal area of Durrës bay

The coastal area of Durrës is built from the structural relationships of the molasse deposits of the Pranadriatic Lowland.

**Kryevidhi anticline.** These are built from the deposits of the Pliocene and both sides fall at an angle of 25-30°, complicated on both sides with tectonic detachments up to the appearance of flowers and are separated from each other, with tectonic fractures crossed by Shkumbini river.

Neotectonic structure and its role in the geological-tectonic construction of the Durrës region
Based on the synthesis of the studies performed, carried out by a complex of geoscience disciplines, the Durrës Bay region in terms of the development of the types and nature of Tectonic and Neotectonic structures, represents a very complex and complicated region in terms of geological - tectonic construction of this region.

Based on the historical data and the geological-tectonic construction of the study area, the coastal part of the Durrës Bay area is close to and under the influence of the tectonic front of the Albanian Orogen. This fact has made this tectonic movement with powerful compression the cause of the generation of the strongest earthquakes in the territory of Albania.

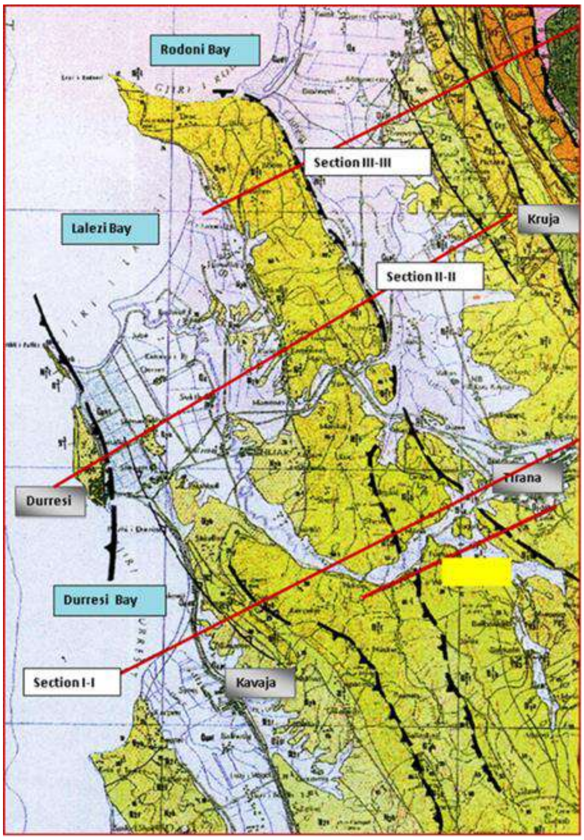


**Figure 41. Geological map of the Durrës - Krujë - Tirana - Kavajë region, scale: 1: 200000.**

**Anticlinal structure of Durrës.** This structure is represented only by the eastern side, which near the sea has Pliocene and upper Miocene deposits below them (with gypsum in Durrës - Currila). The western wing of the structure is immersed in the waters of the Adriatic.

From the seismotectonic point of view, the area under study is part of the Ionian-Adriatic seismic belt, which is divided into three large sectors, through transverse tectonic faults near Lezhe and the one north of Sazan Island, thus forming three areas of seismic sources (seismogenic zones that have a kind of independence from each other).
The Tirana-Durrës area is included in the area of seismic sources of the Paramountainous (Pranadriatic) Lowlands, estimated with the maximum expected magnitude of earthquakes Mmax = 7.0 (Aliaj et al., 2004), therefore, it is included in one of the most powerful seismogenic areas of our country, with the expected high seismic potential.
Based on the historical data and the geological construction of the area under study, in particular, the coastal part near Durrës, is located near the overriding front of the Albanian Orogen, and for this reason, the movements in compression are among the strongest here, which are the cause of the generation here of the strongest earthquakes that have affected our country, with magnitude up to M = 7 or $I_0$ = 9-10.

### 4.3.9. Archaeological and Cultural Heritage

Based on the review of published literature, NICH website, the results of the surface archaeological survey in the framework of the implementation of the Spitallë PV project located in the municipality of Durrës, there were no significant cultural heritage assets identified. Archaeological remains in the form of surface finds of pottery and tiles were encountered and these are considered as being brought to the site from work within the city of Durrës. However, due to close proximity of the city, it cannot be discounted that archaeological remains may be present beneath the ground surface.
It is considered that there is a low potential for unknown cultural heritage to be uncovered during the construction process.

The Coastal Lowlands, of which Durrës is a part, is geologically considered to be the youngest part of Albania (Kabo 1994: 179-203), being established as a continental land at the end of the Pliocene (5.33 - 2.58 million years BP) and mainly during the Quaternary (2.58 million years BP - ongoing). Earlier, along the end of the Miocene (23.03 - 5.33 million years BP) and the early Pliocene (5.33 - 3.6 million years BP) in this territory stretched a shallow sea in the form of a lagoon. With the opening of the Strait of Gibraltar, as a result of tectonic movements, the waters of the Atlantic Ocean flooded the Mediterranean, raising the level of the Adriatic Sea. At this time, this sea covered almost the entire Coastal Lowland of today. Layers of conglomerates and sandstones were formed, followed by clay. Along the Pleistocene, uplifting movements led to the creation of stere, and water emerged, in the form of islands, a series of hilly anticlines, including the hills of Durrës and Rodon. While in the synclines (separated from the anticlines) the deposition of alluvium from the rivers continued gradually bringing their emergence above the water. Such movements combined between them created lagoons, which in time were filled, the coastline was pushed, and other lagoons followed. Uphill movements in the Coastal Lowland were accompanied by tectonic faults, raising them further in height, among which Durrës Mountain and Cape of Rodon are prominent examples.

Along the Quaternary, as the process when the Coastal Lowlands continued to create, solid river inflows continually pushed the coastline westward. During the process of rising above the water of the Coastal Lowland, characteristic landscapes were created, part of which was the paleo-marshes. These were remnants of sea bays entering the interior of the Lowlands in the lower parts of the relief. The weakening of the connections with the sea transformed it into a swamp area,

The creation of swamps, including that of Durrës, has come as a result of a series of factors. Filling the river beds with alluvium brought out the river bed, and the stagnant water turned into swamps. The intensive rise of the territory from neotectonics movements is related to natural but also human factors (e.g., deforestation). The deposition of alluvium in river estuaries created mudslides, becoming an obstacle to the free flow of water.

The importance of the Adriatic Sea and its formation processes concerning the geomorphology of Durrës (Papa 1985: 96-116) is also an important consideration; The southern Adriatic (also known as the Albanian Basin) has a sedimentary origin, with an asymmetric structure and the morphology of the Albanian Adriatic Sea shelf represents three generations, of which only the upper one is of interest to us. - the coastal shallows, which is a flat coastal lowland, where the accumulation of sediments from the Pleistocene until today has been formed mainly by the activity of the waves. This belt extends approximately to a depth of 50 m. Generally, the coast of Durrës belongs to the type of alluvial-marine lowlands, with the character of sediment accumulation. While Kepi i Palit and Cape of Rodon are sectors where erosion predominates (Papa 1985: 111).

In the Durrës region, the coast has progressed towards the land in the early Quaternary, during the later post-glacial (Alerodian) era (Papa and Pengili 1981), taking its present form. At sea, beneath the fine Aleurotic-deltaic sediments, thick gravels and sands are found that cover with transgression the old relief of the Tortonian root rocks, which constituted the ancient Pleistocene shoreline. When these findings are compared to the archaeological findings and the reality of today's terrain, the data is consistent with the presence of conglomerate rocks that still appear above sea level as well as with massive layers of gravel, discovered during archaeological excavations in the southern extremity of the city.

Of importance in creating the geomorphology of the territory of Durrës is also tectonic movements, which are still active today (Luka 1995: 271-283). The plain and hilly relief in the Durrës basin, which belongs to the Middle Quaternary, is still forming today. This territory is considered among the regions with high seismicity in the country. Based on some geodetic measurements carried out in the years 1987-1990, it has been noticed that all measured points have negative vertical displacement (decrease). This movement is more pronounced in the plain part, while in the hilly part they are smaller. In the city of Durrës itself, these reductions went up to 28.8 mm, followed by the beach area of Currilave. This landing site has been explained by the sinking of Durrës Bay and the Durrës-Rrashbull cross-section. In the territory of the former swamp, the values of reductions were reduced from the centre to the periphery. In general, the tendency of landing structures was oriented SE-NW. The hilly belt of Durrës had the most sensitive point of landings at the hydropower plant (Portëz) and the largest in Currila. This tendency is related to the tectonic detachment of the western wing of the anticline structure of the Durrës - Portëz hills.

Durrës and its surroundings inherit a great archaeological record, with numerous historical and cultural values such as the amphitheatre, fortification walls, castle, cult objects, mosaics, Byzantine forum, Roman public baths, Beauty of Durrës, wall in Porto Romano, Roman Water Supply Romanat -Dyrrah, etc. In addition to the immovable monuments, a large number of thousands of objects with outstanding archaeological values have emerged from the underground of this city. The city of Dyrrah, founded as a Greek colony, has its beginnings since 627 p. Kr., and since that period it has generally developed continuously, shrinking or expanding depending on and with the situations that the Mediterranean society of that period was going through. The overlapping of the archaeological layers in this city has caused their thickness to increase from the settlements on the hill towards the seashore.

Due to the population in the modern period, the excavations in centre of Durrës have been limited, where we can mention the partial discovery of most of the monuments: amphitheatre, Roman baths, Byzantine forum, and the wall of late antiquity, the ancient sanctuary on Dautaj hill, etc. In recent years, rescue excavations carried out in the protected archaeological zones A and B have documented parts of the city neighbourhoods of the Roman period and late antiquity as well as layers of medieval archaeological material. A considerable number of findings have been tombs discovered by chance or during rescue excavations, belonging to the Roman period and that of late antiquity. They have been discovered both in the hilly area and on the borders of the Durrës swamp. In the Swamp area, it is worth mentioning the aqueduct and the temple. Near the construction site is the Muri i Portës, and the Neolithic Settlement in Porto Romano, as well as the ruins of a temple on the eastern side of the hilly range "Durrës Mountain.

In addition to the items that were surveyed in the tracts, the study identified in the surrounding area there is a record of a CH monument such as Amphitheatre of Durrës (Myrto 1981; Toçi 1965), Rotunda (Miraj 1991), the prehistoric site at Kepi i Palit (3.6 km), Roman Baths, Shën Vlash Monastery, Aqueducts remains, Necropolis (Hidri 1986, 1996), Bastioni Juglindor, Archaeological ruins in Qerret and Fllakë villages, and Muri i Portës to mention a few, as provided in Figure 41.
Figure 42 shows the location of the closest cultural heritage assets in relation to the PV Project site and along the OHL route. Further research will take place during the field work as part of the ESIA Phase to identify archaeological and/or cultural heritage objects within the area of influence of the PV Project site and the transmission line route.

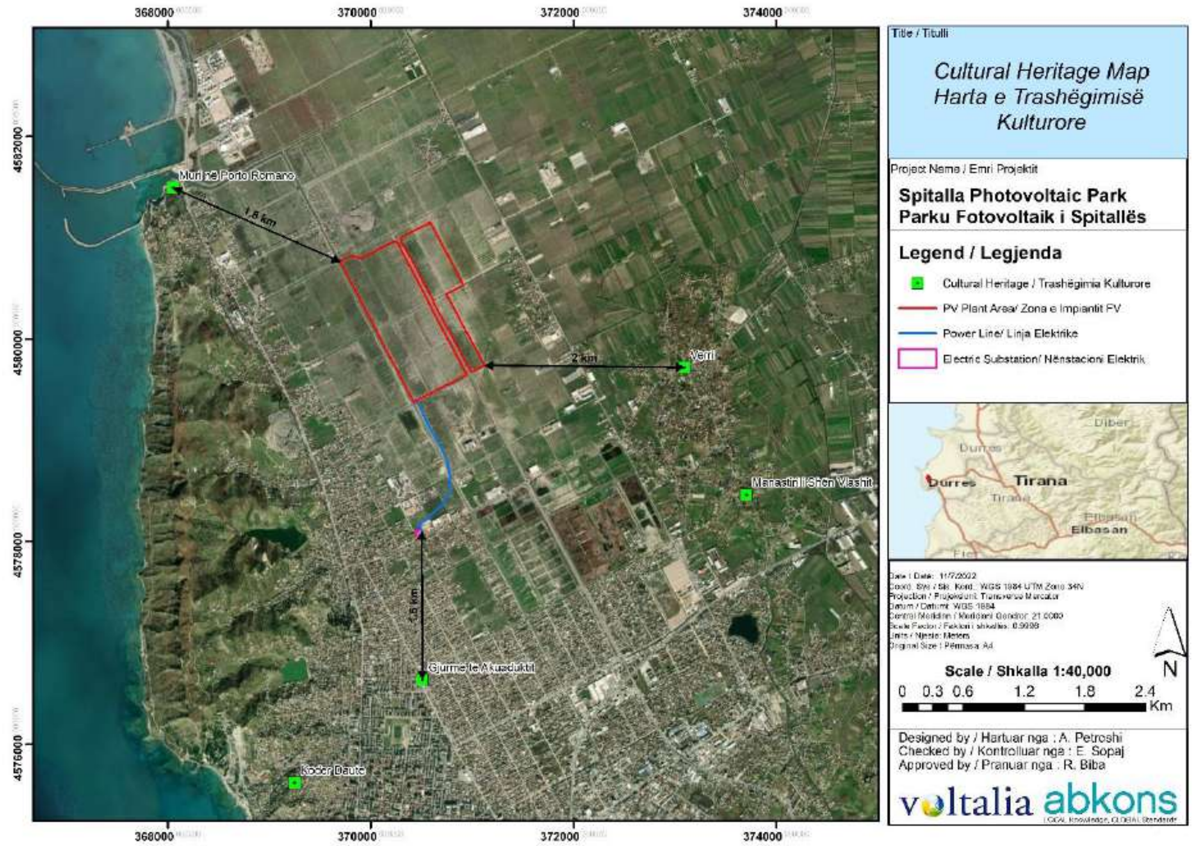


**Figure 42. Cultural Heritage Map of the Project Area**

#### 4.3.10. Infrastructure and access roads to the area

The proposed project area has a good infrastructural access for the realization of the construction and operation of the proposed plant. The selected plot is crossed by the continuation of an access road, bordered on the West by the landfill "Eco Park Durrës", on the North by a drainage canal of the area, while on the South and East by land that is not used. The national road is located a short distance from the proposed area providing the necessary access for the construction and operation phases of the project. Other roads, meanwhile, are rural roads, generally unpaved and rarely used by the local community, mainly for access to other surrounding lands and livestock grazing.
The proposed area is located among the highly industrialized areas of Durrës-Tirana and is declared as an Economic Region supported by the "Integrated Cross-sectoral Plan for the coast 2015-2030". As such, the area in question represents a high level of electricity consumption in the 110/35/20/6 / 0.4 kV network for industrial, service and residential purposes. The area is also covered by a relatively high-level voltage supply and has lines dedicated to the Porto Romano power plant and the residential area of the "former Spitalla swamp". It is a fact that the power supply infrastructure is capable of absorbing the electricity produced by PV at the level of 50 to 120 MWp.

