



Environmental and Social Scoping Report

**KARAVASTA 140 MW SOLAR PV PROJECT,
ALBANIA**

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REPORT SUMMARY

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1. INTRODUCTION

This Scoping Report has been compiled on behalf of Voltalia S.A (Voltalis), as part of the Environmental and Social Impact Assessment (ESIA) process for the proposed 140 MW Karavasta Solar PV Project in the Divjaka Region of Albania (the Project). Voltalia has appointed Abkons shpk (Abkons), to act as Independent Environmental Consultants (IEC) and perform the ESIA for the Project.

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. This Scoping Report is the first stage of the ESIA process and aims to identify the key potential impacts and sets out the framework for the ESIA.

1.1. Project Background and Overview

Karavasta Solar sh.p.k. established by Voltalia is the developer for the proposed 140 MW Karavasta Solar PV Project located in the Divjaka and Fier municipalities of Albania. 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 implementation of the Project shall also help strengthen the reliability and stability of the energy sector.

The European Bank for Reconstruction and Development (EBRD) has categorized the Project as "A" in terms of its 2019 Environmental and Social (E&S) Policy, as it was considered that this Project could result in potentially significant adverse environmental and/or social impacts, and therefore a comprehensive Environmental and Social Impact Assessment (ESIA) and review of associated documents must be carried out, followed by their public disclosure for a minimum period of 120 days.

Furthermore, the MTE has confirmed that the project is considered to be covered by Annex 1 under Decision of the Council of Ministers (DCM) No. 686 dated 29.7.2015 (amended) on EIA Procedure and categorised as requiring an in-depth 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 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 informed 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 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 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, including an outline of the approach for stakeholder engagement.
- Chapter 5. outlines the identified potential environmental and social impacts of the Project
- Chapter 6: provides the proposed plan and scope for the ESIA, outlining the proposed approach and methodology to assessment and mitigation for the ESIA.
- Chapter 7: summarises the main conclusions and recommendations identified during this scoping exercise.

1.3. Introduction to Project Proponent (Votalia)

Founded in 2005, Votalia 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), Votalia Group also provides services related to Engineering, Procurement and Construction (EPC) and Operations & Maintenance (O&M) for its own power plants as well as for third-party Clients.

With nearly 800 employees, Votalia 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 Votalia Group's growth and diversification towards new countries, technologies and business models.

Votalia Group has an extensive track-record throughout Africa, Europe, Latin 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 Votalia directly owns and operates a total installed capacity of 559.8 MW. As a service provider, Votalia 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.



Votalia Group has an additional secured pipeline of 420 MW, currently in 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

Votalia Group has extensive and renowned experience and capacity in developing and building renewable energy plants. The Company has dedicated EPC teams, which includes 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. In the last 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), Latin America (Mexico, Brazil, Chile) and Middle-East (Egypt, Jordan). Most of those projects were built by the Company as 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, 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's 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.

Health, Safety and Environment Policy

Voltalia Group is steadfast in its commitment to the highest standards and principals in Health, Safety and Environmental (HSE) practices. Within the Voltalia Group the following certifications are held:

- ISO 14001:2015 (Environment);
- ISO9001:2015 (Quality); and,
- ISO 45001:2018 (H&S and Security).

In 2015, the Group introduced standard HSE rules to be complied with at all construction and operation sites. Compliance with these rules is an integral part of new contracts signed by the Group and its suppliers/subcontractors.

For each project, Voltalia Group develops, implements, manages and revises a Health & Safety Plan (H&S Plan), a document that describes and organizes the works to be developed on site, in order to satisfy legal, regulatory and Client requirements. The H&S Plan is part of the Integrated Management System of Voltalia Group and aligns with the requirements of the EN ISO 9001:2008 and OHSAS 18001:2007 standards. Voltalia Group follows a PDCA (Plan, Do, Check, Act) framework, identifying the key actions needed in each part of that cycle and relating them back, where appropriate, to leadership, management, worker involvement and competence.

Voltalia will ensure that its collaborators and others who are employed in the project obtain a high standard of safety awareness. In addition, Voltalia will endeavour to protect the Environment in all of its activities.

2. PROJECT DESCRIPTION

2.1. Project Summary

The Power Plant is called Karavasta Solar, and is located at Remas – Karavasta Lushnje, and Libofsha Fier at the following coordinates: 40°50'56.44"N, 19°27'12.50"E. All project information herein is based on Voltalia Group internal know-how, market sounding and/or proposals from potential counter-parties. Negotiation is still ongoing and all final figures may vary.

Installed capacity	140 MW
Asset type	IPP
Concession	30 years
Location	Fier
Available land	210 ha
Project footprint	196.38 ha
Performance Ratio	85%
Yield (P50) / (P90)	1878 / 1732 Wh/kWp/y



2.2. Project Location and Routing

The proposed Project is located at Libofsha administrative unit, municipality of Fier, Albania and lies approximately 5 km south of the Karavasta Lagoon (Figure 1). The project available land is 210 ha and project footprint will occupy a total of 196.38 Ha of land. The Project site is situated between the villages of Ndërmenas and Hasturkas in the East, the villages of Adriatik and Metaj in the Southeast and the Karavasta Lagoon in the North. The associated 220 kV overhead transmission line (OHL) which will run around 20 km in a southeasterly direction from the Project site to the Fier substation connecting the PV Plant to the national grid.

The nearest villages are Hasturkas and Ndërmenas which lie 800 m and 1500 m respectively to the east of the project area, while the villages of Adriatik and Metaj are situated 4 km and 5.3 km, respectively, southeast from the project area. The village of Karavasta e Re is situated around 5 km north of the project site. The villages of Seman and Seman i Ri are located nearly 5 km to the south of the Project site.

The main landform elements in the Divjaka – Karavasta region are represented by a large plain area in which the Project site is located, the small hills of Divjaka located approximately 8.5 km northeast from the Project site, the coastal lagoon of Karavasta located to the northwest, the Seman and Shkumbin deltas located southwest and northwest (respectively), and sand dunes and sandy beaches to the east.

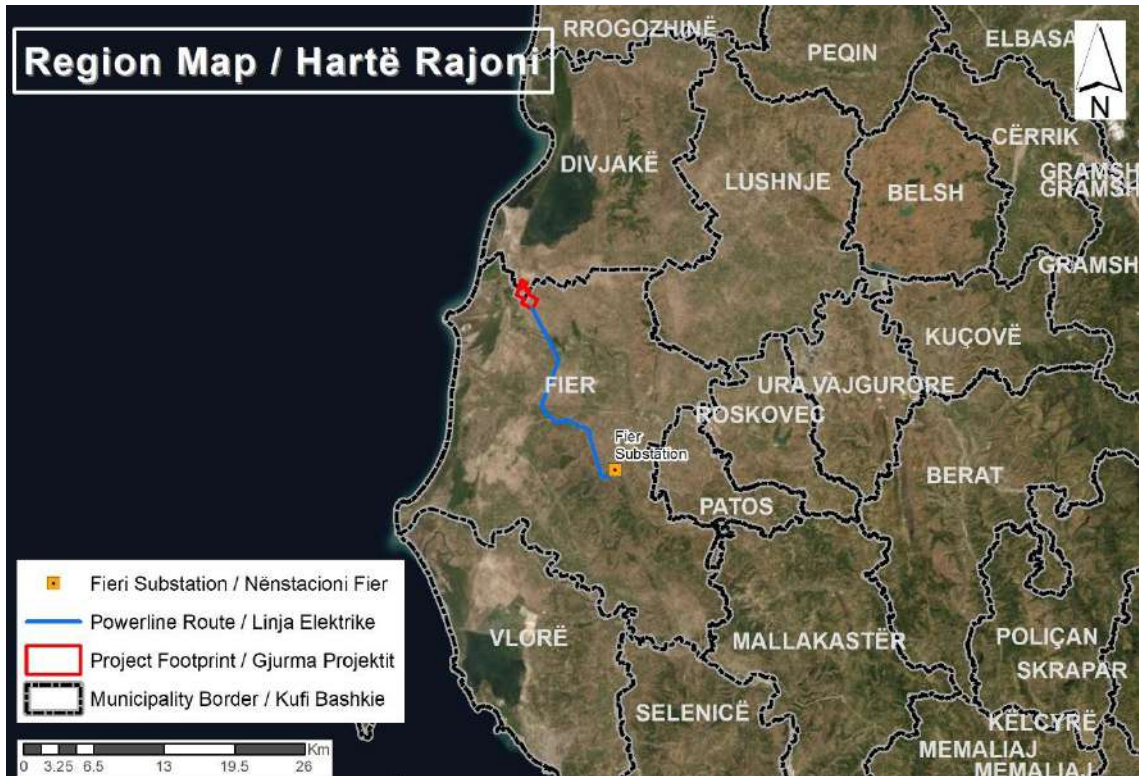


Figure 1: Regional Location of Project

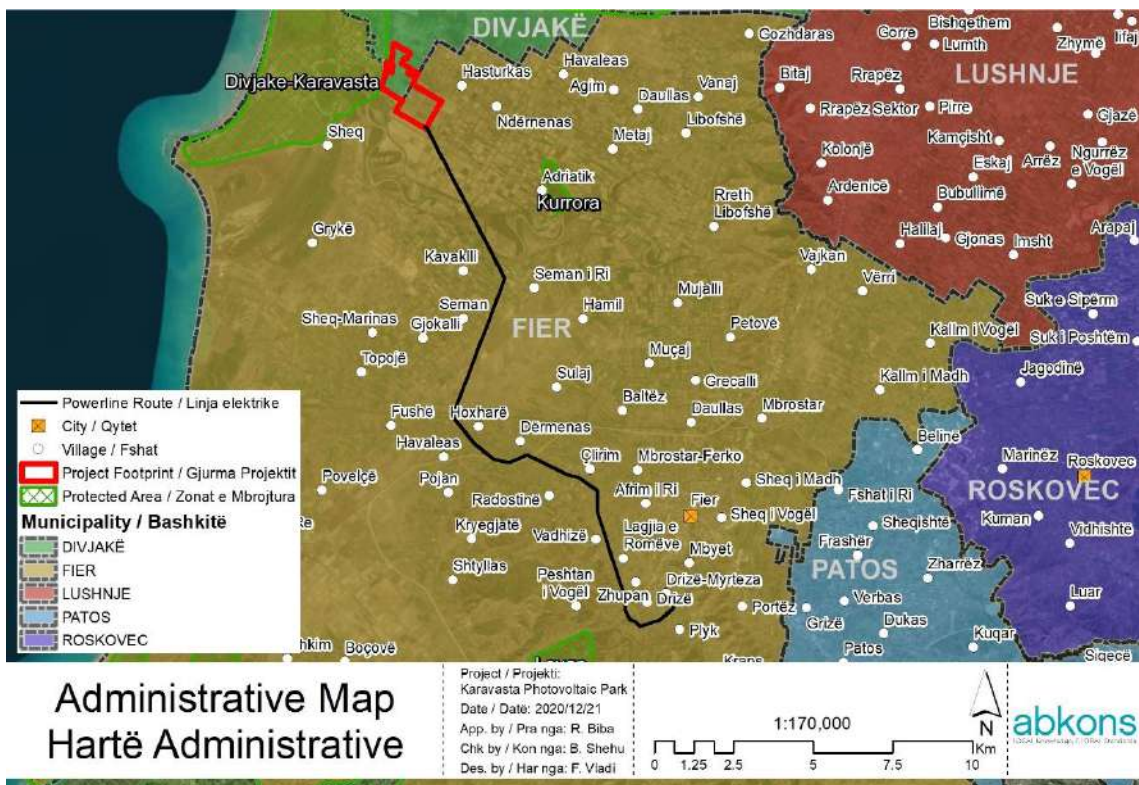


Figure 2: Project districts/ Villages in the Project Area

2.3. Rational for the Project

The Albanian Government is working towards a reliable and more sustainable energy sector, development of which shall be based on exploiting all energy 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 (<https://qbz.gov.al/>) 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;
- 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 overall layout of the PV Project is shown in **Figure 5** below. The Project is designed as a 140 MWp (DC) horizontal single-axis tracking photovoltaic (PV) park and will deliver 110 MW (AC) to the grid.