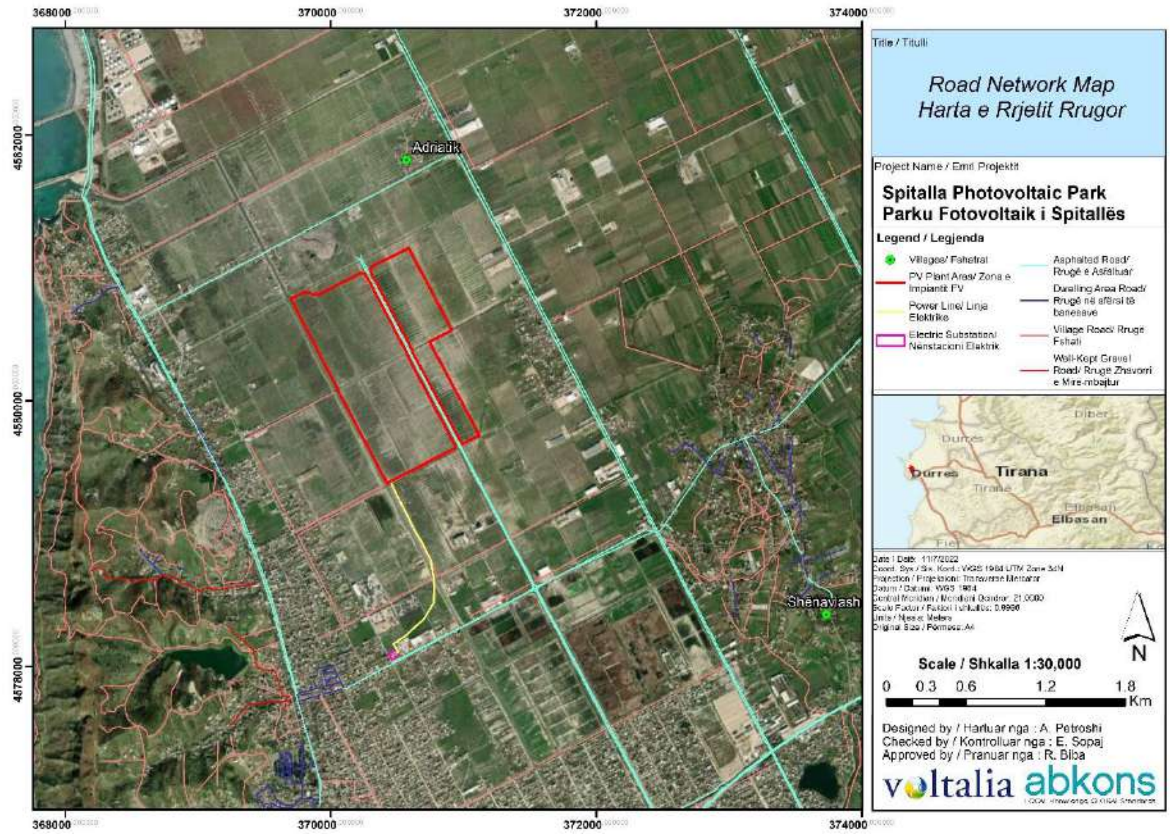


**Figure 43. Map of the Roads in the vicinity to PV Plant**

## 4.4. Key Initially Identified Sensitive Receptors

Based on the above we have initially identified the following as the key important / sensitive environmental and social receptors associated with the construction and operation of the proposed Project:

- Irrigation and drainage channels within the PV Project area and their associated habitats and ecology (Refer to Figure **13** and **Figure 17**, **Figure 18**, **Figure 19**, **Figure 20**);
- Ground nesting birds potentially using the PV Project site area (Refer to **Figure 34**);
- Sensitive ecological fauna (Refer to paragraph 4.2.4);
- Residential dwellings within 100 m of the OHL route;
- The nearby villages of Rinia and Vrinas (respectively 150m from PV Project site area) (Refer to 4.3.1);
- Grazers using the PV Project area (Refer to **Figure 33**);
- Business owners and householders along OHL route.

# 5. STAKEHOLDER ENGAGEMENT

Stakeholder engagement is key to effective project implementation. The stakeholder engagement process begins during the scoping phase and will continue throughout the lifecycle of the Project. A “Stakeholder Engagement Plan” (SEP) has been developed as part of this scoping phase, and will continue to be updated throughout the project where needed.

Effective stakeholder engagement is a key requirement for ESIAs, and can still be crucial for fostering good relations and improving communication particularly around sensitive issues such as land acquisition. The ultimate objective is to achieve stakeholder ‘buy-in’ to the Project and can be a major step in the process to gaining and maintaining a ‘social license to operate’.

Stakeholders include any individuals or groups who are affected by, or believe that they are affected by, a project, and any individuals or groups that can play a significant role in shaping or affecting a project, either positively or negatively.

## 5.1. Objectives

The stakeholder engagement process is designed to conform to both national and international standards, including the EBRD Performance Requirements. For this Project, the key objectives for stakeholder engagement are:

**Ensure Understanding**: An open, inclusive and transparent process of culturally appropriate engagement and communication will be undertaken to ensure that stakeholders are well informed about the proposed development. Information will be disclosed as early and as comprehensively as possible to ensure stakeholders understand the potentially significant E&S impacts of the Project;

**Involve Stakeholders**: Stakeholders can assist in providing local knowledge to improve the understanding of the environmental and social context and better understand locally-important issues. Furthermore, they can help in developing effective mitigation measures and may have ideas on how to optimise local benefits that can be delivered through the Project;

**Build Relationships**: Through supporting open dialogue, engagement can help to establish and maintain a social licence to operate;

**Manage Expectations**: It is important to ensure that the proposed Project does not create or allow unrealistic expectations of Project benefits amongst local communities. The engagement process will serve as a mechanism for understanding and managing stakeholder and community expectations, by disseminating accurate information in an accessible way.

Engagement with local communities and land users around loss of access to land and health and safety during construction will be of the most importance. It will also be necessary to inform local communities of construction works and increased traffic at peak construction times.

To fulfil the objectives for stakeholder engagement, the Project will develop a plan for engagement with stakeholders through the Project lifecycle. The plan lays out a process for consultation and disclosure. The four stages of the Stakeholder Engagement Plan (SEP) are as follows:

- Scoping;
- ESIA Study;
- ESIA Disclosure; and
- Project Execution (Construction and Operation).

## 5.2. Stakeholder Identification

For the purposes of this Project, a stakeholder is defined as “any individual or group who is potentially affected by the Project or who has an interest in the Project and its potential impacts”. The objective of stakeholder identification is therefore to establish which organizations and individuals may be directly or indirectly affected (positively and negatively) or have an interest in the Project. Stakeholder identification is an on-going process, requiring regular review and updating as the Project proceeds. Below is a summary of the different Project stakeholders; a full list of stakeholders will be maintained in the SEP.

During the scoping phase a preliminary list of project stakeholders will be defined. These stakeholders consist of individuals, groups, and organisations that may be affected by or may influence project development positively or negatively. The list will be developed using IFC and EBRD international guidelines and has considered the following groups:

- national, regional and local authorities;
- local community leaders;
- community members including vulnerable sub-groups;
- national, regional and local environmental and social Nongovernment Organizations (NGOs).

This list of potential stakeholders has been initially prepared and will be continuously revised (expanded or reduced as necessary) throughout the ESIA study.

**Table 20. Identified Project Stakeholders**

| Stakeholders and Types | Interest and role in the project |
|---|---|
| National | |
| Ministry of Tourism and Environment (MTE) | Supervision of the ESIA procedure and approval of the ESIA report. |
| Ministry of Infrastructure and Energy (MEI) | The Ministry has a much broader responsibility as in addition to energy it includes transport, spatial planning and telecommunication, which is expected to facilitate coordination between sectors. |
| Ministry of Agriculture and Rural Development (MARD) | Ministry of Agriculture and Rural Development (MARD) is responsible for managing water resources, irrigation, drainage and flood protection. The Ministry coordinates priorities among different purposes and different users of water resources. |
| National Environment Agency (NEA) | Supervision, implementation of the ESIA procedure and review and approval of the ESIA report. Supervision of the public engagement during the ESIA process. |
| National Territorial Planning Agency (NTPA) | National Territorial Planning Agency (NTPA) is a public institution responsible for spatial and urban planning, crucial steps in the development process for infrastructure projects, within MEI. |
| National Agency for the Protected Areas (NAPA) | NAPA is a public body under the MTE, which is responsible for the management of protected areas. |

| Stakeholders and Types | Interest and role in the project |
|---|---|
| National Institute of Cultural Monuments – (NICM) Ministry of Culture | Protection and conservation of the National cultural heritage; shall be informed of chance findings during the construction activities. Provide information on the cultural heritage in the project area. |
| Transmission System Operator (OST) | Manages the electricity transmission system in Albania. |
| Regional | |
| Regional Directory of Environment, Durrës Region | Supervision and implementation of the public consultation process. Assist and publish the Public Hearing notice and the Non-Technical Summary (NTS) at its webpage (hosted at NEA website). Attend the Public Hearing process and report to NEA about the compliance of the project with public consultation procedure. This report is important for final decision making by NEA and MTE.<br><br>Certification of the public consultation procedure. |
| Drainage Board | Drainage Board is responsible for managing the irrigation, drainage and flood protection. |
| Regional Agency for the Protected Areas (RAPA) | RAPA is a public body under the NAPA, which is responsible for the management of the Regional protected areas. |
| Prefecture of Durrës Region | Reporting key concerns/opinions to the Government. Role in facilitation of the public engagement and hearing process. |
| Regional Council of Durrës | Reporting key concerns / opinions to the Government. Role in facilitation of the public engagement and hearing process. |
| Mayor of Durrës Municipality | Elected representative of the community, reporting key concerns / opinions to the Government. Role in facilitation of the public engagement and hearing process. |
| Technical Directories of Durrës Municipality | Management of the local resources within the given competencies and technical support to the mayor decision making. Role in facilitation of the public engagement and hearing process.<br><br>- Urban planning directory (includes also environment), provide information for the land use plan in the project area. Provide information to protect the environment in the project study area.<br><br>- Agriculture, forestry, irrigation and drainage directory, provide information for the agriculture land use in the project study area. Provide information for the forest's areas in the project study area. Provide information for the drainage system and plans in project study area. |

| Stakeholders and Types | Interest and role in the project |
|---|---|
| | - Water supply enterprise provides information for the water supply systems in the project study area. |
| Local | |
| Administrative Units of Rrashbull and Katund I Ri | Role in facilitation of the public engagement and hearing process |
| Local communities in the project area | Settlements and households likely to experience impacts pertaining to land loss, economic displacement, disturbance from construction activities |
| Business community members at the project area | Potential partners in managing potential cumulative impacts during the construction phase of the project |
| Regional and Local NGOs | Interest in environmental protection and disclosure of the project impacts and mitigations strategy |

Detailed stakeholder analysis and the future engagements and the list of stakeholders is explained in the SEP and updated as the Project moves on in the future phases.

## 5.3. Summary of the ESIA Stakeholder engagement process

A letter notifying Interested and Affected Parties (I&APs) of the application for environmental authorization, will be sent to all registered stakeholders together with a Background Information Document (BID). An on-site notice, providing a brief background on the project and contact details in order for I&APs to request further information and/or to register as a stakeholder will be posted at each project location (i.e., near public buildings).

The BID will explain the project and the ESIA process in simple terms, and provides details on how and where comments and input could be given. The BID will be used to disseminate basic Project information to stakeholders at the public consultation of scoping phase, and will also be used as a notification tool for additional stakeholders and for the face-to-face and other engagement activities during the ESIA process.

Public meetings will be held during both the scoping and ESIA phases of the Project to provide stakeholders with background information about the proposed project and to give them the opportunity to raise issues and/or concerns that need to be addressed during the project.

Invitation to stakeholders will be via an invitation letter that is to be prepared for stakeholder meetings in order to introduce the proposed Project and invitation for participation. All the letters of notification will be distributed to key stakeholders' groups identified. Other forms of notifications to be used for consultations include putting of posters in the affected villages and residential and commercial settlements, delivering of flyers, etc.

The draft scoping report will be available to I&APs for comment on the developer's website and hard copies will be made available for perusal at the municipality premises and regional environmental agencies. The comment period will last 30 days.

The Final Scoping Report will be made available for comment to register I&APs on the developer website. A letter notifying all registered I&APs of the public comment period will be sent via email.

The Draft ESIA Report will be made available to I&APs for a 40-60-daycomment period on the developer's website.

A final public meeting will be held during the ESIA phase (in line with national legislation on EIA) to provide stakeholders with the progress of the ESIA process and present the findings of the specialist studies and recommendations made. The public hearing report will be prepared based on the obtained feedback, questions and respective answers from stakeholders and interested and affected parties, and will be part of the application dossier.

## 5.4. Consultations During Scoping Phase

Initial consultations for the scoping phase have been carried out with national, regional and local authorities, and other interested stakeholders within or nearby the project area. Any other affected communities and other key stakeholders that were not identified during the Scoping phase will be identified and engaged during ESIA phase.

The scoping meetings served to provide stakeholders with information about the Project and the ESIA process and to obtain feedback from these stakeholders on their key concerns and issues. The objective is to identify any key concerns or high-level issues that the stakeholders had at this early stage.

In the meeting with the NGOs (PPNEA, AOS and ACEG), taken on 07/10/2021 the following issues were raised:

- Monitoring of the migratory species using the Adriatic corridor;
- Monitoring of nesting of the ground bird species that are active in these areas;
- Avoid the cleaning of the panels with hazardous products or mitigation measures to minimize the impact;
- Use of bird diverters to avoid the crashing of the birds with the transmission lines which is very efficient and low-cost;
- Possibility to make comments and suggestions to the Scoping report once published and in the future phases.

The consultation meetings included PowerPoint presentations on an introduction to the Project elements, an overview of the ESIA process, methodology of baseline study and areas of influence (AoI) and assessment methodology of environmental and social issues. The consultation meetings also included an open forum for discussions and questions from participants. The discussions and comments raised were recorded along with meeting minutes and the attendance register.

Between the 20$^{th}$ of September – 7$^{th}$ of October 2021 a series of meetings were held with the following parties:

- Ministry of Tourism and Environment (MTE);
- National Agency for the Protected Areas (NAPA);
- National Territorial Planning Agency (NTPA);
- Ministry of Infrastructure and Energy (MEI);
- Ministry of Agriculture and Rural Development (MARD);
- Ministry of Culture and National Institute of Cultural Heritage (IKTK) - Ministry of Culture;
- National Environment Agency (NEA);
- Transmission System Operator (OST);
- National and International NGOs;
- Mayor of Durrës Municipality (Technical Directories of Durrës Municipality);
- Rrashbull and Katund I Ri Administrative Units, Municipality of Durrës;
- Prefecture of Durrës Region and Regional Council of Durrës;
- Drainage Sector / Road Department of Durrës;
- Regional Administration for the Protected Areas (RAPA).
- Head of villages of Rinia and Vrinas settlements.

Overall, all the stakeholders were very supportive of the Project and are willing to collaborate and share available information that may be required for the ESIA. Below is a summary list of the main points raised during the meetings:

- The Project is important for Albania's economic development and diversification of energy sector as its very much dependent on hydro power.
- Generally, such projects are viewed as being environmentally friendly.
- Stakeholder engagement is important, especially with the local community and should be coordinated with the other projects being developed and implemented in the area such as the new Industrial Port of Durrës and a residential area, so the project should take into account the cumulative impacts with these projects and the coordination between various stakeholders in their development.
- The project might undergo an in-depth ESIA given the foreseen development of other projects in the same area
- Reflections from the panels might confuse the birds and needs to be considered within the ESIA.
- The nearest Protected Area is that of Rrushkull, which is situated nearly 8-9 km from the project area.
- The seismic risk of the area should be valuated and assessed during the ESIA studies
- The transmission line could affect the birds (collision with lines).
- Will the project impact the drainage system in the area?