Figure 3 gives an overview of a utility scale grid-connected solar PV power plant; the main components include:

- **Solar PV modules:** These convert solar radiation directly into electricity through the photovoltaic effect in a silent and clean process that requires no moving parts. The PV effect is a semiconductor effect whereby solar radiation falling onto the semiconductor PV cells generates electron movement. The output from a solar PV cell is DC electricity. A PV power plant contains many cells connected together in modules and many modules connected together in strings to produce the required DC power output. A total of 241,400 PV modules, each generating up to 580 W, 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 $\pm 55^\circ$. 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:** These are required to convert the DC electricity to alternating current (AC) for connection to the utility grid. Many modules in series strings and parallel strings are connected to the inverters. The Project will require a total of 32 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 220 kV.
- **The grid connection interface¹:** 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 Fier Substation located approximately 20 km southeast from the Project Site via a 220-kV overhead transmission line. The proposed routes for the transmission line are shown below in Figure 6.

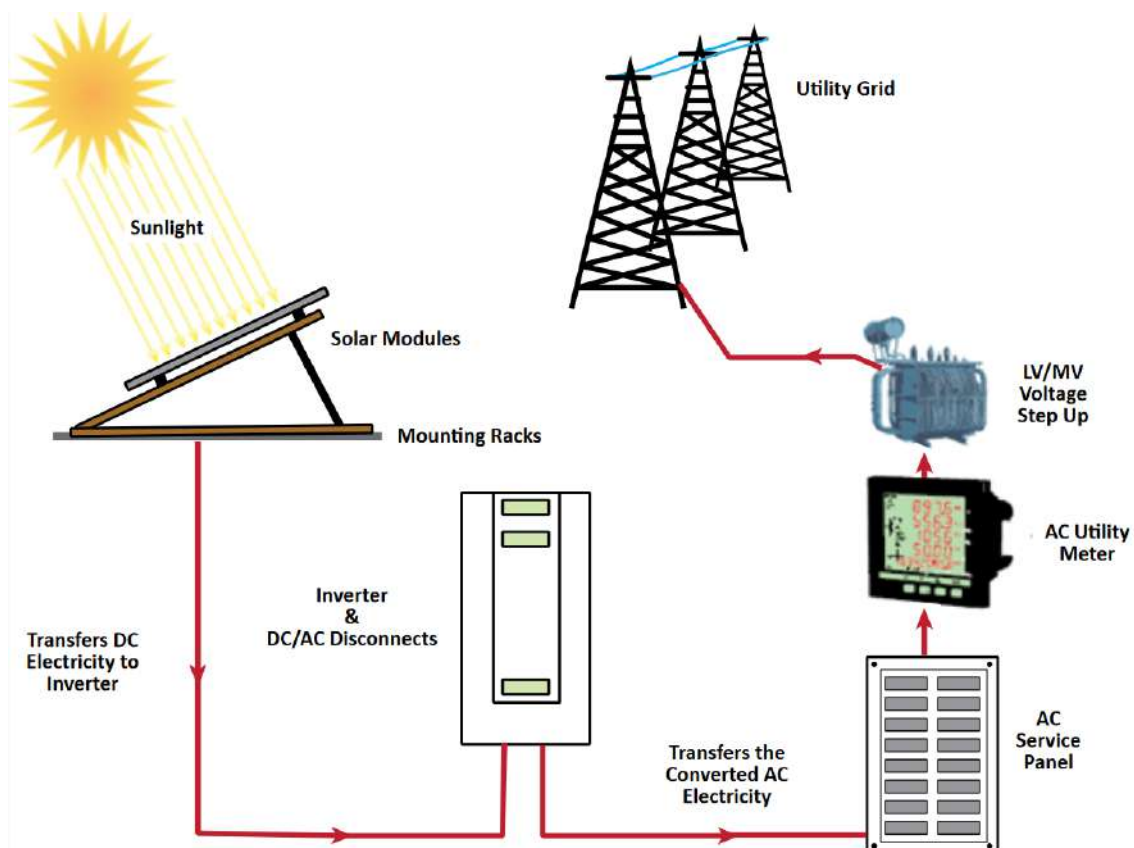


Figure 3: Overview of Utility Scale Solar PV Plant (IFC, 2015)

¹The company need to confirm which the most preferable grid connection is in order to identify the villages potentially affected.

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 220 kV overhead transmission line (OHL) to connect the Project to the National grid. This will be achieved via 20 km OHL connecting the Project to the substation located in the suburban area of the city of Fier; the proposed OHL route lies within the county of Fier and the Administrative Units of Fier Municipality. The OHL route is shown below in Figure 6 below.

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.

PV and OHL Project Location



Legend

- Project FootPrint
- OHL Route

Figure 4: PV and OHL Project Location



Figure 5: Initial Project Layout

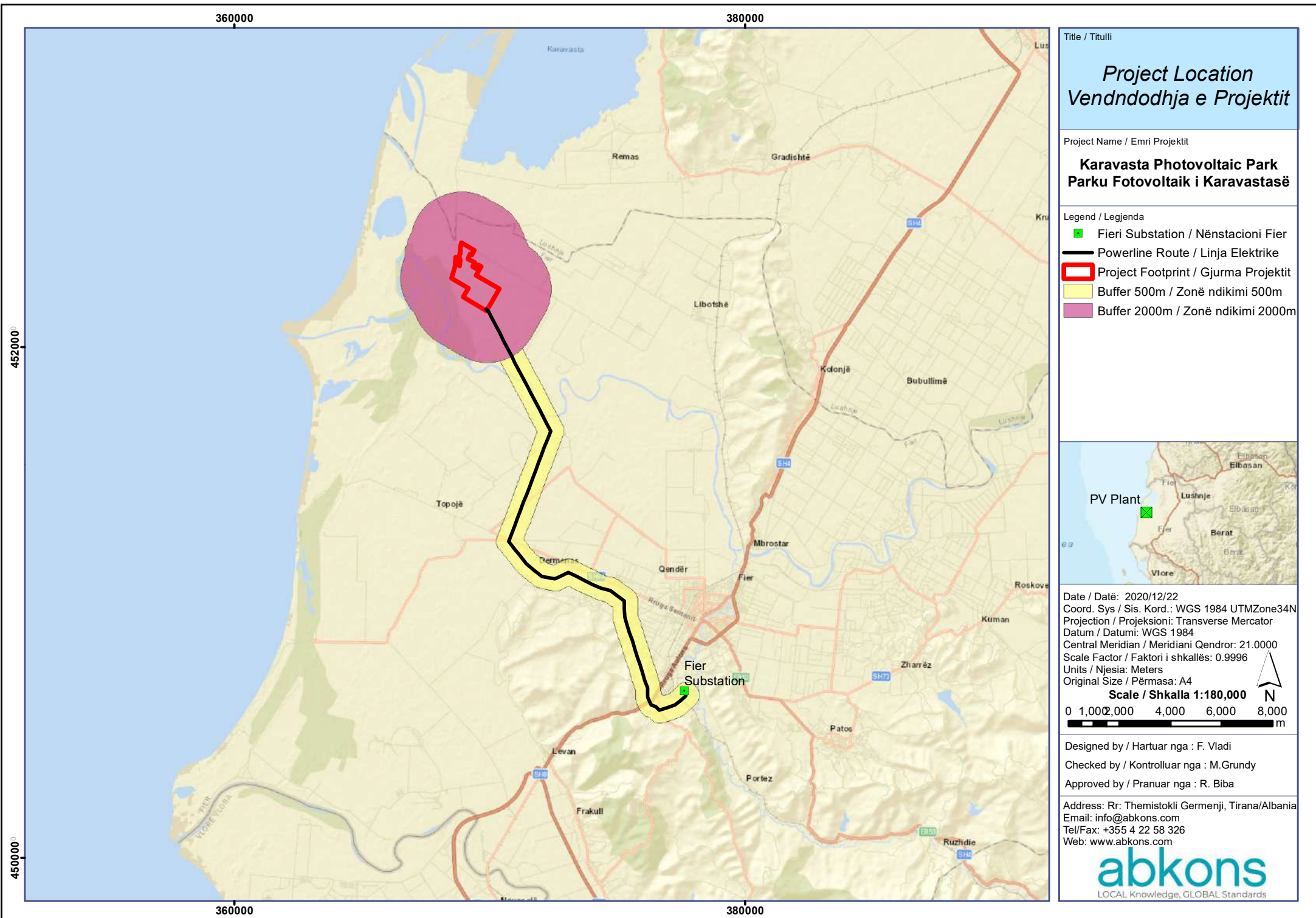


Figure 6: Overall Project Location and Transmission Route options

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:** such as site preparation, mobilisation of equipment and materials to site.
- **Construction and Installation:** including 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 140 MW and it is proposed to be built in a single phase. Construction of the Project is planned to commence in Q3 2021 and be in full operations in Q3 2022. 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 in parallel with 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 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 development of detailed design, construction and commissioning of the plant.

The mobilization phase includes the ordering of materials and equipment, signing contracts with subcontractors and 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 clearing, grading and levelling of the site and establishment of on-site facilities and 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 is 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;
- 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 roadways 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 digger/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 construction period are 3 months site preparation and 8 months construction (see Table 1). The final construction schedule will be specified 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 near-by accommodations.

OHL Transmission Line

The overhead transmission line (OHL) will be supported and guided by pylons connecting the Project to the Fier 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 1: Construction Schedule

Tasks	Duration	Estimated date
Construction notice to proceed	1 Day	October 2021
Engineering and procurement	100 Days	October 2021 – January 2022
Site Mobilization	20 Days	January 2022
Site Preparation	90 Days	February – April 2022
Trackers deliveries and mechanical installation	150 Days	April – August 2022
Electrical equipment deliveries and Electrical installation	120 Days	June – September 2022
Commissioning	40 Days	September – October 2022
Performance Tests	20 Days	October 2022
Commercial Operation Date	1 Day	November 2022

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 SCADA system which will be manned during the daytime by fully qualified and trained technicians.

Day to day facility operations will involve both 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 contains for example 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; and
- 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 m³ of water per wet clean, and up to a total of 1,200 m³ per year. It is not expected to use any additive. Nevertheless, in case of usage, it must be biodegradable with low environmental impact and contain no Volatile organic compounds (VOCs), Phosphate and be Chlorine Free.

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 well if available onsite. Otherwise 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 20 job opportunities will arise during the operation phase, including skilled and semi-skilled labour (such as electrical and mechanical technicians) 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 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 for 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 structure 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 Karavasta 140 MW 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 through 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.

Hydro: 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 hydro project wholly depends on having the correct resources and topography to enable the construction and operation of such a facility. A hydro project is not feasible at the proposed Project site.

Wind energy: the wind resource is considered unknown in Albania; the challenges of supply-demand balancing are 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 sites close proximity to the protected Karavasta National Park, which is recognised for its importance for bird species, and therefore 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 deforestations;
- Farming lands, especially with vineyards and orchards;
- Parks and natural reserves;
- Geologically unstable areas;
- Special landscape or with an architectural and historical value.

The OHL route is composed of principally of agricultural land . The proposed route has been selected specifically to avoid the need for any physical displacement, and importantly a large portion of the OHL follows the same route of the proposed 110 kV OHL that has already received the necessary approvals but has yet to start construction; the proposed route of the Project 220 kV OHL as well as the planned 110 kV line are shown in Figure 6. 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 account of 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 AND LEGISLATIVE 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 practice 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 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 2 below.

Table 2: 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	The EIA for the Project will be submitted to MTE and NEA for control, review and approval.

Legislation	Overview	Relevance to the Project
	Agency (NEA) and Ministry of Tourism and Environment (MTE) in the procedure, review of EIA report and final approval.	
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, under Annex I: Projects subject to In-Depth EIA Procedure, include:

- 20. Construction of power lines at height, with a voltage over 220 kV and length over 10 km.

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) on 21st September 2020, they confirmed that the project is considered to be covered by Annex 1 and categorized for the in-depth ESIA.

A summary of the overall EIA decision making process is presented below in Table 3.

The In-depth EIA procedure flowchart along with timelines is illustrated in the Figure 7 below.

Table 3: 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. 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; b) IF the project falls under Annex 2 , the Consultant prepares the preliminary EIA study and proceeds with Preliminary EIA process; 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.	45 days to obtain a decision /	Technical report on the proposed project,

Step	Action	Timeline	Documents to prepare
	<p>NEA may accept this procedure, and may also require additional information. NEA will then consult with the state stakeholders (at national and local level) and proceed with a decision/ approval or not.</p> <p>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.</p>	<p>an approval and declaration</p>	<p>Preliminary EIA report, Payment of 30'000 ALL for NEA</p>
<p>Environmental Interaction Report (EIR)</p>	<p>The consultant prepares and sends the EIR as the first step of the in-depth EIA Procedure.</p> <p>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;</p>	<p>45 days to obtain a decision and recommendations</p>	<p>Environmental Interaction Report (EIR) No payment is required</p>
<p>Public consultation</p>	<p>The consultant prepares the application for public hearing;</p> <p>NEA publishes EIR for 20 days (in NEA webpage);</p> <p>Consultant distributes the notification for public hearing (place, date and time) in TVs, radio, newspaper;</p>	<p>After 20 days from application organise the public hearing</p>	<p>EIR and application for public hearing. No payment is required for application;</p> <p>After public hearing: Public consultation report, containing: Presentation for stakeholders, MoM-s of the discussions; Consultation form and signature of stakeholders.</p> <p>Costs of publications and public hearing to be covered by the Developer;</p>
<p>In-depth EIA</p>	<p>Consultant submits the in-depth EIA package to MTE;</p> <p>MTE forwards the application to NEA;</p> <p>NEA consults the EIA report with stakeholders and may require additional information;</p> <p>NEA takes a decision, approve or not the EIA report;</p> <p>If approved, MTE issues an EIA declaration to the Developer/ Consultant</p>	<p>60 days to obtain the EIA declaration.</p>	<p>EIA package contains:</p> <ul style="list-style-type: none"> • Technical report on the proposed project, • Non-technical summary of the in-depth EIA report • In-depth EIA report, • Public consultation Report

Step	Action	Timeline	Documents to prepare
			Payment of 50,000 ALL for NEA

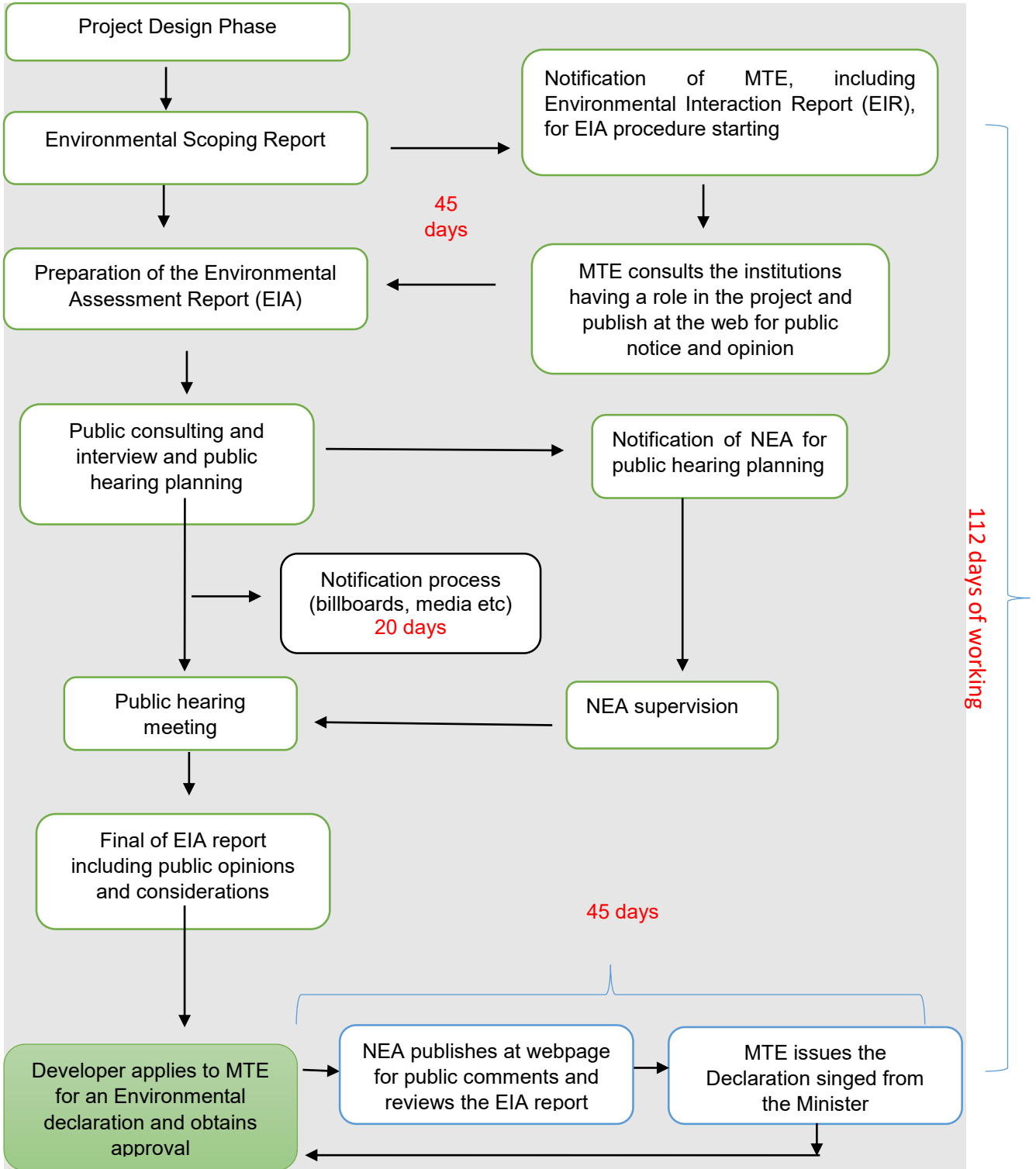


Figure 7: Procedure for In-depth EIA and Timeline according to Albanian Legislation

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 Fier;
- Municipality of Divjaka.

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 4 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 4: 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	The EIA baseline characterization of biodiversity in the Project Area includes a description of protected

Legislation	Overview	Relevance to the Project
	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.	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 occur close to a protected area - National Park Divjake - Karavasta Category II of protected areas.
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 5.

Table 5: 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 Fier 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 6.

Table 6: 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	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

Legislation	Overview	Relevance to the Project
	<p>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^{2/} shores and water protection areas.</p>	<p>other specific laws. Protected areas may include the following:</p> <p>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.</p>
<p>DCM No. 177 (31.3.2005)</p>	<p>“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.</p>	<p>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 standards can be applied but this shall be agreed with authorities through a clarification procedure for (potential) construction facilities.</p>

² 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
DCM No. 379 (25.5.2016)	<p>“On the approval of the regulation³ 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.</p>	<p>The standard set by this regulation (immediate zone of protection) has been considered in the EIA and appropriate mitigation measures have been proposed.</p>
Air		
Law No. 162 (04.12.2014 enforced by the January 2018)	<p>“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.</p>	<p>Mitigation measures to limit the impact of project activities have been proposed in the EIA.</p>

³ 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.

Legislation	Overview	Relevance to the Project
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 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.	Certificate of technical compliance is issued by SGS-Albania ⁴ and it is mandatory for all vehicles registered in Albania (with Albanian license plate). Compliance with this guideline has 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.

⁴ <https://www.automotivealbania.sgs.com>

Legislation	Overview	Relevance to the Project
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 noise generation and noise level administration in urban and touristic areas.	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. 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 ⁵ .	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	Compliance with this instruction has been considered in the development of mitigation measures of the EIA.

⁵ <https://www.automotivealbania.sgs.com>

Legislation	Overview	Relevance to the Project
	specific zones and aims to ensure adequate noise exposure protection for human health.	
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 (23.04.2014)	“On the approval of the rules for non-hazardous waste transfer and the data to 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	Non-hazardous wastes generated during the construction of the Project will be transferred and disposed of in accordance with this directive.

Legislation	Overview	Relevance to the Project
	NEA and obtain a personal waste generation number.	
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 will 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 7.

Table 7: 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	The project may be the subject of several inspections as regulated in Albanian legislation and standards. Compliance

Legislation	Overview	Relevance to the Project
	regulates the inspection of the installations related with industrial processes in Albania.	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.
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 8.

Table 8: 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. 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

Legislation	Overview	Relevance to the Project
		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 (07/08/2005) amended by 467/2011	This decision defines the procedures for issuing import, export, and production licenses for civilian use of explosive material.	The project needs to comply with the explosive importation rules. The application for explosives importation and the required documentation is to be submitted to the Ministry of Defence.

3.2.6.1. Albanian Legislation for the Energy Sector

Table 9: 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. 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 10.

Table 10: International Conventions and agreements signed/ratified Albania

Convention/Agreement	Overview	Relevance to the Project
General		
<p>Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (1998)</p> <p>Ratified- 26/10/2000</p>	<p>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 justice⁶.</p>	<p>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.</p>
Climate Change		
<p>UN Framework Convention on Climate Change (UNFCCC) (1992) entered into force in 1994</p> <p>Ratified- 01/01/1994</p>	<p>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 human interference with the climate system.</p>	<p>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.</p>
<p>Paris Agreement at the COP21 in Paris on 12 December 2015, entered into force on 4 November 2016</p> <p>Ratified- 21/09/2016</p>	<p>The Paris Agreement builds on the Climate Change Convention to combat climate change⁷.</p>	<p>The Project is a renewable energy project and therefore in general fulfils this requirement.</p>
<p>Kyoto Protocol</p> <p>Ratified- 01/04/2005</p>	<p>The Kyoto Protocol is an international agreement linked to the United Nations</p>	<p>The Project is a renewable energy project and therefore in general fulfils this requirement.</p>

⁶ <http://ec.europa.eu/environment/aarhus/index.htm>

⁷ http://unfccc.int/files/paris_agreement/application/pdf/qa_paris_agreement_entry_into_force.pdf

Convention/Agreement	Overview	Relevance to the Project
	<p>Framework Convention on Climate Change; signatories commit to setting internationally binding emission reduction targets⁸.</p>	
Water		
<p>Convention on the Protection and Use of Trans boundary Watercourses and International Lakes (1992)</p> <p>Ratified- 05/01/1994</p>	<p>Avoid or minimize adverse effects on water resources and water quality</p>	<p>The study area is situated near the Karavasta Lagoon.</p>
Biodiversity		
<p>Convention on Biological Diversity (CBD) (1992)</p> <p>Ratified- 05/04/1994</p>	<p>Avoid or minimize adverse effects on important habitats and species, internationally and naturally designated nature conservation sites; conservation, sustainable and equitable use of biodiversity.</p>	<p>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.</p>
<p>Convention on the Protection of Wild Flora and Fauna and Natural Habitats in Europe (Bern Convention) (1976)</p> <p>Ratified- 02/03/1998</p>	<p>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 species⁹; to avoid or minimize adverse effects upon important habitats and species, internationally and naturally designated nature conservation sites.</p>	<p>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).</p>
<p>Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (1979)</p> <p>Ratified- 01/09/2001</p>	<p>Avoid or minimize adverse effects upon migratory species</p>	<p>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</p>

⁸ <https://unfccc.int/resource/docs/convkp/kpeng.pdf>

⁹ <https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/104>

Convention/Agreement	Overview	Relevance to the Project
		convention that apply to Albania.
<p>Agreement on the Conservation of African-Eurasian Migratory Water birds (1995)</p> <p>Ratified- 01/09/2001</p>	<p>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 journeys¹⁰. Avoid or minimize adverse effects upon migratory water bird species.</p>	<p>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.</p>
<p>Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1975)</p> <p>Ratified- 27/06/2003</p>	<p>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 survival¹¹.</p>	<p>Threatened and endangered species and their habitats along with mitigation measures for the protection of flora and fauna will be identified in the ESIA.</p>
Cultural Heritage		
<p>Convention on the Protection of the World Cultural and Natural Heritage (1989)</p> <p>Ratified- 10/07/1989</p>	<p>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.</p>	<p>Cultural and natural heritage sites along with mitigation measures for their will be identified in the ESIA.</p>
Labour		
<p>ILO Convention 29 Forced Labour Convention (1930) and ILO 105 Abolition of Forced Labour Convention (1957))</p> <p>Ratified- 25/06/1957 & 27/02/1997</p>	<p>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.</p>	<p>Local workers will be employed on the project. The project will adopt monitoring measures to ensure compliance with the convention.</p>

¹⁰ <https://www.cms.int/en/legalinstrument/aewa>

¹¹ <https://www.cites.org/eng/disc/what.php>

Convention/Agreement	Overview	Relevance to the Project
ILO Convention 87 Freedom of Association and Protection of the Right to Organize (1948) 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 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) 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 for men and women workers for work of equal value.	Local workers will be employed on the project. The project will adopt monitoring measures to ensure compliance with the convention.