A more detailed summary of the stakeholder meetings is provided in Appendix III.

Further consultation may be carried out with the stakeholders already consulted during the Scoping phase during the ESIA studies.

In addition, once the Scoping report has been drafted, community meetings will be held with local residents to gather views and suggestions from local communities.

Once the draft Scoping Report has been published and submitted to the MTE (Ministry of Tourism and Environment), it will be subjected to a review by the experts of MTE, NEA and other national, regional and local institutions, as well as review from external specialists. All comments, suggestions and questions related to the report and project can be addressed to the official website of the developer. Following the review period of Scoping Report, the findings will be collected and addressed as per procedures and guidelines. The Project will then take appropriate actions to address those relevant comments received from public and government authorities for the final Scoping Report.

Upon satisfactory completion of the actions required to address the findings, the Scoping Report will be finalised and the MTE will issue the authorization for undertaking the full ESIA.

## 5.5. Grievance Mechanism

The Developer has established a grievance mechanism as part of the SEP so as to be aware of and respond to stakeholders' concerns and to facilitate a resolution for stakeholders' grievances. The grievance mechanism will address concerns promptly and effectively, using an understandable and transparent process that is culturally appropriate and readily accessible to all segments of the affected parties, at no cost and without retribution.

International good practice outlines requirements for grievance mechanisms. Grievance mechanisms should receive and facilitate resolution of the affected communities' concerns and grievances. It includes an independent, objective appeal mechanism, which will not impede access to judicial or administrative remedies. The process requires the following steps:

- Identification;
- Registration and categorization;
- Acknowledgement;

- Investigation/response;
- Communication of the response and request for stakeholder's feedback; and
- Close-out.

In order to ensure that the grievance mechanism is inclusive and culturally appropriate, stakeholders have several methods of communication available to them to report a grievance.

In this way, it is important to ensure that these grievances are accepted, investigated and resolved quickly. Grievances can be an indication of growing stakeholder concerns (real and perceived) and can escalate if not identified and resolved. The management of grievances is therefore a vital component of stakeholder management and an important aspect of risk management for a project.

## 5.6. Socio-economic Baseline study

The Community Engagement during the ESIA will be established in order to collect and gather further socio-economic data. Baseline data covers the field surveys as a key element of the social and health survey. Information will be gathered on existing areas of interest within the "Project Area (PA)".

Primary socio-economic data will be collected via the following:

- Undertake site visits to hold community meetings and collect additional baseline data;
- Obtain available information from the socio-economic data from the municipality of Durrës;
- Capture comments and grievances from communities;
- Gather relevant primary socio-economic data through key informant interviews, focus groups discussions and stakeholder engagement.
- Update socio-economic and health baseline with primary data;
- Assess cumulative impact of development with current and planned developments in the area.
- Draft mitigation measures will be drafted and incorporated into the Environmental and Social Management Plan.

The primary data gathering survey will be gathered through Focus Group Discussions (FGD), Key Informant Interviews (KII), interviews with community leaders and businesses in the PA.

The FGD are organized discussions with a selected group of individuals to gain information about their views and experiences of a topic to help gain insights into people's shared understanding of everyday life and the ways in which individuals are influenced by others in a group situation.

The KIIs are qualitative in-depth interviews with people who know what is going on in the community. The purpose of KIIs is to collect information from a wide range of people, including community leaders, professionals, or residents, who have first-hand knowledge about the community. Interviews will be held with individuals / institutions that have knowledge of a specific subject (i.e., development programs, health, employment, education, and infrastructure) or are informed members of the community. Local government representatives and healthcare professionals will be interviewed to collect the qualitative data.

The number of these interviews will depend on the knowledge and availability of the representatives in the area.

Community meetings will be organized in the PA to present the scoping report and receive feedback from the stakeholders. The BID or other informative documents (e.g., posters) will be distributed to the community in advance of the consultation meetings. This will explain the Project and the ESIA process in simple terms and will provide details on the dates and venues for the community consultation meetings. The results of these consultations and feedback will be presented in the ESIA report.

A combination of desktop and field investigation will take place to identify any vertical restrictions on buildings beneath transmission lines, or a lateral restriction to ensure access and safety either side of the transmission line, including crossing of other infrastructure (other power lines, telephony, antenna, etc within the safety corridor (25m on each side)[39].

Other important activities include understanding whether there are any sensitive spots that may require changes to current Project design, showstoppers, or areas that require the application of special mitigation measures. In addition, the team will observe how settlements are growing, at what speed and in which direction (i.e., towards or away from any facility locations) in addition to sites of future planned activity.

Field observations will also include social and health infrastructure profiling and high-level traffic observations. The Project team will use desk studies and partial surface reconnaissance to identify cultural heritage sites. Field observations will require the recording of GPS waypoints and at least two photographs of each of the sites in question.  All information, including a detailed description of the sites and any potential issues, will be recorded in a waypoint and photo logbook.

[39] *In line with the Albanian standards KTP and KTZ, which have been updated and are in line with the European Standard EN-50351 2012 "Overhead electrical lines exceeding AC 1kV".*

# 6. INITIAL IDENTIFICATION OF POTENTIAL IMPACTS

## 6.1. Introduction

The project will involve a variety of activities, many of which could affect the physical and biological environment, as well as people if these are not appropriately considered during the design, construction and operation of the project.

The Table below presents an initial assessment of impacts identified as relevant to the Project through the scoping process. Potential levels of impact are allocated as 'low', 'medium' or 'high', in order to provide an indication of the emphasis to be placed on the various impacts within the scope of the ESIA. For impacts given an initial rating of 'medium' or 'high', uncertainties relating to these impacts are identified and requirements for further studies / investigations are proposed. This initial assessment has also been informed through the use of the Scoping Checklist[40] (see Appendix I).

It is important to note that the 'low, 'medium' and 'high' impact allocations provide a tool to distinguish between levels of impact for scoping purposes and do not reflect anticipated levels of significance as described in ESIA methodology section.

Where appropriate we have also identified potential impacts that are not considered relevant or have an insignificant to the extent that these can be 'scoped out' of the subsequent phases on the ESIA process.

[40] Source: European Commission's "Environmental Impact Assessment of Projects - Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU)"

## 6.2. Initial Impact Assessment

**Table 21. Initial impact assessment**

| Topic | Potential level of impact | Rationale for initial assessment |
|---|---|---|
| Construction phase | | |
| Environmental impacts | | |
| Generation of dust and particulate matter | Low | Air pollutants generated during the construction phase are limited to dust emissions due to excavations, earthworks and the movement of heavy vehicles and machinery and the emissions caused by the operation of the engines of machinery, heavy vehicles and cars. Dust emissions can cause problems particularly where a project is located close to residential areas.<br>The majority of PDA construction will take place away from sensitive receptors, such as residential communities, with the closest communities located around 600 m from the Project site. However, OHL construction is close to houses and "Aleksander Xhuvani" University. Where construction may take place near to sensitive receptors, potentially dust generating activities will be highly localised and manageable through standard mitigation measures, such as dampening of bare soil and traffic control measures. |
| Emissions from construction traffic | Low | The majority of construction traffic will occur away from sensitive receptors, such as residential communities. Where construction may take place near sensitive receptors, emissions from construction traffic are likely to be limited and manageable through standard vehicle management and maintenance measures. During the movement of diesel vehicles, the most significant air pollutants emitted are the following: $PM_{10}$ and $PM_{2.5}$, CO from inadequate combustion, hydrocarbons (HC or VOC) which are created by the inadequate combustion and NOx which are produced in high combustion temperatures. |
| Noise and vibrations | Low | The majority of PDA construction will take place away from sensitive receptors, such as residential communities, with the closest communities located around 600 m from the Project site. However, OHL construction is close to houses and "Aleksander Xhuvani" University. Where construction may take place near to sensitive receptors and noise generating activities are unavoidable, these will be of limited duration at any one location and will be restricted to times of day that minimise disturbance. |

| Topic | Potential level of impact | Rationale for initial assessment |
|---|---|---|
| Potential impacts on groundwater and surface water quality | Low | During construction phase there will be no significant impacts in terms of geological changes and hydrogeology. The works to be carried out for the Solar PV Park will be small works and mainly above ground. The site for the PV Project is flat and will not require major grading works. There will be excavations, e.g., for laying of cables within trenches, but such work can be effectively managed through standard good environmental construction practices. It should be noted that the support structures for the PV panels which be installed by piling and therefore this limits the need for excavation or clearing of soils.<br><br>The construction should not destabilize soils thereby limiting the potential for soil erosion during heavy rainfall and sedimentation in drainage canals and irrigation canals of the area. Other related impacts may include accidental events (spills, leaks and uncontrolled releases) due to the presence of hazardous materials on site, including fuel. In addition, storage and handling of hazardous and non-hazardous wastes within the site may pose risks for possible contamination of soil, especially in cases of non-proper waste management practices.<br><br>For the OHL portion of the project this will not involve opening of significant cuts in hilly or mountainous terrain or tunnel openings. The works to be carried out will mainly take place above the ground and will affect the top layer of non-irrigated arable land. |
| Potential impacts on soils | Low | Implementation of standard practices to avoid oil / fuel spills and the release of wastewater from construction site areas will prevent / minimise the release of any chemical effluent that has the potential to contaminate soil. In addition, areas of soil excavations will be backfilled and follow standard good practice, with areas of loose / bare soil to be revegetated to minimise potential soil erosion. |
| Direct impacts on Protected Areas | Low | The proposed PV Project site and associated infrastructure is located in a distance from Protected Areas and no direct physical impact on it during the construction phase are anticipated to occur as all activities will be within the Project footprint itself. |
| Impacts on habitats and flora | Low-medium | Site preparation and construction works site may affect a large surface area of vegetation. However, whole site clearing and grading should not be required with panel support structure to be installed through piling. Furthermore, the vegetation within the PV Project development area has been identified as already severely degraded due to past agricultural activities and grazing. This land is a low production saline soil category which cannot be used for agriculture. |

| Topic | Potential level of impact | Rationale for initial assessment |
|---|---|---|
| | | Impacts from excavation and construction activity on habitats and species, specifically impacts on burrowing species, and effect of sediment and contaminant input into surrounding water bodies will be considered within the ESIA and appropriate mitigation measures identified. |
| Impacts on fauna and aquatic ecology | Low-medium | The drainage channels within the PV Project and those intersected by the OHL are important and sensitive habitats for aquatic life, including frogs, toads, terrapin, fish etc, as they provide freshwater breeding and feeding grounds for a number of species, and may also offer suitable habitats for mammals, such as otter. Direct impact on these areas can be avoided through the implementation of appropriate mitigation measures.<br><br>No significant bat activity has been identified during the initial field observations and no endangered species were identified as being present within the Project area. Terrestrial fauna is considered generally mobile and will be able to avoid direct impacts due to construction activities.<br><br>Risks associated with the construction activities in the project area can be adequately managed through appropriate and standard construction management practices. The areas of direct ground disturbance associated with construction of the OHL will be limited in size in terms of tower footprints and are very localised. |
| Impact of birds | Low-medium | As birds are highly mobile the only significant impact during construction relate to ground-nesting birds, if present in the PV Project area and in particular during breeding season. During the scoping phase presence of ground-nesting birds were identified within the PV Project footprint.<br><br>Therefore, before reaching any final conclusions regarding the avifauna, Voltalia has conducted bird surveys in the project area and along the transmission lines at more appropriate time that adequately covers bird breeding season June 2021.<br><br>Other general risks to birds associated with construction activities can be adequately managed through implementation of appropriate management practices. |
| Visual and Landscape Effects | Low | Construction activities and presence of construction equipment, machinery and materials will only be temporary and limited, and considering no sensitive receptors lie within 100 m of the Project site impact on visibility is anticipated to be minimal. |

| Topic | Potential level of impact | Rationale for initial assessment |
|---|---|---|
| | | The project is very close to the University “Aleksander Moisiu” Durrës and Porto Romano mainly industrial area; therefore, the visual impact will be small and insignificant. This photovoltaic park will not affect the tourism of the area. |
| Waste Generation during construction | Low | Disposal of packaging waste and domestic waste from workers during construction at licensed disposal sites. There may be temporary storage of excavated material (spoil material) on site during construction. All construction waste can be effectively managed following standard waste management procedures. |
| Socio-economic impacts | | |
| Land acquisition and changes in land use | Low | Based on initial site observation the area of land designated for PV Project has no permanent agricultural activities being undertaken as the soil quality is identified as being low due to its high salinity. Moreover, the land is classified as state owned and no land users have been signalled or identified so far.<br>The Project will require permanent land acquisition for the placement of the towers for the OHL. Access to land will be restricted during the construction phase whilst the conductors and wires are laid. Therefore, areas subject to these ground works will not be accessible for a determined period of time.<br>Consultation with landowners / land users is required, with agreement of compensation for land acquisition, if applicable.<br>The project-related land acquisition and/or restrictions on land use may cause economic displacement that means loss of assets or access that leads to loss of income sources or other means of livelihood. In accordance with EBRD PR 5 “Land Acquisition, Involuntary Resettlement and Economic Displacement” and IFC PS5 “Land Acquisition and Involuntary Resettlement”, the company shall develop a Livelihood Restoration Plan (LRP) or Resettlement Action Plan (RAP) to serve as a guidance for the land acquisition process post ESIA. |
| Community Health, Safety and Security | Low - Medium | The construction area is located near some settlements that might cause a risk to these communities. Anyhow, any construction that may occur close to communities will be localised and community health, safety and security can be managed through standard construction management measures. Use of the existing roads to access the project site and the presence of foreign employers could bring risks on community health and safety.<br>From an overall desktop assessment of the proposed OHL, there were identified several restrictions on buildings beneath transmission lines, especially near the substation of Porto Romano. In addition, a pre-existent OHL |

| Topic | Potential level of impact | Rationale for initial assessment |
|---|---|---|
| | | crosses the same area, causing in such way possible cumulative impacts on the receptors, which are in majority commercial activities and businesses. On the other hand, no crossing of protected areas, forest habitat or cultural heritages sites seems to be affected by the project facilities.<br>Moreover, other restrictions will be further assessed within ESIA through field investigation to check for crossing of other infrastructure (other power lines, telephony, antenna, buildings, etc), requiring amendment of the proposed OHL route. |
| Construction Traffic Generation | Low | There will be significant vehicle movement during construction phase due to delivery of equipment and materials, as well as workers and transport of wastes. Generation of traffic on local road network, capacity of network (local roads), safety issues, environmental capacity, and potential impact on other road users. Standard construction traffic management measures should be sufficient to manage traffic impacts within more populated areas. |
| Employment Opportunities | Low (positive) | During construction the Project will provide direct and/or indirect short and mid-term employment opportunities. There may be new opportunities for local businesses as may be needed by the project development. Workers will attain new professional skills through training and work experience which will enhance future employment opportunities. There are not yet data on the number of the required staff needed for the construction and operation periods, but the project will seek to maximise opportunities for local employment. |
| Cultural Heritage | Low | According to the preliminary desk studies, and consultation with Ministry of Culture, no cultural heritage objects are located within 1.8 km buffer corridor of PV project footprint and 1 km buffer corridor from OHL route.<br>Further research will take place during the ESIA Phase and consultation with the Ministry of Culture, to identify archaeological and/or cultural heritage objects within the area of influence of the transmission line route.<br>A Chance Find Procedure will be implemented for the Project construction activities. |
| Operational phase | | |
| Environmental impacts | | |