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 140 MW of photovoltaic plant;
- Construction of 20 km 220 kV overhead transmission line (OHL).

Based on the above the main PV Project is not considered to fall under the definition of projects listed under 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);
- As an Annex II Project an EIA would not be mandatory, rather subject to local authority screening for potential requirement for local EIA. However, it is noted that the OHL element of the Project falls under the following Annex I project definition:
- 20. Construction of overhead electrical power lines with a voltage of 220 kV or more and a length of more than 15 km.

4. ENVIRONMENTAL & SOCIAL CONTEXT/BASELINE

4.1. Physical Environment

4.1.1. Climatic conditions

The climate in the coastal plain is typical Mediterranean, with a low annual rainfall (average rainfall of 893 mm) in the Project area, with 70 to 75% of rainfall occurring from October to March. The average annual temperature is 18.8 °C, with a mild winter.

Maximum and minimum temperatures are observed in August (maximum) and January, while the lowest rainfall was in August and the highest in November. The highest evapotranspiration is in July and August while the lowest is predictably in the winter months. The humidity deficit, as in the whole Mediterranean area, is in the summer and autumn seasons until November.

Evaporation estimated from climatic data of Vlora station (Hydrometeorological Institute, 2001) reach an annual value of about 1200 mm. This means that the nearby lagoon and hence surrounding area has always faced strong seasonality in its water regime and salinity, as is usually the case for Mediterranean coastal lagoons.

Table 11: Average monthly temperature, precipitation and evapotranspiration¹²

Muaji	1	2	3	4	5	6	7	8	9	10	11	12	Viti
Temp (°C)	8.2	9.1	11	14.1	18.3	22.3	24.3	24.4	21.6	17.6	13.2	9.7	16.2
Prec.(mm)	117	103	87	81	66	35	25	34	57	93	146	119	963
Evap.(mm)	49	55	66	85	110	134	146	146	130	106	79	58	1,163

The wind rose (Figure 8:) shows that two main directions prevail: South - North and North - South with dominance that South-North.

¹² Institute of GeoSciences, Energy, Water and Environment

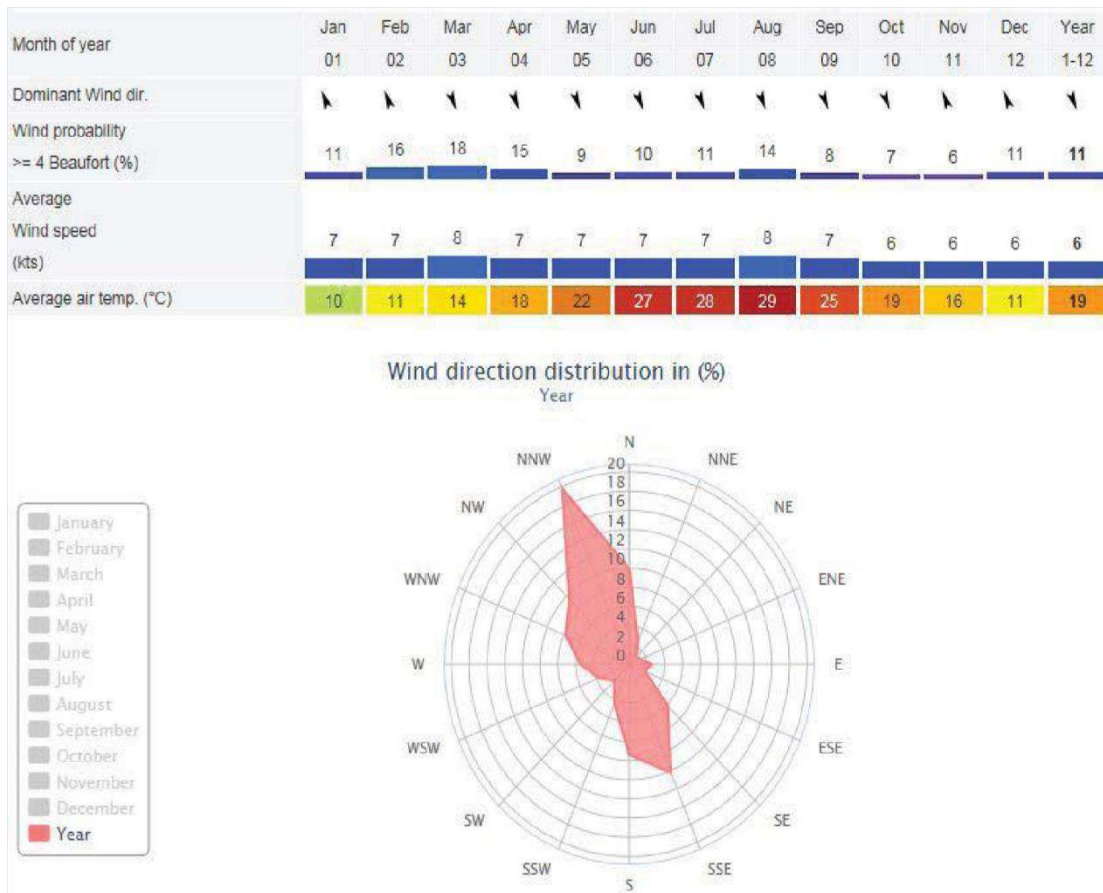


Figure 8: Predominant wind direction in the project area¹³

The climate zone conditions play an important role in how the area has developed and in the formation of special phenomena, such as:

- The presence of a characteristic flora and fauna throughout the year;
- The presence of a large number of habitats located in this area;
- Relatively high biodiversity;
- Rich offer of climate potentials for recreational and tourism development;
- Intensive agricultural activities development during the year.

The local climatic conditions impact on community life is significant especially during the summer when agricultural activities rely on artificial watering techniques.

4.1.2. Air Quality

Existing air quality conditions in the Project area have been identified using the European Environmental Agency (EEA) Air quality Database (AirBase)¹⁴. According to the data available from the EEA AirBase, the NO_x annual average concentration is estimated to be 20-30 µg/m³ and SO₂ annual average concentrations are estimated to be ≤ 5 µg/m³; which lies within national and EU air quality standards.

¹³ Institute of GeoSciences, Energy, Water and Environment

¹⁴ <https://www.eea.europa.eu/themes/air/air-quality/map/airbase>

Project 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-hour) = 2000 µg/m ³	CO (8- hour) = 10000 µg/m ³
NO _{2(1 year)} = 20-30 µg/m ³	NO _{2(1 year)} = 60 µg/m ³	NO _{2(1 year)} = 40 µg/m ³
SO _{2(1 year)} ≤ 5 µg/m ³	SO _{2(1 year)} = 35 mg/m ³	SO _{2(24 hours)} = 125 µg/m ³
	PM _{10(1 year)} = 60 µg/m ³	PM _{10(1 year)} = 40 µg/m ³
	PM _{2.5 (1 year)} = 15 µg/m ³	PM _{2.5 (1 year)} = 25 µg/m ³
		O _{3 (8- hour)} = 120 µg/m ³

NO_x annual average, 2005

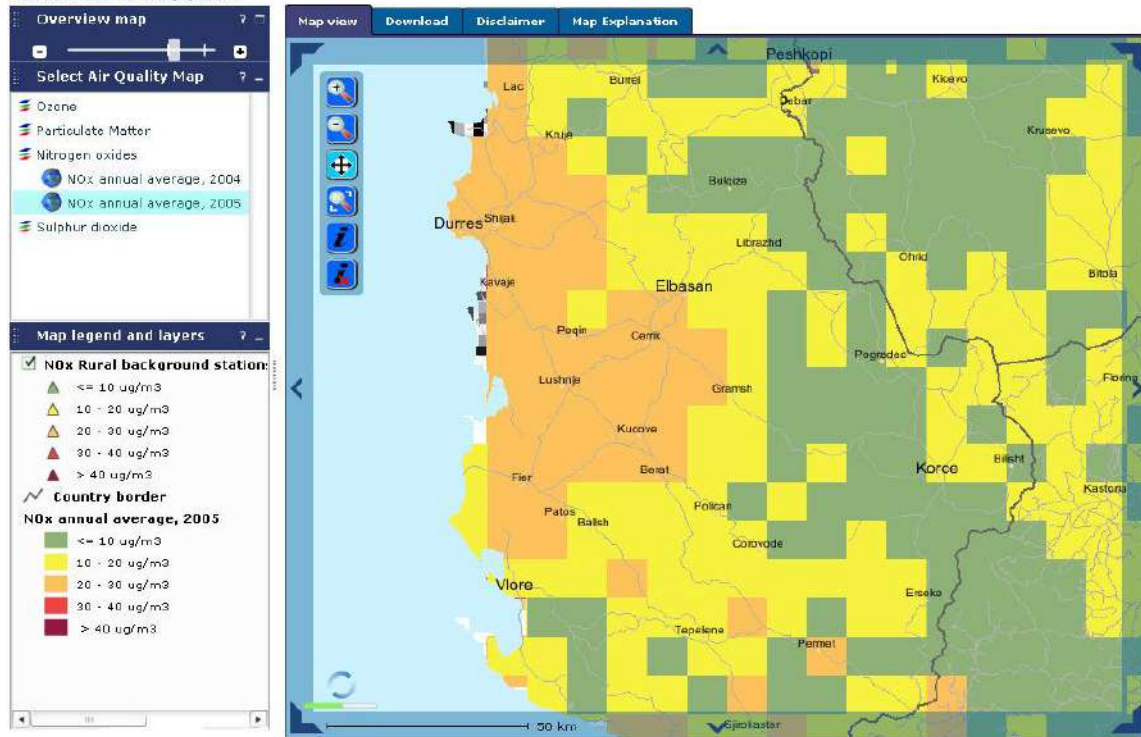


Figure 9: NO_x Annual Average Background Concentration (Source: EEA Interpolation dataset, 2005)

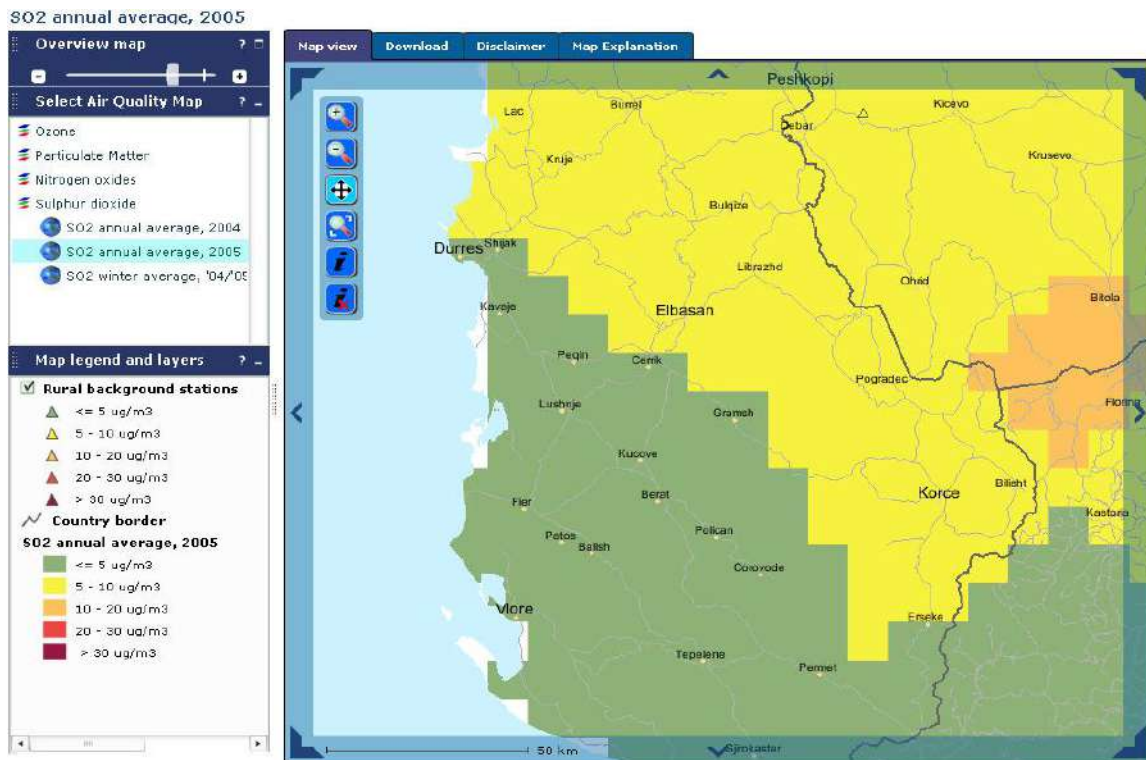


Figure 10: SO₂ Annual Average Background Concentration (Source: EEA Interpolation dataset, 2005)

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, consequently low levels of expected NO_x, CO₂ and SO₂ concentrations, directly related to the absence of air pollution sources in these rural areas.