| Topic | Potential level of impact | Rationale for initial assessment |
|---|---|---|
| Emissions to air and noise generation | Low | PV projects are passive in nature and there are no emissions to air and no significant noise sources associated with the operational phase of the Project. The only traffic associated with the operation phase relates to workers (circa 200 persons) arriving to site and any vehicle that may be required to manage panel cleaning.<br>Corona discharge may generate limited noise during foggy, damp, or rainy weather conditions but this is very localised (within a few tens of metres). Noise impacts can be reduced by using rigid spacers and increasing conductor radius in sensitive areas. |
| Waste and Wastewater | Low | As PV projects are passive in nature the only wastewater and waste generated during operation will be limited to that produced by the small number of permanent workers present on site. Water from panel cleaning will not contain any chemicals, does not require treatment and therefore is not considered wastewater.<br>Very limited requirement for hazardous materials or chemicals during operation phase. |
| Impact on water resources and use | Low | The Solar Park will cover about 120.85 ha of land; however, the area will remain largely open with drainage and irrigation channels to remain intact and will continue to function as normal.<br>Water will be required for the periodic cleaning of the panels and this will be supplied from an approved source. |
| Impact of protected areas, habitats, flora and fauna | Low | No protected areas and habitats or protected status flora and fauna are founded in PDA. The relevant natural area identified closest to the project area is the Rrushkull. Protected Area located in the Lalzi Bay, 8 km north from the project area. No interference of the proposed activities on this area is foreseen, however water, air and biodiversity contamination will not be allowed.<br>During operation vegetation will be allowed to recover with plant growth controlled to prevent plants shading panel. As Solar PV projects are passive by nature there will be limited impact on fauna during operation phase. |
| Impacts on birds | Medium | Protected Area located in the Lalzi Bay and Rrushkull protected reserve are both Important Bird Areas due to the large number of waterbirds visiting then in breeding season, wintering season and migratory season.<br>Although some concerns have been raised about the potential impact of large-scale solar PV projects resembling water bodies and therefore attracting watering birds this impact has not previously been identified as a major issue |

| Topic | Potential level of impact | Rationale for initial assessment |
|---|---|---|
| | | on other similar large scale PV projects. Furthermore, initial indication is that the OHL route does not cross such migratory routes.<br><br>As solar PV projects cover a large surface area there is the potential risk that their presence may impact ground-nesting birds, if present in the Project area; this risk will be considered further in the ESIA.<br><br>There are potential impacts on birds utilising transmission towers for roosting and nesting by placing the nests across wires or using holes in the tower itself. Furthermore, there is the potential risk of collision with the wires for flying large birds and flocks during migration in conditions of poor visibility or in places of narrowing of flyways;<br><br>Further avifaunal studies are conducted to investigate potential impacts on local and migratory species, as well as on ground-nesting birds and identify mitigation measures where appropriate. |
| Visual and Landscape Effects | Low-Medium | There will be changes to quality and character of landscape due to the presence of solar panels across the 185 Ha site, and potential visibility of the Project from surrounding viewpoints. However solar PV panels are low lying structures (no more than 2.5 m above ground level), and this coupled with the limited number of close residential receptors means that visual impacts due to the presence of the solar PV Project are anticipated to be minimal.<br><br>There may be visual impact on residential receptors located close to the OHL route; however, visual impact is considered to be small due to the limited number of residential properties located close to the OHL route. Further consultation with local residents with regards to visual impacts will be undertaken.<br><br>It is expected to have impact on the drivers who will move on the highway crossing the site however proper mitigation measures to reduce the reflection effect will be taken. |
| Socio-economic impacts | | |
| Land Acquisition | Low | Based on initial site observation the area of land designated for PV Project has no permanent agricultural activities being undertaken as the soil quality is identified as being low due to its high salinity. Moreover, the land is classified as state owned and no land users have been signalled or identified so far.<br><br>The Project will require permanent land acquisition for the placement of the towers for the OHL, which might limit the commercial activities subject to land acquisition. |

| Topic | Potential level of impact | Rationale for initial assessment |
| --- | --- | --- |
| | | Consultation with landowners / land users is required, with agreement of compensation for land acquisition, if required. |
| Employment opportunities | Low (positive) | During operation there will be a limited number of employment opportunities, including technical and semi-skilled workers, as well as security staff. |
| Community Health, Safety and Security | Low | The PV Project is near some settlements, but the appropriate security will be implemented to prevent unauthorised access.<br>Traffic movement during operation phase will be limited to only workers arriving at site for work. |
| Potential Impacts from Electric and Magnetic Fields (EMF) | Low - Medium | The area near the substation of Porto Romano crossed by the actual OHL design, is near commercial activities and businesses. A pre-existent OHL crosses the same area, causing in such way possible cumulative impacts on these receptors. |

# 7. PROPOSED PLAN FOR ESIA

## 7.1. Introduction

Once public comments on the Scoping Report have been concluded, the Report will be finalised and will form the terms of reference for the ESIA report. Although this represents the end of the formal Scoping Phase of the ESIA, the European Commission's "Guidance on Scoping[41]", the activity of Scoping should continue throughout the ESIA process, so that the scope of work can be amended in light of new issues and new information. The subsequent Impact Assessment phase is described in more detail below.
The purpose of the Impact Assessment Phase of an ESIA is:

- To address issues that have been raised during the Scoping Phase;
- Address and assess alternatives to the proposed activity in a comparative manner;
- Establish the environmental and social conditions prior to the project establishment;
- Address and assess all identified significant impacts; and
- Formulate mitigation measures.

This Chapter provides the proposed Plan of Study for the ESIA and is structured as follows:

- Baseline data collection and specialist studies
- Impact assessment methodology
- Proposed structure of the ESIA Report.

## 7.2. Baseline study

The baseline environmental and socio-economic status of the project site and surrounding area has provided a context within which the impacts of the Project have been assessed. It has also helped in environmental and social management planning and strategy to minimise identified potential impacts due to the Project activities on the surrounding environment, and provide a reference point against which future changes can be monitored to assess performance.
The environmental and social baseline has be assessed covering an area of 5 km from the Project boundary, as well as 1 km zone along the transmission line route (500 m either side) - hereinafter referred to as the study area (see Figure 44) A reconnaissance survey of the study area has be conducted to identify environmental and social sensitive locations within the study area. Environmental and social baseline data has been collected through primary surveys, specialist studies and observations made during site visits, as well as secondary sources by literature survey and discussions with the concerned stakeholders.
Secondary information for the baseline will be sourced from publicly available information including current scientific literature, non-technical literature (environmental reports, articles, and other EIA and SEA documents if available), online databases and other secondary data sources.

[41] European Commission's "*Environmental Impact Assessment of Projects - Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU)*" 2017

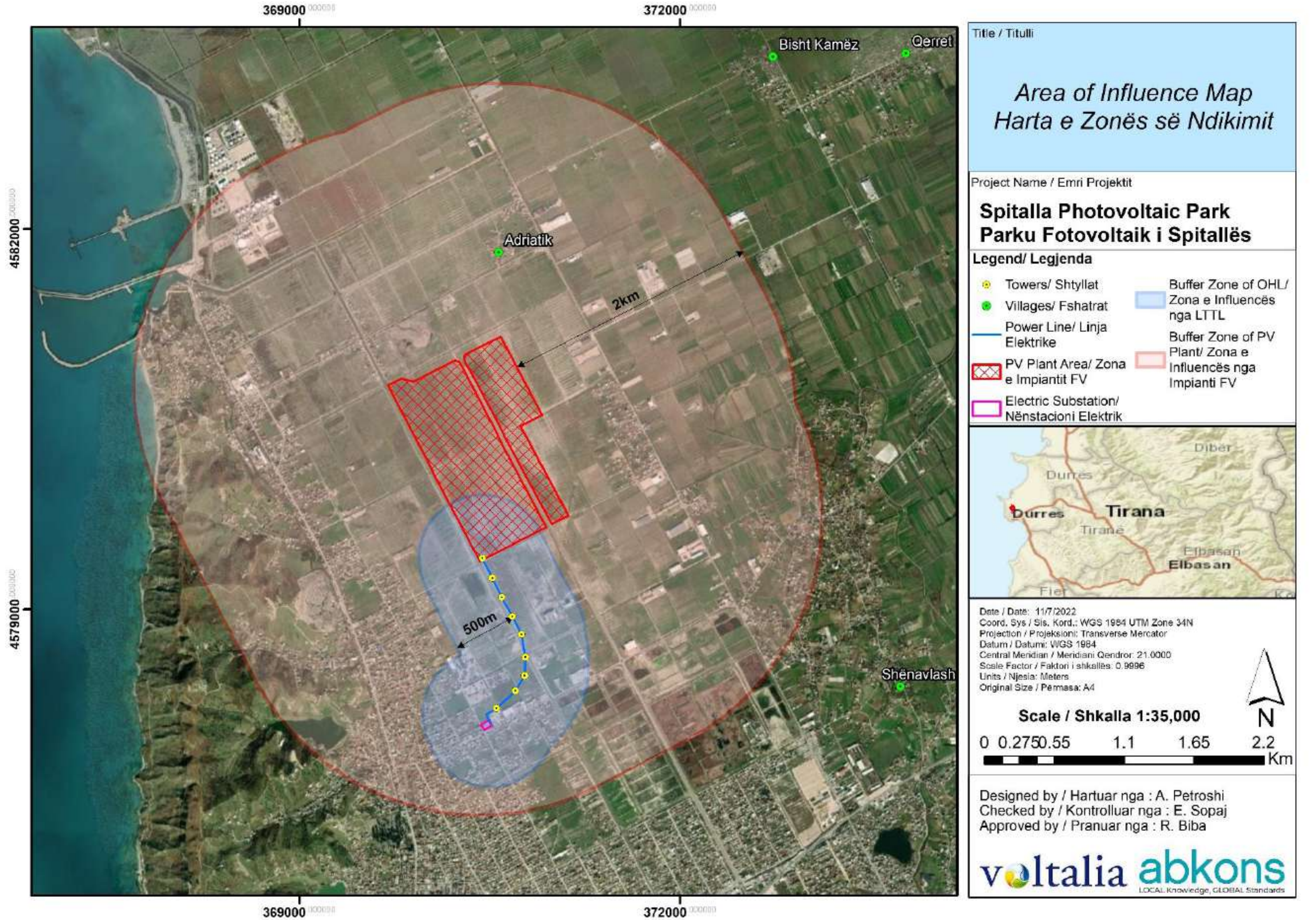


**Figure 44. Map Showing Baseline Study Area / direct Area of Influence**

### 7.2.1. Definition of the Areas of Influence (AoI) for the Project

The extent of the effect of a project activity on a particular physical, biological or social resource will vary and is termed the Area of Influence (AoI). Referring to the proposed project, there will be a specified area of influence for each aspect/component of the environment, including the socio-economic aspect. A preliminary identification of the AoI will be conducted, and may be changed during baseline studies if it will be considered necessary by respective specialists of the Consultant's team.
Specifically, the Areas of Influence will include the following:

- The areas likely to be affected by the Project, Project activities, and Project facilities (direct AoI); and unplanned but predictable development caused by the Project that may occur later or at a different location (indirect AoI);
- Associated facilities that are not part of the project, but would not have been constructed or expanded if the Project did not exist and without which the Project would not be viable; and,
- Cumulative impacts that result from the incremental impact on areas or resources directly impacted by the Project from other existing, planned or reasonably defined developments.

The Consultant considers that the AoI will vary depending on the component or aspect of the environment and type of effect, but in each case, it is defined to include the entire Project area where it is likely that significant impacts could result.
In order to develop a complete understanding of the existing environmental and social conditions (resources and receptors) in the Project AoI, a team of specialists will carry out further desktop and field studies in support to the ESIA process. A conservative but reasonable approach will be taken in defining the AoI.

### 7.2.2. Desktop Studies

Desktop studies will be undertaken to gather environmental data and information for the ESIA study. The type of documents that will be considered may include other ESIA reports, articles, relevant studies, maps, and photos.
Data will be gathered from government authorities, existing projects currently in construction and projects in operation and other relevant infrastructures and facilities, NGOs and relevant research institutions. In addition, a literature search will be carried out to identify publicly available research and scientific reports with relevance to the Project site and general area.
Finally, project engineering studies will be reviewed for quantitative information on environmental elements. Studies that may provide useful data would include geotechnical investigations, process and operations water source investigations, surface water drainage studies, and air emission studies.
Desktop studies shall be undertaken to acquire environmental and social data for the AoI. Sources of existing information relating to the Project AoI and wider area include:

- EIAs conducted in surrounding areas;
- Government Statistics and Development Plans;
- Biodiversity Studies of the Area.

| Nr. | Environmental Attribute | Source |
|---|---|---|
| 1. | Long term meteorological data | • Data from Institute of Geosciences, Energy, Water and Environment (IGEWE) |
| 2. | Geology, Hydrology and Hydrogeology | • Data from Institute of Geosciences, Energy, Water and Environment (IGEWE)<br>• Geological, Hydrological and Hydrogeological Map from National Spatial Data Infrastructure (NSDI/ ASIG)[42] |
| 3. | Land Use/ownership | • Satellite Imagery/ Corine landcover<br>• Cadastral maps |
| 4. | Socioeconomic Environment | • Primary Census Abstract data 2011;<br>• Village Directory Data (2011); and |

[42] https://geoportal.asig.gov.al/en/services?category=geology

| Nr. | Environmental Attribute | Source |
|---|---|---|
| | | • Published research papers, articles and other information available in public domain on aspects such as irrigation, drinking water supply system, livelihood pattern, land, local governance and decentralization, civil society and NGOs as well as economic policies and regional development plans the state is pursuing. |
| 5. | Biodiversity | • Environmental studies, scientific literature and other pre-existing biodiversity assessments available for the project area;<br>• National or regional plans (e.g., Strategic Environmental Assessments, National Biodiversity Strategies and Action Plans);<br>• Conservation programs or initiatives in the area and its surroundings (both conducted or planned);<br>• Protected Areas World Database on Protected Areas (WDPA).<br>• BirdLife International<br>• Location of any habitats of conservation significance, including World Heritage Areas; Protected Areas; Key Biodiversity Areas (KB) (Important Plant Areas), Important Bird Areas (IBA), RAMSAR Sites, Candidate Emerald Sites etc.<br>• Existing species data (e.g., IUCN Red List of Threatened Species, Global Invasive Species Database, IUCN Species Action Plans and nationally protected species lists, i.e., Albanian Red List), to identify if there are any known or potentially occurring threatened species, endemic species and/or migratory species associated within the project study area;<br>• Existing data, to identify any potential invasive species in the project study area site and the surrounding landscape;<br>• National reports on International Waterbird Census;<br>• Other planning documents as Strategy of Territorial Development of Municipality of Durrës;<br>• Outcome from consultation meeting with relevant bodies. |

### 7.2.3. Identified Specialist Studies

A number of potential issues have been identified during this Scoping Study which require specialist studies / surveys to understand the potential impact in more detail. The following specialist studies have been identified as required to address the current data gaps:

- Biodiversity, including terrestrial flora and fauna, avifauna, and aquatic;
- Soil and water quality;
- Socio-economic.

Primary data will be collected by field studies carried out by environmental and socio-economic. Specialists with qualifications in the particular resource area and knowledgeable of the local conditions will be assigned. The overall scheduling for surveys is presented in Table 22, Table 23, and Table 24 below. The below provides the scope or Terms of Reference for each proposed specialist study.

#### 7.2.3.1. Biodiversity Surveys

Biodiversity baseline data collection and surveys has been undertaken by suitably qualified specialists covering the following 4 elements of biodiversity:

- Flora
- Terrestrial fauna
- Avifauna (birds)
- Aquatic ecosystems.

The study area surveyed encompasses

- project footprint and surrounding area up to 2 km radius from the proposed site;
- proposed transmission line footprint, 1 km wide corridor for the transmission line (0.5 km from centre each side) for survey work.
- the surrounding protected areas (southern part of NP) and any areas identified as important following desk top review.

The extent of the site survey area is presented in Figure 44 above, and the scope of the surveys is presented below. The scheduling for the survey is presented in Table 22 and Table 23 below. PR6 PS6 and EU standards will be considered in the assessment of impacts of biodiversity.

**Terrestrial Fauna**

Terrestrial fauna survey has been focussed but not limited in the following animal taxa:

- Bats (all species: roosting sites, foraging areas);
- Other mammals, such as otter, badger, polecat, jackal, dormouse;
- Amphibians & Reptiles, such as frogs & toads, tortoise, pond turtle, terrapin, snakes, etc.

Any species (bat, mammal, reptile and amphibian) present that are listed as Critically Endangered or Endangered, Vulnerable, as well as restricted-range species on the IUCN Red List, nationally/regionally important including those included on the Albanian Red List and/or subject to provisions of Albanian legislation are recorded and will be shown on a GIS map. GPS co-ordinates of any such ‘priority’ species and other identified species are recorded.

Satellite imagery and aerial photographs are used to select sample sites with suitable habitat for ‘priority’ species within the PV Project site, and along the Overhead Transmission Line (OHL) route, such as woodland edges, watercourses (irrigation channels, ditches), abandoned buildings and bunkers.

The site surveys are undertaken in suitable conditions for recording signs of species and their activities by avoiding strong winds and prolonged heavy rain periods.

Experienced ecologists (comprised a leader expert and one field assistants) familiar with methods to find, detect and able to identify species (bat, mammals, amphibians and reptiles) carried out the survey.

Where noted, all signs of species activity have been plotted on a suitable scale map to show the location where they were recorded together with GPS coordinates to ascertain accurate locations. A description of the habitat type, suitability, and quality to support ‘priority’ species has been prepared to enable an estimate to be made of the likely carrying capacity of the habitat/population size.

The survey information has been reviewed against available published population estimates from the wider area and we establish their relative nature conservation value on a geographic scale.

Further detail Scope for each of the above on the field surveys is provided below:

**Bats**

Two types of bat surveys have been undertaken as follows:

- Transect Surveys: 1 km transect routes has been selected within habitats likely to be used by bats within the PV Project area and OHL corridor. The site surveys performed according to the planned periods as indicated above to record further details about species commuting/foraging flight paths. A portable bat detector sound has been used as a recording equipment to assist with species identification on transect surveys. At least three 1 km transects routes in 4-5 km distance from each other has been selected along the OHL and a 1 km transect route within the PV Project site.

- Roosting Surveys: Based on transect survey findings, the experts have undertaken a field reconnaissance during daylight for features such as trees with woodpecker holes, lifted bark, other cavities etc., buildings and bunkers that occur in the project area suspected for significant roosts for bats. This likely require at least two people at each roosting site. Bat detector sound recording equipment to assist with species identification have been used. Three dusk emergence surveys of each potential roost site have been undertaken during each of the planned site surveys. The emergence survey has been for 2 hours starting 15 minutes before sunset. Recording of the species and number of bats has been made by using each roost site.

**Other Mammals**

The site surveys have been undertaken in suitable conditions for recording signs of mammal activity by avoiding strong winds and prolonged heavy rain. The experts have located a minimum of two 1 km transects in each sample site within the PV Project site and OHL route for mammals. Some transects have been orientated in parallel to watercourses across Project study area to search for signs of otter *(Lutra lutra)*, badger *(Meles meles)*, polecat *(Mustela putorius)*, golden jackal *(Canis aureus)* and other riparian mammals. The locations and route/extent of each transect has been recorded and displayed in GIS maps.

Expert has walked the transects 3 times in suitable weather to identify and record signs of mammal activity or presence including:

- Footprints, tracks, and pathways;
- Latrines and droppings;
- Shelters, burrows and dens; and,
- Feeding remains.

Amphibians and Reptiles

The survey has been undertaken at appropriate timing when amphibian and reptile species can be identified in the field through direct observation.

The experts have located a minimum of two 1 km transects in each sample site within the PV Project area and along the OHL route suitable for amphibians and reptiles. Some transects has been orientated in parallel to watercourses across Project study area to search for the presence/signs of breeding frogs, toads, and terrapin. Map the location and route/extent of each transect on a map.

The survey visits have been undertaken in suitable weather conditions avoiding strong winds and prolonged heavy rain and timed to coincide with the time of the day when reptiles and amphibians are most likely to be basking. This allows the experts to identify and record signs of activity or presence for amphibians and reptiles, and to record the breeding of priority species.

Surveys for amphibians has involved a combination of diurnal and nocturnal survey. Systematic daytime searches for amphibians have been carried out with a survey effort of at least one hour at each sample site. Nocturnal surveys have involved a combination of listening for amphibian calls, spotlighting, searching at each sample site starting 15 minutes before sunset.

Surveys for reptiles and amphibians follows the following methodology:

- Identification of suitable naturally occurring refugia likely to be used by reptiles for basking and amphibians;
- Identification and recording of species, size and conditions of all identified reptiles and amphibians;
- During the survey note any signs of the presence of reptiles, including skin sloughs or direct observations; and,
- Complete a condition assessment of the habitat for reptiles, indicating whether it is in good, moderate or poor condition, whether it could support large, medium or small population, and the relative proportion of the habitat present with respect to the wider area.

**Insects**

The site surveys have been undertaken in suitable conditions for recording insects and avoiding strong winds and prolonged heavy rain. A team of experienced experts familiar with methods to find, detect and able to identify insects present within the Project study area have been carrying out the survey.

Any insect species present that are listed as Critically Endangered or Endangered on the IUCN Red List, nationally/regionally important including those included on the Albanian Red List and/or subject to provisions of Albanian legislation will be shown on a map priority features and critical habitats according to the EBRD criteria – EBRD PR 6 and IFC PS6 habitat classifications). GPS co-ordinates of any such 'priority' insect species have been also recorded.

Satellite imagery and aerial photographs have been used to select a minimum of sample sites with suitable habitat for 'priority' insects within the Project study area. The sample sites have included the best representations of rocky areas/scree, grassland, maquis and woodland edge habitats.

A minimum of one 100 m transect has been located at each sample site with 5 associated covered pitfall traps with ethylene-glycol (or antifreeze) to preserve captured ground-dwelling insects. The surveyed transect routes and recording locations of insect species by direct observation and inspection of pitfall trap specimens will be shown on a GIS map.

**Avifauna**

Field visits for late breeding birds, (early) migrating birds and nesting birds have been conducted in suitable timeframes along the year. For avifauna the study area considered the wider geographical region, including project footprint, area of influence, areas of interest located in the western and northern part of the proposed project.

The methodology used during the field survey combines each line transects and point counts as the combination of both methods is best suited for the characteristics of the habitats to be surveyed. Line transects are better suited to open habitats, such as for the PV Project site, whilst the method of point counts is more suited for closed habitats, as may be the case for the OHL route.

Both methods, line transects and point counts, are based on recording birds along a predefined route within a predefined survey area. For line transects bird recording occurs continually, whereas for point counts it occurs at regular intervals along the route and for a given duration at each point (Sutherland et al. 2004).

Line transects has been undertaken to identify bird species present in current and abandoned agricultural land, temporary marshes nearby, reedbeds, sandy dunes, coastal areas in the north-western part of the PV Project site. Point counts are used along the proposed OHL routes covered by farmland, drain ditches, separated trees, etc.

Species, occurring in the area during the site visit, has been described including information on their conservation status and habitat requirements. Identification of areas of higher collision risk have been identified along the OHL route and other project locations in order to provide additional mitigation measures necessary for their preservation in line with the mitigation hierarchy.

Notes on breeding evidences have been taken for each of the species observed in accordance with European Breeding Bird Atlas (EBBA2) Breeding categories.

Nest site visits has been undertaken for nesting birds in surrounding areas and adjacent dry land where colonially nesting species might occur. The expert has taken note any kind of breeding evidences such as birds in display, freshly built nests and nest with eggs, recently fledged young, etc.

The survey team composed of one observer/ expert equipped with binoculars (10 x 42), spotting scope (zoom 20-60) and camera for pictures of birds and habitats and loud speaker for playback call in case it is necessary for the purpose of bird identification. All the data have been noted immediately on the Observation database[43] .

[43] https://observation.org/%20database

In addition, the Consultant will consult with the following bodies to obtain additional information and data:

- National Agency of Protected area (NAPA), including the Regional Administrate of Protected Areas (RAPA);
- National Environmental Agency (NEA);
- Representatives of Hunting Associations;
- Representatives of NGOs working in the area;
- Local community.

**Aquatic Environment**

For aquatic ecology the study area has also considered the wider geographical region, considering all channels, both drainage and irrigation, located in surrounding of the project footprint and south-western part. In the course of this work, various types of surface waters have been be investigated, including drainage channels (permanent and intermittent) and irrigation channels (in the wider area of the project zone). The waypoint locations for aquatic system have been categorized according to (a) hydrological criteria, i.e., permanent and intermittent water bodies; (b) geographical criteria, i.e., water courses in the project and wider area considering communication with south-western part of the project, and other important water bodies and surrounding stream/rivers.

The site visits have enabled grouping according to the water quality characteristics (salinity, dissolved oxygen, temperature) and the habitat characteristics (substrate, depth, flow, aquatic vegetation surface coverage) of the main water courses in the project study area.

The surveys have been taken place during daylight hours, using a large net with an extendible wooden handle and a D-shaped frame, with a minimum of eight consecutive trials applied at each location; smaller dip nets have been also be used. In the few cases where sites are wadable (relatively solid substrate, depth less than 1.5 m and limited vegetation), seine nets have been be used.

During the surveys the following components has been considered:

- Aquatic habitat assessment;
- Fish composition;
- Macro-zoobenthos; and,
- Aquatic vegetation associated with surveyed habitats.

Water parameters, in terms of temperature, salinity, pH and dissolved oxygen have been be measured in situ with a Consort C535 multi-parameter analyser and appropriate probes.

For fish composition a variety of nets has been used, including D-type hand net, Fyke nets used for capturing eels in communication channels, and Seine nets. For Seine nets a total of 12 sampling sites are selected in the shallow part of the selected areas of the aquatic habitats. Samples has been be collected using a 12 m-long beach seine (2 mm mesh size), which allows the capture of juvenile fishes and adults of small sized species. Couple of replicates has been be used to collected during every sampling period at each sampling site by hauling 20 m reaches of shore-line at each replicate.

Live specimens, after being anesthetized with quinaldine, has been be identified (fish nomenclature according to Kottelat & Freyhof 2007), measured (to nearest mm), weighed (to the nearest 0.001 g) and then returned to the water (few specimens may be kept for further analyses).

For macro-zoobenthos survey at each location two replicates of soft bottoms substrates have been be sampled from a standard area of 400 $cm^2$ (two replicates). Samples has been be preserved in a 4% formaldehyde solution. In the laboratory the fauna retained on a 1 mm-mesh sieve has been be sorted and identified to the species level wherever possible.

The assessment of submerged vegetation cover has been be done visually, recording the percentage area covered by vegetation and categorising the density of meadows from 0 (low density) to 5 (high density).

In addition, the Consultant has been consulted with the following key stakeholders to obtain additional information and data:

- Sector of Policy and Strategy for Fishery and Agriculture Development in the Ministry of Agriculture and Rural Development.
- National Agency of Protected area (NAPA), including the Regional Administrate of Protected Areas (RAPA);
- Local fishermen and members of the communities.

**Habitats**

The fieldworks have been undertaken during the optimal periods when the determinant plant species associated with each habitat type are most evident. An experienced botanist familiar with habitat mapping and able to identify the various types of habitats and flora species present within the Project study area has been be carrying out the site surveys.

Satellite imagery and aerial photographs has been be used to identify potentially different habitat types (Natural and Modified) into the Project study area to prepare a preliminary map. This map shall be used to select the number of sample sites within each of the habitat types following walkover survey. The locations of the habitat types have been be plotted on a base plan showing land contours and features, at an appropriate scale. GPS locations of key locations has been be recorded to aid in the mapping and to enable the input of field data into GIS.

Recording of details with regard to the condition of habitat types as per IFC PSC and EBRD PR 6 (natural, modified, critical habitat) has been be done on the basis of whether it is:

- In good condition and comprising viable plant populations of largely native (Albanian) origin (and therefore considered to be Natural Habitat);
- Suffering from moderate disturbance or interference, but still comprising largely populations of native (Albanian) plant species and therefore of significant biodiversity value (and therefore considered as Natural Habitat); or,
- In poor condition (i.e., extensively managed or altered from the natural state by human activity) and comprising a large proportion of species of non-native origin (and therefore considered as Modified Habitat).

For habitat sampling surveys, an analytical sampling form has been be provided. Other details have been be recorded such as existing vegetation in order to evaluate the conditions of the habitats and habitat classification according to EUNIS (and EU Habitats Directive Annex 1).

**Flora**

For the flora baseline assessment, a vegetation community map has been be developed based on field reconnaissance and existing secondary data. The extent and composition of vegetation types has been then be verified using surveys *(relèves, phytosociological sensu strictu)*. The evaluation and analysis of several bio-ecological indexes such as soil, climate, and aridity index has been be evaluated within the project study area.

The flora survey has been focussing on:

- Ecological biodiversity (landscapes, ecosystems, habitats, Priority Biodiversity Features (PBF);
- Organismal biodiversity (families, genera, and species) - besides species and families, The Consultants has been also evaluating the variability in biological forms, chorological forms and biodiversity indexes (Shannon index etc.).

The distribution and variability of vegetation across the AoI generally follows a gradient and varies based on its distance from the seashore. Therefore, the methodology for setting survey points has been be done according to transects from west (the sea shore) to east (towards the plain area). To determine the diversity of flora and vegetation within the Project study area, the surveys has been be shifted to the left or right of the transect where any changes in species composition is observed *(in phytosociology this method is called "the marsh route method")*.

The flora site surveys has been be undertaken by an appropriately qualified ecologist.

The existing biodiversity features within the Project footprint and surrounding environment has been be characterised, including Albanian legislation Red List, IUCN Red List, the Priority Biodiversity Features (PBFs) and critical habitat-qualifying features according to the EBRD PR6 and IFC PS6. This process of prioritization has been helping provide focus on the impact assessment to ensure that avoidance, mitigation and restoration measures are focused on the highest biodiversity values and risks within the project footprint and area of influence (AoI).

Field reports/ surveys has been be filled in a well-defined template, based on key findings has been be produced in several GIS maps. An inventory of flora, listing of rare, endangered, threatened, vulnerable, economically important and medicinal plant species has been be prepared and their frequency, abundance and density has been be determined and associated with field-gathered information data, coordinates and photos during the survey.

In addition, the Consultant has been consulted with the following key stakeholders to obtain additional information and data:

- National Agency of Protected area (NAPA), including the Regional Administrate of Protected Areas (RAPA);
- National Environmental Agency (Forest Directorate);
- Agricultural University of Tirana (Diploma theses and PhD studies).

The baseline reports have been describing habitats and species present in the study area based on desktop review and field investigation, and assess and classify the sensitivity or vulnerability of the species. For the purpose of this biodiversity evaluation information on the following has been be given:

- A description of the current status of flora biodiversity in the project study area;
- A description of threats to flora biodiversity;
- Identification of any High Conservation Value (HCV) areas that are important for biodiversity, e.g., areas with protected status, populations of threatened or rare species or ecosystems.