4.1.1. Hydrology

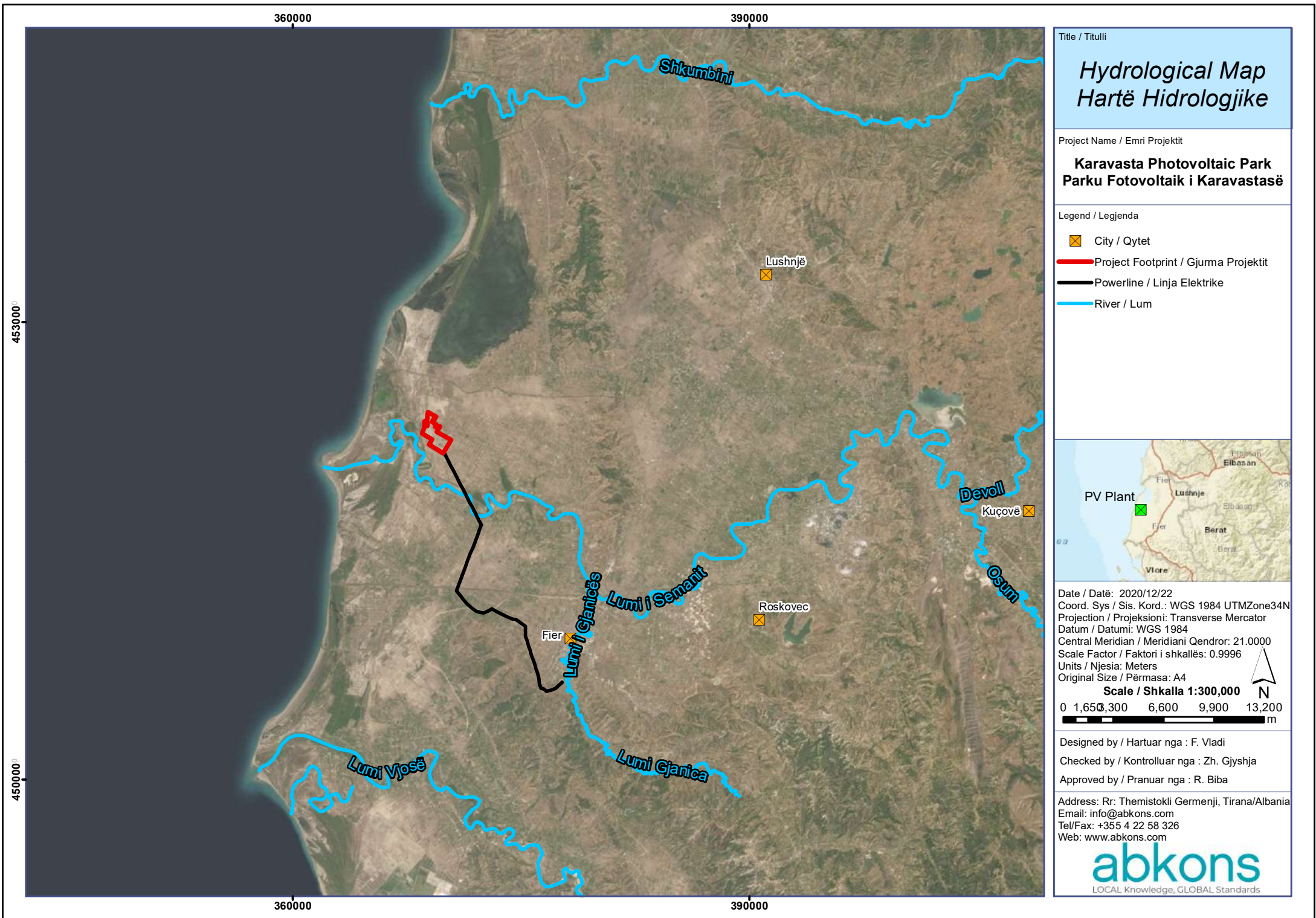
There are several water bodies present in the Project area, as follows:

- part of the Adriatic Sea - over 4 km to the west;
- the lagoon of Karavasta - 3.5 km to the north;
- Seman River - 400 m to the south;
- the Shkumbin River - 21 km to the north;
- Tërbuf and Myzeqe emissaries/drainage channels - 20 km to the north, etc.

River Seman is one of the most important and interesting rivers of the Albanian hydrography. It has a catchment surface area (F) of 5,649 km², average altitude (H) of 889 m and length (L) of 281 km. It has two tributaries, River Osumi (F=2,073 km², H=852 m) and River Devolli (F=3,122 km², L=193 km).

River Shkumbin originates in the eastern Valamara Mountains (South-eastern Albania) and flows inside a narrow and deep valley between the Mokra and Shebenik Mountains to the east and the Polis Mountains to the west. The River Shkumbin is 187.4km long with a catchment area of 2,459 km², and an average flow of 48m³/sec. At the end of its course, the river crosses the Myzeqe Plain in a distance of 35-40km, meandering through it, and forms a small delta in Karavasta Lagoon.

Both Seman and Shkumbin rivers have suffered different human interventions caused by the removal of the riparian zone, inert material (sand, gravel, and stones) exploitation, collapse of embankments, which have resulted in the alteration of river hydro-morphology.



Title / Titulli
**Hydrological Map
 Hartë Hidrologjike**

Project Name / Emri Projektit
**Karavasta Photovoltaic Park
 Parku Fotovoltaik i Karavastësë**

Legend / Legjenda

- City / Qytet
- Project Footprint / Gjurma Projektit
- Powerline / Linja Elektrike
- River / Lum



Date / Datë: 2020/12/22
 Coord. Sys / Sis. Kord.: WGS 1984 UTMZone34N
 Projection / Projektioni: Transverse Mercator
 Datum / Datumi: WGS 1984
 Central Meridian / Meridiani Qendror: 21.0000
 Scale Factor / Faktori i shkallës: 0.9996
 Units / Njesia: Meters
 Original Size / Përmasa: A4
Scale / Shkalla 1:300,000

Designed by / Hartuar nga : F. Vladi
 Checked by / Kontrolluar nga : Zh. Gjyshja
 Approved by / Pranuar nga : R. Biba

Address: Rr: Themistokli Gërmenji, Tirana/Albania
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 Web: www.abkons.com



Figure 11: Hydrological Map

These interventions along with climate change, have resulted in several consequences, such as i) lowering of the river bed due bottom erosion, ii) flooding over the lower area, iii) erosion of agricultural land, iv) destruction of embankments, and v) lowering of groundwater level in water wells. The damage of the green (riparian) belt is observed almost along the entire course of the Seman River. The lack of a green belt at the mouth of the river (in Topoja area) has also allowed the penetration of the salt water over the plain area, turning agricultural land uncultivable. The erosion of agricultural land is mainly observed in the lower river course zone.

Irrigation and Drainage Systems

The irrigation-drainage system in the Project area comprises the first, second and third drainage (see Figure 13) and irrigation channels (see Figure 14), of which the Terbufi and Myzeqe emissaries are the main ones in the region. The Karavasta e Vogel area, Divjaka - Karavasta area and former swamp area of Terbuf were liberated from water due to improvements made during the period 1946 -1983 and protective embankment along the river banks. The irrigation-drainage system is not as functional as it once was before '90s and the plain agricultural area frequently comes under the flooding water.

The irrigation and drainage systems, although present, are not functioning properly, and only a small portion of the agriculture land in the area benefits from these services. This is mostly because maintenance through the years has not been performed correctly, and the channels has been filled with various materials that do not allow their correct function. Out of 6.200 Ha in the area, only 320 Ha are irrigated through the system.

Recently, only some second range drainage channels, mostly with south – north extension, have recovered, as they have been excavated and the sediments removed on both sites of the channel; their scarps are also cut giving the necessary steepness of about 45-50°. After excavation and soil removal, their trapezoidal transversal section was evident: long base = 7-8 m, short base = 4 m, depth = 4 m (Figure 12). Not all the excavated channels were observed to be filled with water. The south-north extension channels along their southern extreme were dry (without water), while their north extension and east-west channel were filled with water up to depth 1.5-2.0 m.

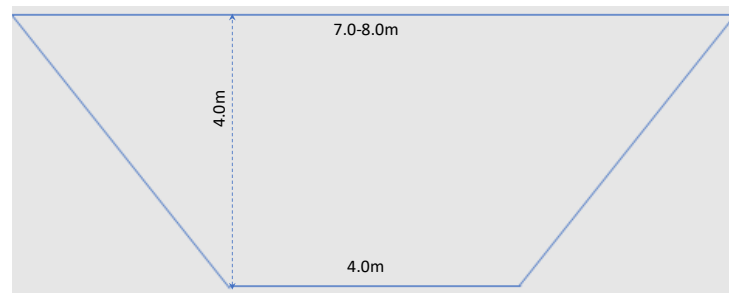
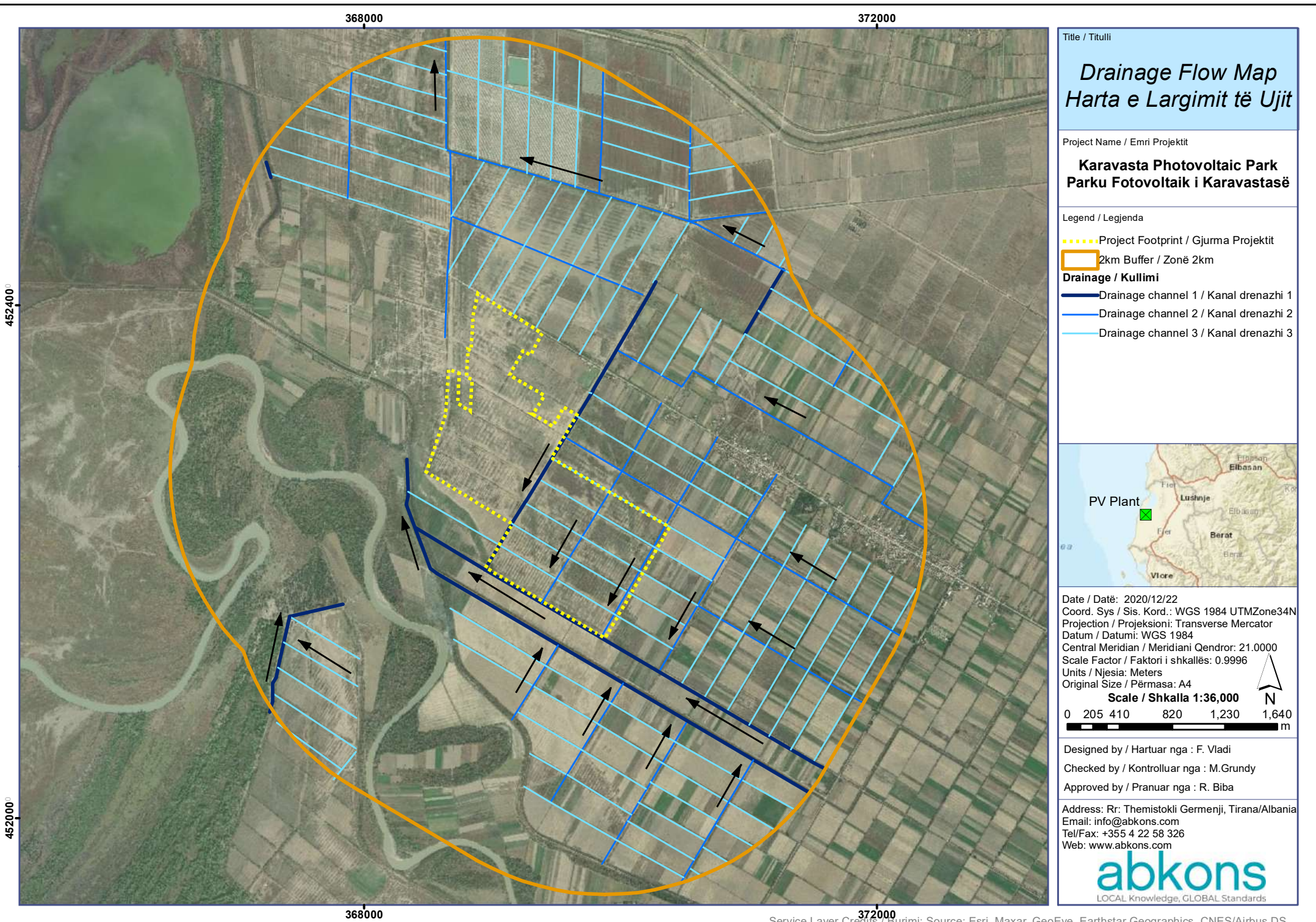