**Biodiversity Survey Reporting**

Details of sample sites (including maps and GPS coordinates), methods used, survey dates, and other relevant information has been be recorded and provided for each of the studied components or categories of the biodiversity survey.

The data has been be presented in summary tables, with Critically Endangered or Endangered, Vulnerable and restricted-range species on the IUCN Red List, and any nationally/regionally listed species included on the Albanian Red List and/or subject to provisions of Albanian legislation, EU Directives (guidelines and annexes) IFC PS6 and EBRD PR6 requirements.

Large-scale mapping showing sample sites and 'priority[44]' species record locations has been be also provided.

Habitat suitability for each 'priority' species recorded, an indication as to the abundance/population size and their distribution within the Project study area has been be described. The Consultant has been also providing contextual information about published 'priority' species status in the wider area and reported on geographic scale: around Spitalla area (north-western part), Albania and internationally.

[44] Priority species are those species that are identified under the national and international laws as being the most threatened and requiring conservation action

**Critical Habitat Assessment**

A list of 'priority' species, that includes PR6 Critical Habitat trigger species to inform a Critical Habitat Assessment and the design of mitigation as necessary, has been be identified. A Critical Habitat Assessment has been be undertaken and prepared as a separate deliverable and a summary of the findings has been be included as an appendix within the ESIA. The Critical Habitat Assessment has been assessing against all 5 criteria, as required under EBRD PR6 and IFC PS6 CH criteria, as follows:

- Highly threatened or unique ecosystems;
- Habitats of significant importance to endangered or critically endangered species;
- Habitats of significant importance to endemic or geographically restricted species;
- Habitats supporting globally significant migratory or congregatory species; or
- Areas associated with key evolutionary processes.
- Ecological functions that are vital to maintaining the viability of biodiversity features described (as critical habitat features).

### 7.2.3.2. Soil & water quality

Soil and water quality sampling and analysis will be undertaken as follows:

- Soil - soil samples will be collected in 3 representative locations close to PDA and transmission route to establish soil quality baseline. Sampling points will be geo-referenced, and analysed for soil texture/hygrometer, pH, heavy metals, soil fertility (nutrient content), and colour. Surface description of the soils such as soil texture, colour, structure, drainage and rock outcrops will be undertaken.
- Water quality – There are a number of irrigation channels located in the vicinity of the transmission line in the agricultural area around the PV Project Area. Up to 3 water samples will be collected, where possible, and analysed, for heavy metals, pH, dissolved oxygen, biochemical oxygen demand and total suspended solids and chemical oxygen demand. Results for water quality analysis will be compared to national water quality standards and WHO water quality guidelines, and will be used to establish baseline water quality conditions.

### 7.2.3.3. Socio-economic

The Community Engagement during the ESIA will be established in order to collect and gather further socio-economic data. Baseline data covers the field surveys as a key element of the social and health survey. Information will be gathered on existing areas of interest within the "Project Area (PA)".
Primary socio-economic data will be collected via the following:

- Undertake site visit to hold community meetings and collect additional baseline data;
- Obtain available information from the socio-economic data from the municipality of Durrës;
- Capture comments and grievances from communities;
- Gather relevant primary socio-economic data through key informant interviews, focus groups discussions and stakeholder engagement.
- Update socio-economic and health baseline with primary data;
- Assess cumulative impact of development with current and planned developments in the area.
- Draft mitigation measures will be drafted and incorporated into the Environmental and Social Management Plan.

The primary data gathering survey will be gathered through Focus Group Discussions (FGD), Key Informant Interviews (KII), interviews with community leaders and businesses in the PA.
The FGD are organized discussions with a selected group of individuals to gain information about their views and experiences of a topic to help gain insights into people's shared understanding of everyday life and the ways in which individuals are influenced by others in a group situation.
The KIIs are qualitative in-depth interviews with people who know what is going on in the community. The purpose of KIIs is to collect information from a wide range of people, including community leaders, professionals, or residents, who have first-hand knowledge about the community. Interviews will be held

with individuals / institutions that have knowledge of a specific subject (i.e. development programs, health, employment, education, and infrastructure) or are informed members of the community. Local government representatives and healthcare professionals will be interviewed to collect the qualitative data.

The number of these interviews will depend on the knowledge and availability of the representatives in the area.

The BID or other informative documents (e.g. flyers) will be distributed to the community in advance of the consultation meetings. This will explain the Project and the ESIA process in simple terms and will provide details on the dates and venues for the community consultation meetings. The results of these consultations and feedback will be presented in the ESIA report.

A combination of desktop and field investigation will take place to identify any vertical restrictions on buildings beneath transmission lines, or a lateral restriction to ensure access and safety either side of the transmission line, including crossing of other infrastructure (other power lines, telephony, antenna, etc within the safety corridor (25m on each side).

Other important activities include understanding whether there are any sensitive spots that may require changes to current Project design, showstoppers, or areas that require the application of special mitigation measures. In addition, the team will observe how settlements are growing, at what speed and in which direction (i.e., towards or away from any facility locations) in addition to sites of future planned activity.

Field observations will also include social and health infrastructure profiling and high-level traffic observations. The Project team will use desk studies and partial surface reconnaissance to identify cultural heritage sites. Field observations will require the recording of GPS waypoints and at least two photographs of each of the sites in question. All information, including a detailed description of the sites and any potential issues, will be recorded in a waypoint and photo logbook.

**Table 22. Planned Biodiversity survey schedule**

| Experts | Data to be Gathered | Extent | Timing | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2021 | | | | | | 2022 | | | | | |
| | | | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar |
| Flora and Habitat expert | Habitat Mapping; Habitat characterization - Species Composition of each habitat type; Identification of any CH-qualifying species / PBFs and estimation of population; | Project Development Area (PDA) and Area of Influence (AoI), transportation routes, any other key habitats in the surrounding landscapes | Spring season | | | | | | Autumn season | | | | | |
| Fauna and Bat Expert | Terrestrial Fauna and bats; Date type = presence / likely absence data; Habitat use; Roosting sites; | PDA and AoI, transportation routes, any other key habitats in the surrounding landscapes | Spring season | | | | | | Autumn season | | | | | |
| Bird Expert | Presence/absence of species | PDA and AoI, transportation routes, any other key habitats in the surrounding landscapes | | (Breeding / Nesting) | | (Migratory Birds) | | | Autumn season | | Winter season | | | |
| | Identification of any CH-qualifying species/PBF species; Identification of migratory species and CH-qualifying/PBF species, estimation of population and their habitats; | | | | | | | | | | | | | |
| Aquatic Expert | Identification of any CH-qualifying species / PBF's; Identification of migratory species; | PDA and AoI, transportation routes, any other key habitats in the surrounding landscapes, including irrigation and drainage channels. | Spring season | | | | | | Autumn season | | | | | |

**Table 23. Additional biodiversity surveys and reporting**

| Additional biodiversity surveys and reporting | | | |
|---|---|---|---|
| Experts | Data to be Gathered | Extent | |

| | | | 2022 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Breeding Bird Survey/Nesting Survey | Presence/ absence of species Identification of any CH qualifying species/PBF species | PDA, AoI, and Proposed transmission line. | | | | | End May – Early June, 2022 | | | | | | | |
| Migratory Birds | Identification of migratory species and CH qualifying/ PBF species; | PDA, AoI, and Proposed transmission line. | | | | April/ Early May, 2022; | | | | | | | | |
| Aquatic Survey - irrigation and drainage channels | Identification of any CH qualifying species / PBF's Identification of migratory species; | PDA, AoI, and Proposed transmission line, and connected irrigation channels; | | | | | | | | | | | (wet season) | |
| Terrestrial Fauna on Amphibians and Reptiles- refugia; Bats and other mammals? | | PDA, AoI, and Proposed transmission line, and connected irrigation channels; | | | | Spring, 2022 | | | | | | | | |

**Table 24. Environmental and Social Baseline Studies Schedule**

| Experts | Data to be Gathered | Extent | Timing | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2021 | | | | | | 2022 | | | | | |
| | | | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| Socioeconomic expert | Demographics, Population, Vulnerable Groups, Education, Livelihoods and Micro-Economy, Key Livelihoods, and Employment, Infrastructure, Community Health, etc. | Project Development Area (PDA) and Area of Influence (AoI), transportation routes. | | | | | | | | | | | | |
| | | Proposed transmission line | | | | | | | | | | | | |
| | | New transmission line alternative | | | | | | | | | | | | |
| Environmental and | Village | PDA and AoI, transportation routes, any other sensitive habitat/ area | | | | | | | | | | | | |

| Experts | Data to be Gathered | Extent | Timing | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2021 | | | | | | 2022 | | | | | |
| | | | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| Socioeconomic Experts | Assessment and Infrastructure assessment, roads, crossings, settlements, safety issues, water supplies, wastes, irrigation, etc. | Proposed transmission line | | | | | | | | | | | | |
| | | New transmission line | | | | | | | | | | | | |
| Environmental, Soil Quality and Land Use/Cover Expert | Assessment of land use and cover, including landscape. Investigation of the physio-chemical properties of the soil in the study area. Soil quality measurements will be performed by an accredited laboratory. | PDA and AoI, transportation routes, any other key receptors in the surrounding landscapes | | | | | | | | | | | | |
| | | Proposed transmission line and irrigation channels; | | | | | | | | | | | | |
| | | New transmission line | | | | | | | | | | | | |
| Geology Expert | Assessment of the geology in the study area | PDA and AoI, transportation routes, any other key receptors in the surrounding landscapes, including irrigation and drainage channels. | | | | | | | | | | | | |
| | | New transmission line | | | | | | | | | | | | |
| Groundwater and Surface Water Expert | Assessment of groundwater and surface water patterns and existing conditions. Water quality measurements will be performed by an accredited laboratory. | PDA and AoI, and any other key receptors/ area that might be influenced by the project | | | | | | | | | | | | |
| Environmental Expert/ Air Quality | Identification of locations and sensitive receptors. (i.e., nearby households, schools, settlements, | PDA and AoI, and any other key receptors/ area that might be influenced by the project | | | | | | | | | | | | |

| Experts | Data to be Gathered | Extent | Timing | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2021 | | | | | | 2022 | | | | | |
| | | | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| | etc.). Air quality measurements for PM and gases. Measurement will be performed by an accredited laboratory. | | | | | | | | | | | | | |
| Environmental Expert/ Noise | Identification of locations and sensitive receptors. (i.e., nearby households, schools, settlements, etc.). Noise level measurements. Measurement will be performed by an accredited laboratory. | PDA and AoI, and any other key habitat/ area that might be influenced by the project. | | | | | | | | | | | | |
| Cultural Heritage Expert | Performing baseline field surveys for cultural heritage sites, monuments and other objects with archaeological values. | PDA and AoI, transportation routes, any other key receptors in the surrounding landscapes. | | | | | | | | | | | | |
| | | New transmission line | | | | | | | | | | | | |
| Electro-magnetic field Expert | Assessment of potential risks that may arise due to the construction of the transmission line and electro-magnetic field. | New transmission line. | | | | | | | | | | | | |

## 7.3. Impact Assessment Methodology

Impact identification and assessment starts with scoping and continues through the remainder of the ESIA Process. Interactions with the potential for significant effects are subjected to a detailed impact assessment. The principal EIA steps comprise the following:

- **Impact prediction**: to determine what could potentially happen to resources or receptors as a consequence of the Project and its associated activities – potential impacts are identified during the ESIA scoping phase.
- **Impact evaluation**: to evaluate the significance of the predicted impacts by considering their magnitude and likelihood of occurrence, and the sensitivity, value and/or importance of the affected resource or receptor.
- **Mitigation and enhancement**: to identify appropriate and justified measures to mitigate negative impacts and enhance positive impacts.

  **Residual impact evaluation**: to evaluate the significance of impacts assuming effective implementation of mitigation and enhancement measures.

### 7.3.1. Identification and Characterization of Impacts

An 'impact' is any change to a resource or receptor caused by the presence of a project component or by a project-related activity. Impacts can be negative or positive and are described in terms of their characteristics, including the impact's type and the impact's spatial and temporal features (namely extent, duration, scale and frequency). Impact characteristics are defined in the subsections below.

**Type of Impact**

- *Direct*: applies to an impact which can be clearly and directly attributed to a particular environmental or social parameter (e.g., dust generation directly affects air quality).
- *Indirect*: applies to impacts which may be associated with or subsequent to a particular impact on a certain environmental or social parameter (e.g., high levels of dust could entail nuisance and health effects to workers on site).
- *Induced:* applies to impacts that result from other activities (which are not part of the Project) that happen as a consequence of the Project.
- *Cumulative*: applies to impacts that arise as a result of an impact and effect from the Project interacting with those from another activity to create an additional impact and effect.

**Duration of impact**

- *Temporary:* applies to impacts whose effects are limited to a period of less than 3 years, or only associated with Project pre-construction or construction phases.
- *Short-term*: applies to impacts whose effects are limited to a five-year period.
- *Long-term*: applies to impacts whose effects last longer than a period of five years, but limited to within the project lifetime.
- *Permanent:* applies to impacts whose effects last longer than the life of project – i.e., irreversible.

**Extent of impact**

- *On-site*: impacts that are limited to the Project site.
- *Local:* impacts that are limited to the Project site and adjacent properties.
- *Regional*: impacts that are experienced at a regional scale.
- *National*: impacts that are experienced at a national scale.
- *Trans-boundary/International:* impacts that are experienced outside of Albania.

**Scale of impacts**

The scale of an impact is a quantitative measure, such as the size of the area damaged / impacted or the fraction of a resource that is lost / affected, etc. It is generally described using numerical values and units rather than assigned fixed designations.

**Frequency of impacts**

The frequency of an impact the measure of the constancy or periodicity of an impact, described using numerical values or a qualitative description.

**Likelihood**

Likelihood is a measure of the degree to which the unplanned event (e.g. incidents, spills) is expected to occur. The likelihood of an unplanned event occurring is determined qualitatively, or when data is available, semi-quantitatively. Definitions of likelihood as applied in the ESIA are provided as follows:

- *Unlikely*: The event is unlikely but may occur at some time during normal operating conditions
- *Possible*: The event is likely to occur at some time during normal operating conditions.
- *Likely*: The event will occur during normal operating conditions (i.e., it is essentially inevitable).

### 7.3.2. Evaluation of impacts

A consistent approach to the assessment of impacts will be followed to enable E&S impacts to be broadly compared across the ESIA. A set of generic criteria are used to determine significance and are applied across the various environmental and social parameters.
As far as possible, E&S impacts will be quantified. Where it is not possible to quantify impacts, a qualitative assessment will be conducted using professional judgement, experience and available knowledge, and including the consideration of stakeholder views. Where there are limitations to the data, and / or uncertainties, these will be recorded in the relevant chapters, along with any assumptions made during the assessment.
In order to determine the significance of each impact, two overall factors are considered:

- Magnitude and nature of impacts;
- The importance and/or sensitivity of the environmental and social receiving parameter, as determined during the assessment of baseline conditions.

**Magnitude of impact**

Once impacts are characterised (see section 6.4.1 above) they are assigned a 'magnitude'. Magnitude is typically a function of some combination (depending on the resource/receptor in question) of the following impact characteristics:

- extent
- duration
- scale
- frequency.