Figure 12: Transversal section of the second range channel

Figure 15 below shows views across a range of drainage and irrigation channels.



Title / Titulli
**Drainage Flow Map
Harta e Largimit të Ujit**

Project Name / Emri Projektit
**Karavasta Photovoltaic Park
Parku Fotovoltaik i Karavastësë**

Legend / Legjenda

- Project Footprint / Gjurma Projektit
- 2km Buffer / Zonë 2km
- Drainage / Kullimi
- Drainage channel 1 / Kanal drenazhi 1
- Drainage channel 2 / Kanal drenazhi 2
- Drainage channel 3 / Kanal drenazhi 3

Date / Datë: 2020/12/22
 Coord. Sys / Sis. Kord.: WGS 1984 UTMZone34N
 Projection / Projektioni: Transverse Mercator
 Datum / Datumi: WGS 1984
 Central Meridian / Meridiani Qendror: 21.0000
 Scale Factor / Faktori i shkallës: 0.9996
 Units / Njesia: Meters
 Original Size / Përmasa: A4

Scale / Shkalla 1:36,000

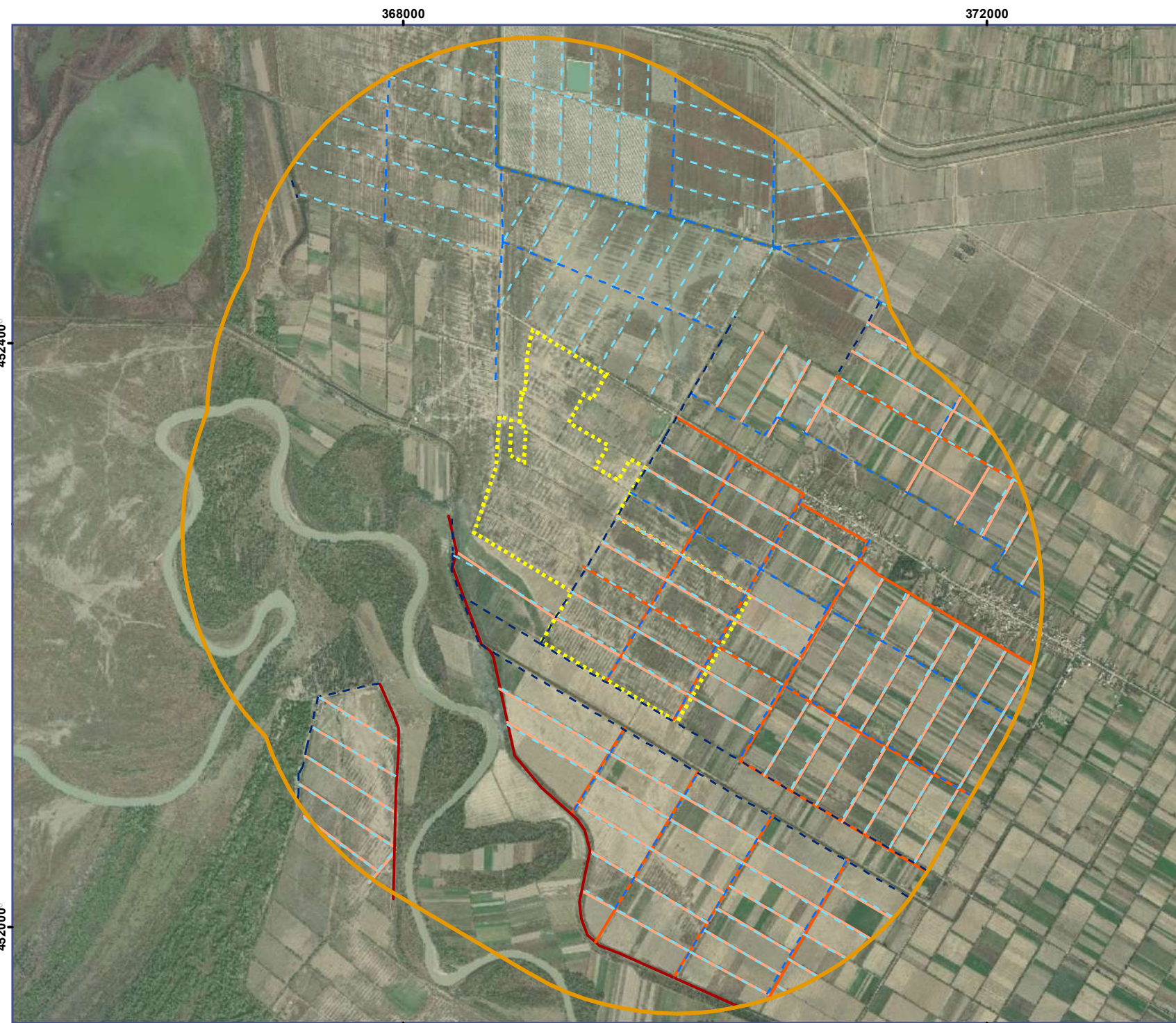
0 205 410 820 1,230 1,640 m

Designed by / Hartuar nga : F. Vladi
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 LOCAL Knowledge, GLOBAL Standards

Figure 13: Drainage channel system/ network



Title / Titulli

Irrigation/Drainage Map Harta Vaditës/Drenazhim

Project Name / Emri Projektit

Karavasta Photovoltaic Park Parku Fotovoltaik i Karavastës

- Legend / Legjenda
- Project Footprint / Gjurma Projektit
 - 2km Buffer / Zonë 2km
 - Drainage / Kullimi**
 - - - Drainage channel 1 / Kanal drenazhi 1
 - - - Drainage channel 2 / Kanal drenazhi 2
 - - - Drainage channel 3 / Kanal drenazhi 3
 - Irrigation / Vaditës**
 - Irrigate channel 1 / Kanal vaditës 1
 - Irrigate channel 1 / Kanal vaditës 1
 - Irrigate channel 1 / Kanal vaditës 1



Date / Datë: 2020/12/21
 Coord. Sys / Sis. Kord.: WGS 1984 UTMZone34N
 Projection / Projektioni: Transverse Mercator
 Datum / Datumi: WGS 1984
 Central Meridian / Meridiani Qendror: 21.0000
 Scale Factor / Faktori i shkallës: 0.9996
 Units / Njesia: Meters
 Original Size / Përmasa: A4

Scale / Shkalla 1:36,000

Designed by / Hartuar nga : F. Vladi
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Figure 14 : Irrigation system / network



Figure 15: Views of the second range drainage channels in the project area



Figure 16: Drainage Channel in the PV Area



Figure 17: Irrigation Channel in the PV Area

Karavasta Lagoon

The Karavasta lagoon is one of the youngest natural water bodies in the hydrographical network of Albania, formed recently as a result of the solid discharge accumulation of Seman and Shkumbin rivers. It is situated between the Shkumbin River and Terbufi Canal in the north, and the Canal of Myzeqe and Seman River in the south. The eastern part the complex is surrounded by Divjaka hills. Agricultural land borders the lagoon and it is separated from the sea by the Divjaka pine forest and Godulla lagoon.

The overall wetland complex, composed of lagoons, sand dunes and a river mouth, covers a surface area of 10,000 Ha. The Karavasta lagoon is the largest area (4,100 Ha) of this wetland complex, being 15.4 km long and 4.1 km wide. Its maximum depth is only 1.3 m, with an average depth of 0.7 m.

The coastal morphology of Karavasta lagoon has been highly dynamic during the last 135 years because of the changes which occurred to the Shkumbin and Seman river deltas (Mathers et al., 1999). The major events occurred when the Seman river changed its course moving northwards in the 1950s, then again southward in the late 1970s. The erosion of its abandoned delta progressively created a spit growing northward, which closed in a few years to form the small Godulla lagoon.

Karavasta is connected to the sea via three channels (Brew, 2003). The northern inlet is currently completely blocked and disconnected from the sea. The central and southern inlets connect with the Godulla lagoon, which in turn is connected to the sea by two other shallow channels. The creation of the drainage canals of Terbufi and Myzeqe in the 1980s, together with associated irrigation and drainage schemes, has isolated Karavasta from a significant part of its former drainage basin area. Early in its formation, which goes back to about 1860, the Karavasta lagoon covered double the area it now occupies.

4.1.2. Hydrogeology

Only alluvial type aquifer is present in the study area and its surroundings, which spreads on both sides of the lower Seman River course and has intergranular porosity and medium-low water permeability. The aquifer medium consists of gravel and sand, mainly of carbonate and less magmatic composition. This aquifer is distinguished for having good quality water except in the area Ndërmenas – Metaj where

the presence of poor-quality water has been noticed. Water quantity is scarce and can therefore only be used to supply drinking water to small villages.

The significant demographic growth during the last 30 years, especially in the low pre-Adriatic plain and coastal area, was accompanied by the very high increase in demand for drinking, agrarian and process water. The increase of pumping rates above the aquifer capacity caused stress to the hydraulic parameters of the aquifer, and groundwater quality deteriorations, etc. Oil exploitation and agricultural development have led to the pollution of the main rivers (Seman River) and, consequently, of the groundwater of the alluvial aquifer which has hydraulic connections with the river bed water.

4.1.3. Flooding

During the period 1962-1963, a plain area of 26,738 Ha was flooded on both sides of the River Seman and remained under the water for 35 days. According to UNDP, after 1962-1963, structural prevention measures and flood control measures (excluding dams) were undertaken locally to support prolongation of the period of flood occurrence flooding period of 50 years. These measures included the reconstruction of new embankments at the upper stream of the major rivers. Floods with 50 years return are predictable as proven during the 1970-1971 flooding when severe consequences were successfully prevented. Meanwhile in the Fieri Municipality no measures have been taken for a return flooding period of 100 years. The consequences of this flood type, as provided by the UNDP for the Municipality of Fier, will enhance the map of the flooding area. It is estimated that the floods would multiply in the event of simultaneous flooding from some ponds. Forecasts on the impact of floods in the country were carried out in 2003, but during the 17-year period the precipitation regime has changed. It is thought that the consequences of floods with a return of 50 or 100 years to be more pronounced. For this reason, in parallel with appropriate flood prevention measures, more up-to-date studies on flooding is required.

The tides have little influence on the Adriatic coast as their range in this area of the Mediterranean is less than 1.0 m. This is reflected in the type of water-borne landforms preserved along the coast, which are dominated by deltas, spits and beaches, formed predominantly by fluvial and wave processes.

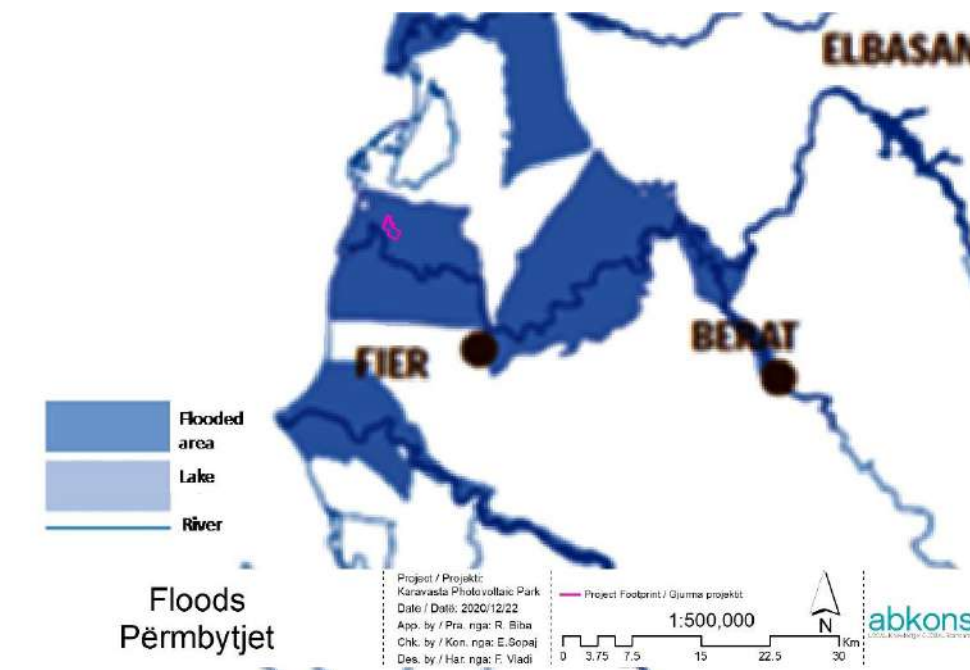


Figure 18: Western Low Flood Map with a 100-year return period (UNDP, 2003)

According to Pano (2013), the water flow distribution through the average year as monitored at the two hydrogrametric stations of Kuci and Mbrostar are presented in Table 12 below:

Table 12: The water flow distribution through the real average year¹⁵

Nr.	Hydrometric Station	Unit	Months											
			X	XI	XII	I	II	III	IV	V	VI	VII	VIII	XI
1	Osumi-Ura e Kucit	m ³ /s	38.0	97.1	11.6	145	154	155	135	119	49.9	18.2	10.5	19.2
2	Seman-Mbrostar	m ³ /s	41.2	99.7	117	143	161	161	143	116	52.2	19.9	11.7	22.0

Pano (2013) reported that the maximum water flow in Kuci Bridge was 2,870 m³/s and 2,580 m³/s corresponding to a flood return period of 100 year and 50 year, respectively.

According to Pano (2013), the annual distribution of solid discharge-R_o (in kg/s) and turbidity-po (gr/m³) is presented in Table 13 below.

Table 13: The annual distribution of solid discharge-R_o (in kg/s) and turbidity-po (gr/m³)¹⁶

Nr.	Hydrometric Station	Symbol	Unit	Months												Year
				X	XI	XII	I	II	III	IV	V	VI	VII	VIII	XI	
1	Semani Ura e Kucit)	R _o	kg/s	303	743	862	619	495	303	298	393	304	145	109	198	398
39 82		ρ _o	gr/m ³	797 0	736 0	707 0	410 0	311 0	181 0	197 0	339 0	609 0	797 0	104 00	103 00	433 0

Flooding Risk including events related to possible sea level rise

Sea level change was analysed by Pirazzoli (1986) and showed that there is an increase of the Adriatic Sea level that ranges from less than 1 mm/year to over 2 mm/year, but it also indicates an increasing trend due to climate change. For the period 1961 – 2003, the data show an average increase from 1.3 to 2.3 mm/year, while during the period 1993 - 2003 there was an average increase from 2.4 to 3.8 mm/year. At the World Climate Change Summit (ICCP 2007) it was reported that during 1980 -1999 and 2000 – 2099, the average sea level rise will range between 0.18 m - 0.59 m due to melting glaciers.

The rise of the sea level, causes changes of the coastline position and will have a very big impact on the lowlands near the sea and the deltas of the rivers. Measurements carried out at several stations in the Adriatic Sea during the period 1993-2014, show that the maximum (7.13 + -1.67 mm/year) value of sea-level rising of the Adriatic Sea is measured at Ravenna station (Italy), while the minimum (2.48 + -1.53 mm/year) value is measured at Zadar in Croatia.

Field observations at the Project site distinguished two areas that can be referred to as sea water affection: a) salty soils extending within the Project area south-westward up to the coast and b) cultivated soils surrounding the salty area along the north, east and south sides. The salty soil area is easily distinguished not only by the characteristic vegetation but also by the presence of thin white salt screens on the soil surface after evaporation.

¹⁵ (August 1981, July 1989 and October 2001) and its inverted active fractures (received by: Aliaj Sh. etj. 2000, Frashëri A. etj. 2011, Pano N. etj. 2005; Përgatiti: Co-PLAN, 2016)

¹⁶ Idem



Figure 19: Flooding events

4.1.4. Topography, Geology and soil

The main morphological elements developed in the Divjaka – Karavasta region are represented by a large plain area, the small hills of Divjaka located about 8.5 km northeast of Project site, and the coastal lagoon of Karavasta which lies to the northwest, the Seman and Shkumbin deltas to the southwest and northwest, respectively, and the sand dunes and sandy beaches to the west.

The most important morphological features are related to the deltaic coastal Karavasta area to the northwest of the Project site, which are the result of the action of the wind and wave regime, sea currents, sediment discharges, etc. Intensive winds, up to maximal speed of 40 – 45 m/s, particularly of NW, W and SW direction are observed in the coastal area.

Periods with the wave height of $H = 0.1-0.2$ m represents around 80% of the general cases, with the remaining 20% with height $H = 0.2-4.5$ m. The dynamics of solid material deposition along the coastal zone and the accumulation intensity of sand are closely tied up with the waving process and particularly with the effects of maximum waves.

This coastline corresponds to an extensive deltaic coast (microtidale: 0.50 tidal range) with a large alluvial plain of Myzeqe, many coastal lagoons (including the Karavasta Lagoon), temporary marches, deltas, offshore bards, sand dunes and sandy beaches (Simeoni U. et al, 1997).

The dunes along the coastline of the Seman beach (southwest of the Project site) are a typical element of the coastal morphology. According to NEA report (2015), they extend for about 1 km, have a width of 15 m and a height of 6 m. Climatic changes and human activity has significantly influenced their position and dimensions. From Povelca (northwest) to the beginning of Seman beach (southwest), the dunes are fragmented with a height not more than 1.5 m. The highest (6.0 m) height is evidenced only at the end of the Seman section beach.



Figure 20: The highest segment (over 4 m) of the Dunes along the coastal line of the Fier Municipality. Co-PLAN, 2016

According to Albanian Geological Survey data, reported by the NEA (2014), the coastal area of Divjaka-Karavasta has two distinguished geomorphological zones, showing domination of erosion or deposition processes:

- the northern and southern segments of Divjaka beach and abandoned river Seman mouths, where erosion dominates;
- the central part of Divjaka beach and zones adjacent to current mouth of river Seman, where deposition prevails.

South of current Seman delta extends the Seman beach which represents a sector that subsides due to the differentiated tectonic movements that are still active. The subsidence of Seman beach zone is evidenced by the fact that several objects that 35-40 years ago were inland now are under the sea water. The most apparent example is the platform of the deep oil well "Seman 3", drilled in 1969 some 265 m inland and now is under seawater. Based on the above facts, the inland advancing rate of sea water was estimated to be 9.4 m/year and 8.1 m/year during the periods 1969-1983 and 1983-2004, respectively.

The studies have shown that the coastal sedimentary environments around Karavasta Lagoon are extremely dynamic and dominated by large amounts of sediment delivered by the Shkumbini and Seman rivers.

The long-term evolution of the coast has been accretionary, built seaward by wave-dominated deltas, forming a wide lowland plain above sea level, composed of stacked beach ridges.

Over the last 150 years (short-term) the mouth of Seman River has often changed its position. In 1870 (Boci, 1994), the main river mouth and delta was about 20 km to the south of Karavasta lagoon. Between the end of the nineteenth century and 1950s the sediment input to the delta decreased and the delta complex moved north. Around 1962-63 its mouth moved again 15 km further south. The changing position of the river system is still creating serious erosional problems for the coast in this area, because the abandoned delta is eroded and material of erosion is transported north. It is envisaged (Brew, 2003) that the end product of this erosion may be the loss of the lagunal areas through the removal of the spits and barrier beaches that currently separate them from the sea.

According to Boci (1994), the position of the Shkumbini Delta in 1870 was in the same area as the present delta. Maps published in 1918 show that the main river course was split into two channels that existed until 1968. The northern channel was probably carrying more sediment than the southern channel because the coastline on the 1968 map shows accretion to the north. After 1968, the coastline adjacent to northern channel started to erode while the southern channel continued to produce shoreline accretion. Between 1943 and 1986, the Shkumbini Delta has become more rounded at its mouth as a result of wave action and attendant southerly longshore transport.

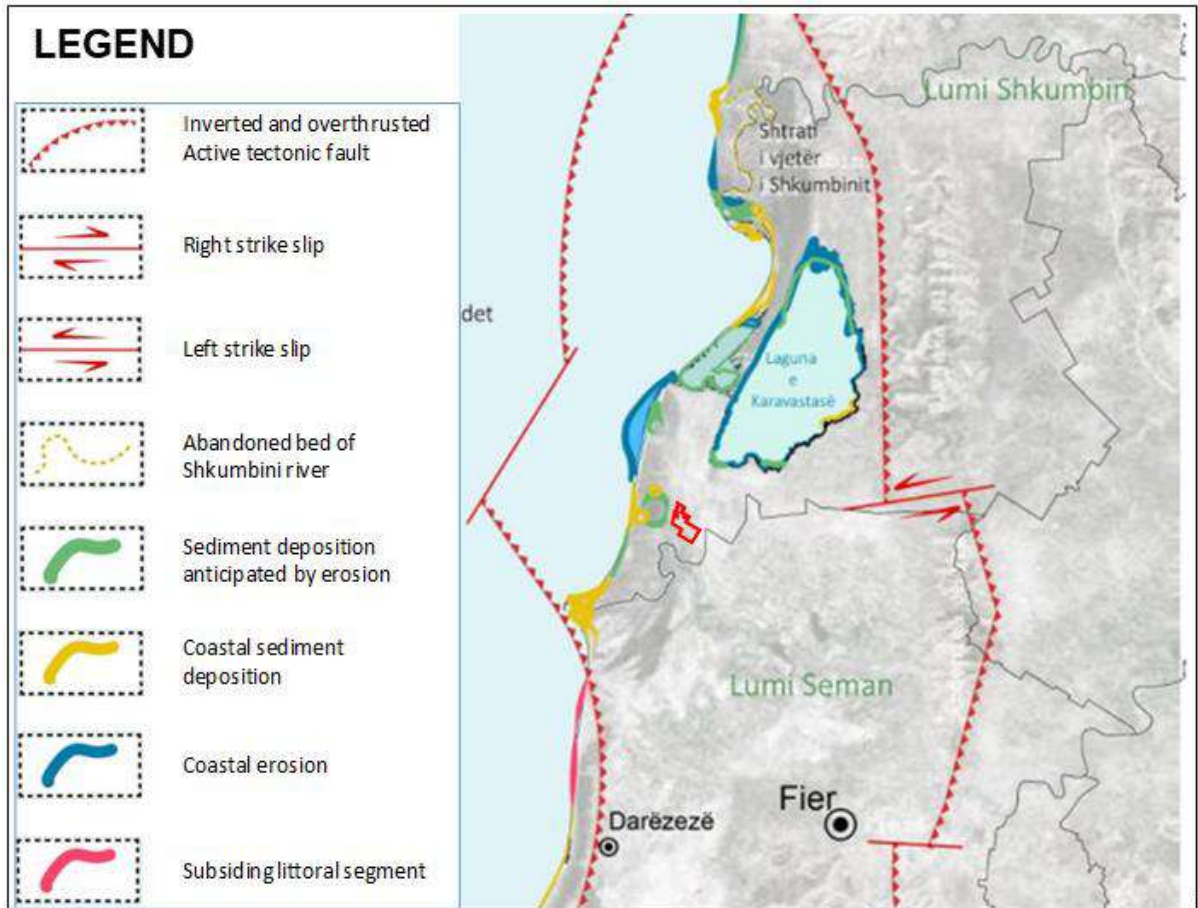


Figure 21: Satellite view of the geomorphological evolution of the coast from the estuary the Vjosa River to the mouth of the Shkumbin River in the Albanian littoral, for the period of summer17

The geomorphology of the Project area is generally very flat showing a very smooth westward inclination, with the site elevation ranging from -1 m to +1 m above sea level (see Figure 22). In the frame of this plain relief, there is a slight difference in quotas between the project zone and eastern-south-eastern cultivated soils, the latter being about 0.5 -1.0 m higher. This difference is reflected in the salt content of the soil which is higher in the Project area, as shown by the white coloured surface soils.