Magnitude (from small to large) is a continuum. Evaluation along the continuum requires professional judgement and experience. Each impact is evaluated on a case-by-case basis and the rationale for each determination is noted. Magnitude designations for negative effects are: negligible, small, medium and large. The magnitude designations themselves are universally consistent, but the definition for the designations varies by issue. In the case of a positive impact, no magnitude designation is assigned as it is considered sufficient for the purpose of the impact assessment to indicate that the Project is expected to result in a positive impact.
Some impacts will result in changes to the environment that may be immeasurable, undetectable or within the range of normal natural variation. Such changes are regarded as having no impact, and characterised as having a negligible magnitude.
Magnitude of impacts will be presented as either:

- High

- Medium
- Low
- Negligible.

The definitions of each of the above will be clearly defined in the ESIA.

**Sensitivity of receiving parameter**

In addition to characterising the magnitude of impact, the other principal step necessary to assign significance for a given impact is to define the sensitivity of the receptor. There are a range of factors to be taken into account when defining the sensitivity of the receptor, which may be physical, biological, cultural or human. As in the case of magnitude, the sensitivity designations themselves are universally consistent, but the definitions for these designations will vary on a resource/receptor basis. The universal sensitivity of receptor is set as either low, medium or high.

For ecological impacts, sensitivity is assigned as low, medium or high based on the conservation importance of habitats and species. For socio-economic impacts, the degree of sensitivity of a receptor is defined as the level of resilience (or capacity to cope) with sudden social and economic changes. Criteria for deciding on the value or sensitivity of biological and socioeconomic receptors are presented as follows:

### 7.3.3. Assessing the significance of impacts

In order to assess the significance of an impact, the sensitivity of the receiving environmental or social parameter is considered in association with the magnitude of the impact, according to the matrix shown in Table 25 below.

**Table 25. Impact significance matrix**

| Magnitude of impact | Sensitivity of receiving receptor | | |
|---|---|---|---|
| | Low | Medium | High |
| Negligible | Negligible | Negligible | Negligible |
| Low | Negligible | Minor | Moderate |
| Medium | Minor | Moderate | Major |
| High | Moderate | Major | Major |

While the above matrix provides a framework for the determination of significance and enables comparison across environmental and social parameters, a degree of professional judgement must be used and some parameter-specific factors considered in making a determination of impact significance. The ESIA will provide additional guidance to the degrees of significance.

Note that positive impacts are defined, but not rated for significance.

### 7.3.4. Mitigation Potential and Residual Impacts

A key objective of an ESIA is to identify and define socially, environmentally and technically acceptable and cost-effective measures to manage and mitigate potential impacts. Mitigation measures are developed to avoid, reduce, remedy or compensate for potential negative impacts, and to enhance potential environmental and social benefits.

The approach taken to defining mitigation measures is based on a typical hierarchy of decisions and measures, as described in Table 26. The priority is to first apply mitigation measures to the source of the impact (i.e. to avoid or reduce the magnitude of the impact from the associated Project activity), and then to address the resultant effect to the resource/receptor via abatement or compensatory measures or offsets (i.e. to reduce the significance of the effect once all reasonably practicable mitigations have been applied to reduce the impact magnitude).

Once mitigation measures are declared, the next step in the impact assessment process is to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above.

**Table 26. Mitigation hierarchy**

| |
|---|
| **Avoid / reduce at source**: avoiding or reducing at source through the design of the Project (e.g., avoiding by siting or re-routing activity away from sensitive areas or reducing by restricting the working area or changing the time of the activity). |
| **Abate on Site**: add something to the design to abate the impact (e.g., pollution control equipment). |
| **Abate at Receptor**: if an impact cannot be abated on-site then control measures can be implemented off-site (e.g., traffic measures) |

| |
|---|
| **Repair or Remedy**: some impacts involve unavoidable damage to a resource (e.g., material storage areas) and these impacts require repair, restoration and reinstatement measures |
| **Compensate in Kind**; Compensate Through Other Means where other mitigation approaches are not possible or fully effective, then compensation for loss, damage and disturbance might be appropriate (e.g., financial compensation for degrading agricultural land and impacting crop yields) |

Once mitigation measures are declared, the next step in the impact assessment process is to assign residual impact significance. This is essentially a repeat of the impact assessment steps discussed above, considering the assumed implementation of the additional declared mitigation measures.

### 7.3.5. Cumulative Impacts

A cumulative impact is one that arises from a result of an impact from the Project interacting with an impact from another activity to create an additional impact. How the impacts and effects are assessed is strongly influenced by the status of the other activities (e.g. already in existence, approved or proposed) and how much data is available to characterise the magnitude of their impacts.
The approach to assessing cumulative impacts is to screen potential interactions with other projects on the basis of:

- Projects that are already in existence and are operating;
- Projects that are approved but not as yet built or operating; and
- Projects that are a realistic proposition but are not yet built.

## 7.4. Proposed Structure of the ESIA Report

An outline of the proposed contents of the main volume of the ESIA report is provided in Table 27. The proposed structure follows the guidance provided by IFC Standard integrated with the Albanian law requirements (DCM No. 686, dated 29.07.2015 “On the rules, responsibilities, timelines for the EIA procedure and the transfer procedure of the decision for the environmental declaration” as amended). The content may be altered during the evolution of the Project or based on the findings of on-going consultation. However, it is anticipated that the contents of the ESIA report will accord broadly within the suggested framework.

**Table 27. Overview User Guide for ESIA Report**

| Chapter Number | Content Heading | Explanatory Note |
|---|---|---|
| Front Page | | Title page, acknowledgements, authors and contributors, table of content (including lists of figures, tables, and maps). |
| | Executive Summary (Non-Technical ESIA) | Summary of the entire ESIA report in a simplified language in order to be easily understood by the broad public. |
| Ch. 1 | Introduction; | Will outline the development and structure of the ESIA report including the background, terms of reference and declaration. |
| Ch. 2 | Project Description | Concisely describe the proposed project and its geographic, ecological, social, and temporal context, including any off-site investments that may be required (e.g. OHL, access roads, water supply, and raw material and product storage facilities). It will include a site description, an overview of the Project design and details of project inputs and outputs.<br>The section will also provide an analysis of alternatives that identifies feasible alternatives to the proposed project site, technology, design, and operation--including the "without project" scenario. Justification for selecting the particular project design proposed will also be provided. |
| Ch. 3 | Administrative Framework | Will outline the policy, legal and administrative framework within which the ESIA has been conducted. It will also identify relevant international E&S agreements to which the country is a party, as well as relevant international E&S standards, such as international Development Agency or Lender standards. |
| Ch. 4 | Baseline Conditions | This Chapter will present summarise the existing conditions of the study area and describe relevant physical, biological, and socio-economic |

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LOCAL Knowledge, GLOBAL Standards

| Chapter Number | Content Heading | Explanatory Note |
|---|---|---|
| | | conditions. It will be based on both primary and secondary data sources and will consider anticipated changes in the baseline condition without the development in place. An indication on the accuracy, reliability, and sources of the data obtained will be provided. |
| Ch. 5 | Public Participation & Stakeholder Engagement | Will present a summary of the results of consultation undertaken as part of the ESIA, plus plans for future consultation. It will identify key project stakeholders and present their feedback on the Project. |
| Ch. 6 | Impact Assessment | The methodology used to assess the impacts of the Project on the bio-physical, terrestrial and socio-economic environment will be summarised. The Chapter will then summarise the predicted positive and negative impacts of the Project, outline general and specific mitigation measures to reduce, remove or avoid negative impacts to E&S receptors, as well as explore opportunities for E&S enhancement, and monitoring measures to be applied. Any residual impacts (post mitigation) will be outlined. Cumulative impacts will be assessed as appropriate. |
| Ch. 7 | Mitigation / Management / Monitoring Framework | This Chapter will draw together the possible mitigation measures; group them logically into components with common themes; define the specific actions required and timetable for implementation; institutional roles and responsibilities for implementation; and estimate the costs of the measures. |
| Ch. 8 | Conclusions | This Chapter will summarise the main conclusions of the ESIA process, as well as outline any further recommendations. |
| Volume 2 – Annexes | | |

# 8. CONCLUSIONS

Based on the proposed Project and its location, no fatal flaws have been identified, and we consider that the proposed project can proceed to the ESIA phase where the impacts identified in the scoping phase will be assessed in detail to determine the potential impact that the proposed project may have on the existing environmental and social conditions. Based on the findings of the ESIA appropriate mitigation and enhancement measures can be identified to ensure associated impacts are at an acceptable level to meet national, Lender and community requirements.

Based on initial site observation the land-use for area designated for PV Project is currently only used for limited grazing activities, with no permanent agricultural activities being undertaken as the soil quality is identified as being low due to its high salinity. However, permanent changes in land-use due its acquisition for the PV Project and associated infrastructure will lead to decrease and loss of pastureland. Furthermore, the habitats and vegetation covering the PV Project area have been severely degraded due to past agricultural and grazing activities.
We have initially identified the following as the key important / sensitive environmental and social receptors associated with the construction and operation of the proposed Project:

- Irrigation and drainage channels within the PV Project area and their associated habitats and ecology;
- Ground nesting birds potentially using the PV Project site area;
- The nearby village of Rinia;
- House holders/ business owners and land-users along OHL route.

The ESIA will gather the appropriate information in order to establish the baseline conditions that exist within the Project Area of Influence (AoI) in order to determine the potential impact of the Project. In order to achieve this, it is recognised that continued consultation is an important step, and in particular with:

- House holders/ business owners and farmers/owners along the OHL route
- Local communities
- Ministry of Tourism and Environment (MTE)
- National Agency for the Protected Areas (NAPA)
- Regional Administration for the Protected Areas (RAPA)
- National Environmental Agency (NEA)
- Transmission System Operator (OST)
- Ministry of Culture and National Institute of Cultural Heritage (IKTK) - Ministry of Culture
- Municipality of Durrës
- Regional Environmental Directorate
- Drainage Board.
- National and International NGOs, as appropriate
- Others.

We consider that the information provided in this Scoping Report is the most relevant and available as provided by the project proponent and specialists.

For further information please contact:

| Voltalia | Abkons |
| --- | --- |
| Email: spitalla@voltalia.com<br>Project website:<br>www.spitallasolar.com/ | Redion Biba<br>Environmental & Social Compliance Manager<br>rbiba@abkons.com<br>Tel: +355 (0) 69 405 6397 |

# Appendix I. Scoping Checklist

**Table 28. Scoping Checklist[45]**

| No. | Questions to be considered in Scoping | Yes/No | Which Characteristics of the Project Environment could be affected and how? | Is the effect likely to be significant? Why? |
|---|---|---|---|---|
| 1. Will construction, operation or decommissioning of the Project involve actions which will cause physical changes in the locality (topography, land use, changes in waterbodies, etc.)? | | | | |
| 1.1 | Permanent or temporary change in land use, land cover or topography including increases in intensity of land use? | Yes | Some agriculture lands will be acquired and will be used for construction of Photovoltaic Park and OHL | Significant. Acquired land will be compensated |
| 1.2 | Clearance of existing land, vegetation and buildings? | Yes | Cutting trees will be avoided, some bushes could be cut. Removal of vegetation from agricultural land, open scrubland for site construction and ancillary facilities will impact the scrubland species and the loss of connectivity between habitats or to resources within a habitat. | Not significant. The project area has limited vegetation aside from the farming activities along the OHL route which will be managed through the LARF |
| 1.3 | Creation of new land uses? | Yes | Permanent changes in land use due to installation of PV Modules, Central Monitoring Station, Switching Yard, access roads.<br>Temporary changes in land use due to temporary site office and material storage yard and construction of OHL. | Significant. |
| 1.4 | Pre-construction investigations e.g., boreholes, soil testing? | Yes | For construction of PV Project and OHL, soil testing will be conducted by the EPC Contractor. | Not significant |
| 1.5 | Construction works? | Yes | | |
| 1.6 | Demolition works? | No | | |
| 1.7 | Temporary sites used for construction works or housing of construction workers? | Yes | One or two site will be located near the project area. | Not significant |
| 1.8 | Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations? | Yes | For construction of maintenance magazine and battery storage building. | Not significant |
| 1.9 | Underground works including mining or tunnelling? | No | None anticipated | |
| 1.10 | Reclamation works? | No | N/A | |
| 1.11 | Dredging? | No | N/A | |
| 1.12 | Coastal structures erg seawalls, piers? | No | N/A | |
| 1.13 | Offshore structures? | No | N/A | |

[45] Source: European Commission's "*Environmental Impact Assessment of Projects - Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU)*"

| No. | Questions to be considered in Scoping | Yes/No | Which Characteristics of the Project Environment could be affected and how? | Is the effect likely to be significant? Why? |
|---|---|---|---|---|
| 1.14 | Production and manufacturing processes? | No | N/A | |
| 1.15 | Facilities for storage of goods or materials? | Yes | At least one storage camp will be organized at the site close to photovoltaic park. | Not significant. |
| 1.16 | Facilities for treatment or disposal of solid wastes or liquid effluents? | No | N/A | |
| 1.17 | Facilities for long term housing of operational workers? | No | N/A | |
| 1.18 | New road, rail or sea traffic during construction or operation? | Yes | Some new roads for could be constructed | |
| 1.19 | New road, rail, air, waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.? | Yes | Minor changes may be required for access | Not significant. |
| 1.20 | Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements? | No | N/A | |
| 1.21 | New or diverted transmission lines or pipelines? | Yes | New OHL will be constructed | Significant |
| 1.22 | Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers? | No | N/A | |
| 1.23 | Stream crossings? | None planned | | |
| 1.24 | Abstraction or transfers of water from ground or surface waters? | No | N/A | |
| 1.25 | Changes in waterbodies or the land surface affecting drainage or run-off? | No | N/A | |
| 1.26 | Transport of personnel or materials for construction, operation or decommissioning? | Yes | For construction activities | Not significant |
| 1.27 | Long term dismantling or decommissioning or restoration works? | No | N/A | |
| 1.28 | Ongoing activity during decommissioning which could have an impact on the environment? | Yes | To be managed through appropriate decommissioning plans | Not significant |

| No. | Questions to be considered in Scoping | Yes/No | Which Characteristics of the Project Environment could be affected and how? | Is the effect likely to be significant? Why? |
|---|---|---|---|---|
| 1.29 | Influx of people to an area in either temporarily or permanently? | No | Up to 200 people will be involved for construction but no influx of workers | Not significant |
| 1.30 | Introduction of alien species? | No | N/A | |
| 1.31 | Loss of native species or genetic diversity? | No | N/A | |
| 1.32 | Any other actions? | No | | |
| 2. Will construction or operation of the Project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply? | | | | |
| 2.1 | Land especially undeveloped or agricultural land? | Yes | Agricultural land will be acquired for temporary and permanent use | Yes, loss of income potential, but will be managed through the LARF |
| 2.2 | Water? | Yes | Concrete required for hardstanding areas | |
| 2.3 | Minerals? | No | | |
| 2.4 | Aggregates? | Yes | Concrete required for hardstanding areas | Not significant |
| 2.5 | Forests and timber? | No | N/A | |
| 2.6 | Energy including electricity and fuels? | Yes | Fuel use for construction vehicles and machinery. | Not significant |
| 2.7 | Any other resources? | Yes | Metal for cables and metallic structures. | Minor significance |
| 3. Will the Project involve use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health? | | | | |
| 3.1 | Will the project involve use of substances or materials which are hazardous or toxic to human health or the environment (flora, fauna, and water supplies)? | Yes | Only limited use of hazardous materials | Not significant |
| 3.2 | Will the project result in changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)? | No | N/A | |
| 3.3 | Will the project affect the welfare of people e.g., by changing living conditions? | No | Limited impact on people anticipated | Minor significance |
| 3.4 | Are there especially vulnerable groups of people who could be affected by the project e.g., hospital patients, the elderly? | No | To be determined but considered minimal risk. | Not significant |
| 3.5 | Any other causes? | No | | |
| 4. Will the Project produce solid wastes during construction or operation or decommissioning? | | | | |
| 4.1 | Spoil, overburden or mine wastes? | No | N/A | |

| No. | Questions to be considered in Scoping | Yes/No | Which Characteristics of the Project Environment could be affected and how? | Is the effect likely to be significant? Why? |
|---|---|---|---|---|
| 4.2 | Municipal waste (household and or commercial wastes)? | Yes | Municipal wastes from construction camps and sites. However, it can be anticipated that all wastes generated during both construction and operation phase will be collected, segregated and transported to the designated/approved sites by the Municipality. | Not significant |
| 4.3 | Hazardous or toxic wastes (including radioactive wastes)? | Yes | Different types of materials will be stored on site during construction, including possible hazardous materials Paints will be used. Substances such as fuel will be present on site for heavy machineries supply. Given that equipment and machinery service will be carried onsite, limited amounts of hazardous waste of used oils or other flammable materials may be generated. During operation phase there will be may be little or no presence of hazardous wastes. Hazardous wastes to be generated will be classified in accordance with the DCM No. 99/2005 "On the approval of the Albanian Waste Classification Catalogue", amended. | Minor significance – Potential contamination of the environment in case of accidental and/or unplanned events. Potential contamination from non-proper management of hazardous wastes. |
| 4.4 | Other industrial process wastes? | No | None anticipated | |
| 4.5 | Surplus product? | No | None anticipated | |
| 4.6 | Sewage sludge or other sludges from effluent treatment? | Yes | Sewage from construction camp | Not significant |
| 4.7 | Construction or demolition wastes? | Yes | Wastes will be generated from construction activities | Not significant |
| 4.8 | Redundant machinery or equipment? | Yes | Surplus lengths of cabling | Not significant |
| 4.9 | Contaminated soils or other material? | Yes | Possible during construction phase | Not significant |
| 4.10 | Agricultural wastes? | No | The proposed project will not result in generation of agricultural wastes. | |
| 4.11 | Any other solid wastes? | No | | |
| 5. Will the Project release pollutants or any hazardous, toxic or noxious substances to air? | | | | |
| 5.1 | Emissions from combustion of fossil fuels from stationary or mobile sources? | Yes | Potential emissions of gases from vehicle movements during construction and operation phase. | Not significant. The impact will be short term. Potential receptors are located more than 1km from the site. |
| 5.2 | Emissions from production processes? | No | N/A | |
| 5.3 | Emissions from materials handling | Yes | Emissions from road transport during construction | Not significant. The impact will be short |

| No. | Questions to be considered in Scoping | Yes/No | Which Characteristics of the Project Environment could be affected and how? | Is the effect likely to be significant? Why? |
|---|---|---|---|---|
| | including storage or transport? | | | term. Potential receptors are located more than 1km from the site. |
| 5.4 | Emissions from construction activities including plant and equipment? | Yes | Emissions from road transport during construction | Not significant and temporary. Mitigation measures will be applied |
| 5.5 | Dust or odours from handling of materials including construction materials, sewage and waste? | Yes | During construction activities | Not significant and temporary. Mitigation measures will be applied |
| 5.6 | Emissions from incineration of waste? | No | Incineration will not be allowed | |
| 5.7 | Emissions from burning of waste in open air (e.g. slash material, construction debris)? | No | Burning of wastes in open air will not be allowed | Not significant |
| 5.8 | Emissions from any other sources? | No | Non anticipated | |
| 6. Will the Project cause noise and vibration or release of light, heat energy or electromagnetic radiation? | | | | |
| 6.1 | From operation of equipment e.g. engines, ventilation plant, crushers? | Yes | During construction phase in the irrigated areas | Not significant. |
| 6.2 | From industrial or similar processes? | No | Non anticipated | |
| 6.3 | From construction or demolition? | Yes | During construction phase | Not significant. |
| 6.4 | From blasting or piling? | No | None anticipated | |
| 6.5 | From construction or operational traffic? | Yes | Short term impact will be during construction activities close to project area. | Not significant. |
| 6.6 | From lighting or cooling systems? | No | N/A | |
| 6.7 | From sources of electromagnetic radiation (consider effects on nearby sensitive equipment as well as people)? | Yes | Impact of electromagnetic field. From overhead transmission line. | Not Significant as sensitive receptors are located sufficiently far from OHL. Assessment included within the scope of ESIA. |
| 6.8 | From any other sources? | No | | |
| 7. Will the Project lead to risks of contamination of land or water from releases of pollutants onto the ground or into sewers, surface waters, groundwater, coastal waters or the sea? | | | | |
| 7.1 | From handling, storage, use or spillage of hazardous or toxic materials? | Yes | Spillage of hazardous materials may happen during construction period | Not significant. Potential risks from spillages and contamination in case of unplanned events and/or accidents. Mitigation measures will be proposed. |
| 7.2 | From discharge of sewage or other | Yes | During construction phase will be generated wastewater effluents | Not significant. The main concern is during |

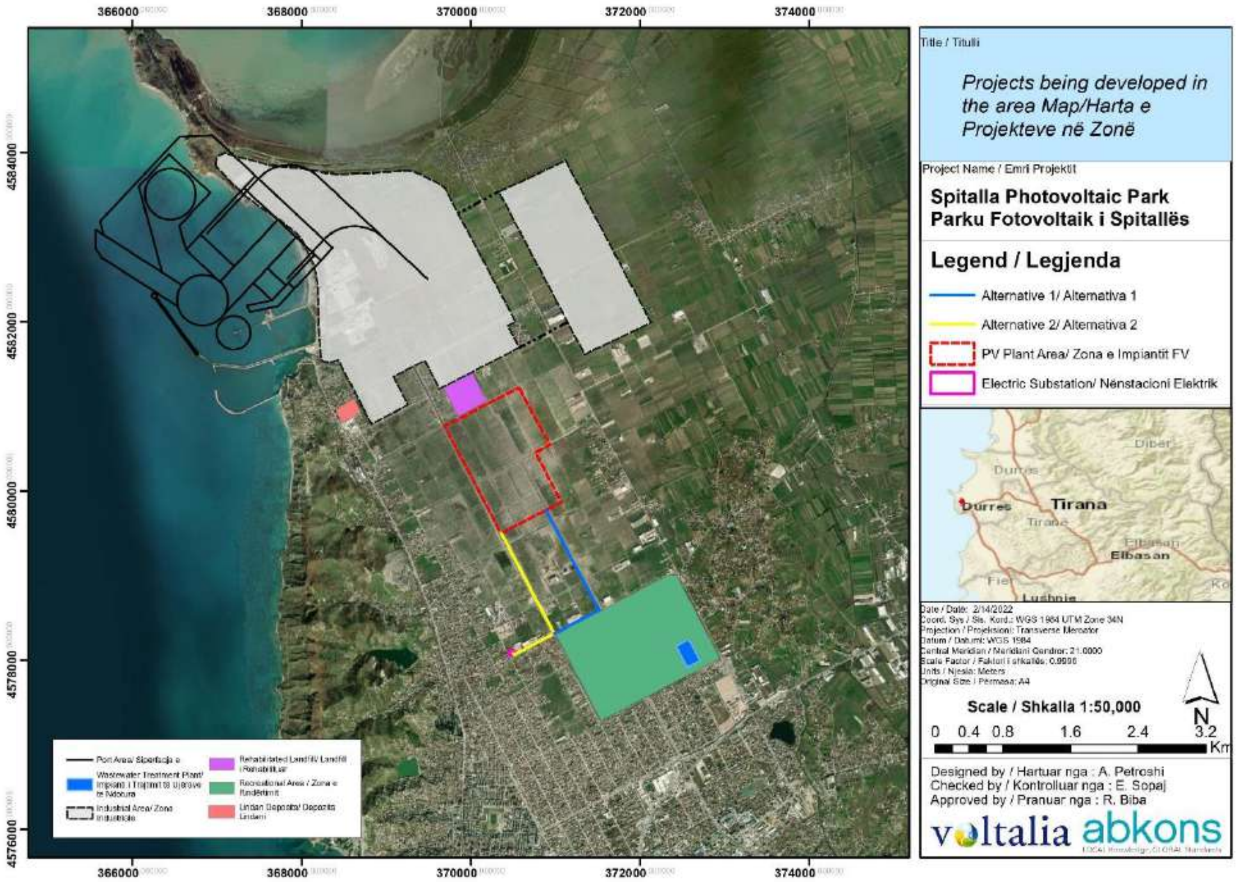
| No. | Questions to be considered in Scoping | Yes/No | Which Characteristics of the Project Environment could be affected and how? | Is the effect likely to be significant? Why? |
|---|---|---|---|---|
| | effluents (whether treated or untreated) to water or the land? | | from human activity (workforce activity). There is potential for wastewater pollutants to contaminate land and water in case of non-proper management and/or accidents. | the construction phase due to the wastewater generation from workforce activity. Appropriate sanitary facilities will be provided.. |
| 7.3 | By deposition of pollutants emitted to air, onto the land or into water? | No | None anticipated | |
| 7.4 | From any other sources? | No | None anticipated | |
| 7.5 | Is there a risk of long-term build-up of pollutants in the environment from these sources? | In case of flooding events. | None anticipated | Potentially significant – further assessment and mitigation details required within the ESIA Report. |
| 8. Will there be any risk of accidents during construction or operation of the Project which could affect human health or the environment? | | | | |
| 8.1 | From explosions, spillages, fires etc. from storage, handling, use or production of hazardous or toxic substances? | No | Technology dependant potential to affect human health and the environment especially during operational phase – in respect of different types of wastes generated from the gas power plant. | Not Significant – Health and Safety measures and procedures should be in place before the construction mobilisation phase and been followed up with strict HSE monitoring and workers HSE equipment have to be used in every occasion. Safety measures to ensure that non-related workers do not enter the construction area during construction activities. |
| 8.2 | From events beyond the limits of normal environmental protection e.g., failure of pollution control systems? | No | N/A | |
| 8.3 | From any other causes? | Yes | Working on high voltage systems, Work on height, | Significant. |
| 8.4 | Could the project be affected by natural disasters causing environmental damage (e.g., floods, earthquakes, landslip, etc.)? | No | Based on literature, several studies conducted in this area have noted a number of flood events. The proposed Photovoltaic plant development on its feasibility study has recommendations to ensure the safety of the dam and minimize the risk of flooding. | Potentially significant – natural disasters may cause environmental impact in case mitigation measures are not properly foreseen prior to construction works. Design of the project should consider possible risks from natural causes. To be further detailed in the |

| No. | Questions to be considered in Scoping | Yes/No | Which Characteristics of the Project Environment could be affected and how? | Is the effect likely to be significant? Why? |
|---|---|---|---|---|
| | | | | following phases of the ESIA. |
| 9. Will the Project result in social changes, for example, in demography, traditional lifestyles, employment? | | | | |
| 9.1 | Changes in population size, age, structure, social groups etc.? | No | None anticipated | |
| 9.2 | By resettlement of people or demolition of homes or communities or community facilities e.g., schools, hospitals, social facilities? | No | None anticipated | |
| 9.3 | Through in-migration of new residents or creation of new communities? | No | None anticipated | |
| 9.4 | By placing increased demands on local facilities or services e.g., housing, education, health? | No | None anticipated | |
| 9.5 | By creating jobs during construction or operation or causing the loss of jobs with effects on unemployment and the economy? | Yes | Around 200 new jobs will be created for people living in the Durrës as part of the project construction. The goal is to maximize the employment in the nearby area, but not all the skills can be found nearby | Significant Economic benefits of Construction Workers Camp might be perceived as opportunity or threat by different villages. |
| 9.6 | Any other causes? | No | None anticipated | |
| 10. Are there any other factors which should be considered such as consequential development which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality? | | | | |
| 10.1 | Will the project lead to pressure for consequential development which could have significant impact on the environment e.g. more housing, new roads, new supporting industries or utilities, etc.? | No | | |
| 10.2 | Will the project lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.<br>• supporting infrastructure (roads, power supply, waste or | Yes | The project will contribute development of power supply | Yes, significant in accordance with government program |

| No. | Questions to be considered in Scoping | Yes/No | Which Characteristics of the Project Environment could be affected and how? | Is the effect likely to be significant? Why? |
|---|---|---|---|---|
| | waste water treatment, etc.)<br>• housing development<br>• extractive industries<br>• supply industries<br>• other? | | | |
| 10.3 | Will the project lead to after-use of the site which could have an impact on the environment? | No | None anticipated | |
| 10.4 | Will the project set a precedent for later developments? | Yes | Increased electricity supply is crucial for development of economy in the project area | Impact is significant and positive |
| 10.5 | Will the project have cumulative effects due to proximity to other existing or planned projects with similar effects? | Yes | Will have visual effect along with other transmission lines.<br>May have cumulative effect on bird due increasing number of wires | Mitigation measures for bird protection will be proposed. |

## Appendix II. Projects being developed in the area

Map Below shows all Projects and Infrastructure in Project Area.




## Appendix III. Stakeholder meetings

**Engagement Schedule**

**Initial Activities during Scoping Phase**

| | | Sep | | October 2021 | | | | November 2021 | | | | December 2021 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task / Activity** | **Identified Stakeholders** | **Week 3** | **Week 4** | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Meeting Date** |
| Initial phase/ Consultation meetings | Ministry of Tourism and Environment (MTE) | | | | | | | | | | | | | | | **27-Sep-21** |
| | Ministry of Infrastructure and Energy (MEI) | | | | | | | | | | | | | | | **20-Sep-21** |
| | Ministry of Agriculture and Rural Development (MARD) | | | | | | | | | | | | | | | **20-Sep-21** |
| | National Institute of Cultural Heritage - Ministry of Culture | | | | | | | | | | | | | | | **22-Sep-21** |
| | National Environment Agency (NEA) | | | | | | | | | | | | | | | **22-Sep-21** |
| | National Territorial Planning Agency (NTPA) | | | | | | | | | | | | | | | **21-Sep-21** |
| | National Agency for the Protected Areas (NAPA) | | | | | | | | | | | | | | | **20-Sep-21** |
| | Transmission System Operator (OST) | | | | | | | | | | | | | | | **22-Sep-21** |
| | Regional Directory of Environment, Durrës Region | | | | | | | | | | | | | | | **27-Sep-21** |
| | Regional Road Department, Directory of Drainage and Irrigation | | | | | | | | | | | | | | | **23-Sep-21** |
| | Regional Agency for the Protected Areas (RAPA) | | | | | | | | | | | | | | | **27-Sep-21** |
| | National NGOs | | | | | | | | | | | | | | | **07-Oct-21** |
| | Prefecture of Durrës Region | | | | | | | | | | | | | | | **23-Sep-21** |
| | Regional Council of Durrës | | | | | | | | | | | | | | | **23-Sep-21** |
| | Mayor of Durrës Municipality (Technical Directories of the Durrës Municipality) | | | | | | | | | | | | | | | **23-Sep-21** |
| | Rrashbull and Katund i Ri Administrative Units | | | | | | | | | | | | | | | **24-Sep-21** |
| | Head of villages at the project area (Vrinas and Rinia) | | | | | | | | | | | | | | | **24-Sep-21** |
| Scoping Disclosure | All the identified stakeholders | | | | | | | | | | | | | | | **TBC** |