¹⁷ (August 1981, July 1989 and October 2001) and its inverted active fractures (received by: Aliaj Sh. etj. 2000, Frashëri A. etj. 2011, Pano N. etj. 2005; Përgatiti: Co-PLAN, 2016)

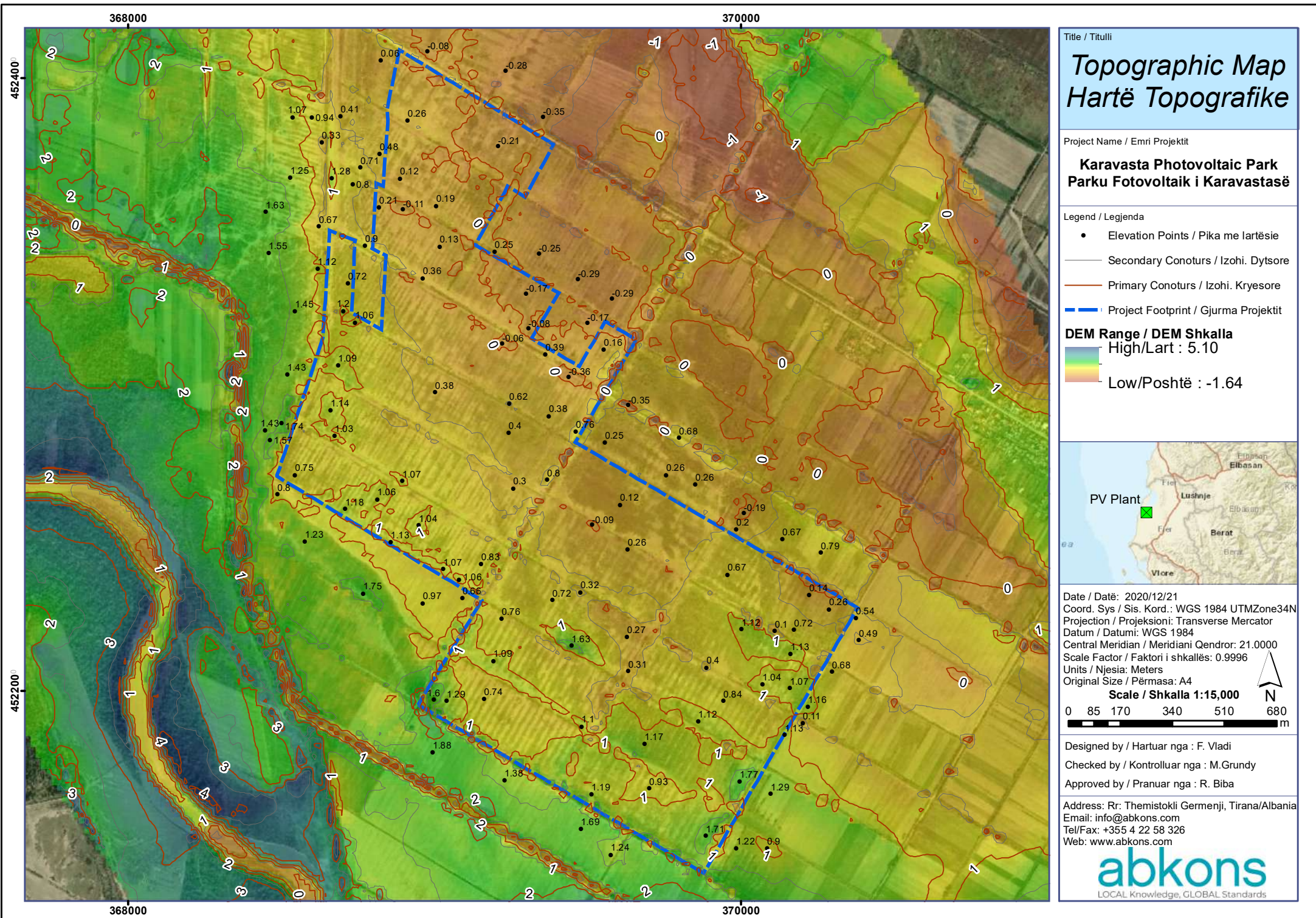


Figure 22: Topographic Map



Figure 23: Views of the white coloured salty soils

4.1.4.1. Geographical position and geographical features of the area

Geographically the Project site is part of the Myzeqe e Madhe (agricultural fields), which lie on the shores of the Adriatic Sea, in the central part of the Western Lowland; it is bordered to the north by Shkumbin River, to the south by Seman River, to the east by the hills of Divjaka and to the west by the Adriatic Sea. This geographical position is evaluated for facilitation of services and activities of the human community living in the municipality and its villages.

This area is part of the ionic tectonic zone, near the Adriatic Lowland, in the Mediterranean central climate zone, in the belt of brown and grey soils and on the belt of the Mediterranean forest and shrubs. Neotectonic Map of Albania, on the book of “Physical Geography of Albania”, Pumo et al, (1990, p. 72), shows an inclined sinking region during neotectonic period and consists of terrigenous sediments: the Miocene and Pliocene molasses. The plain landform is prevailing and in the eastern area the hilly backbone of Divjaka hills emerges, with a maximum height of 192 m (Stone of Gomares). The area also has coastal dunes, beaches, deltas and lagoons. Within the plain landform area agricultural activities are favoured for the production of field plants, especially vegetables, whilst the hilly areas are used for the cultivation of fruit trees and vineyards.

4.1.4.2. Soils

Gjoka (2012) emphasizes that: “Divjakë-Karavasta National Park soils comprises of different types, such as grey brown soils (according to the national classification); saline soils (around the Karavasta lagoon), alluvial soils (flooded by river deltas of Shkumbin and Seman), uncultured sandy soils and sandy old dunes soils.” According to Borici J. and Harasani P. (2000), soils in Remas area, in the southern part of the Karavasta lagoon, there is a high concentration of soluble salts, wherein the chlorine content is at high levels that inhibit the cultivation of plants. Hydrophyte saline landscape of previous years has been restored. Pedological map of Albania, Pumo et al, (1990, p. 272), shows that grey brown soils are present in this park (Divjaka hilly area) and some other subtypes, such as alluvial and saline ones.

4.2. Biological Environment

The proposed Photovoltaic project is located in an area with salty soil and with poor vegetation. The OHL route runs initially through the same category of land, crossing the Fieri Region. The Project site is located on flat land at an elevation ranging from -1 m to +1 m above sea level, with a slope across the whole area varying by 0.5 to 1.0%. Soil drainage is damaged due to non-functioning of the drainage channel system.

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.

The first phase of biodiversity baseline surveys has already been undertaken in early August 2020 so that summer 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

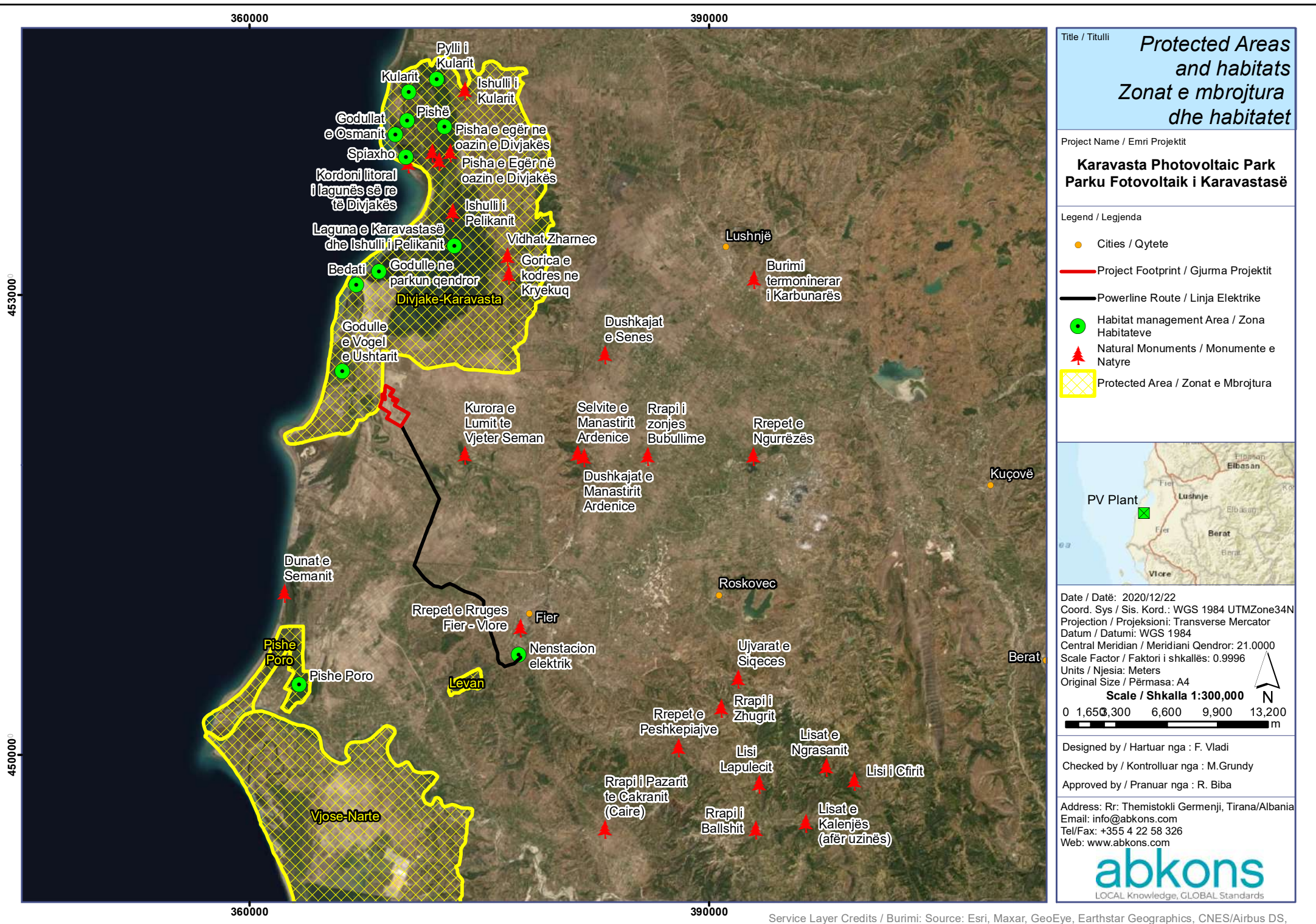
Divjakë- Karavasta National Park is located on the western border of Project site and is considered one of the most important National Park in Albania. Divjakë-Karavasta National Park is part of the Natural National Heritage and the wetland system of Divjaka and is listed in the international list of Ramsar sites under the Convention of International Wetlands. The Divjaka National Park / Parku Kombetar i Divjakes complex has been officially nominated candidate Emerald Network sites, with the code AL0000002¹⁸ and as such will be included in the Natura 2000 network as an area of European importance for biodiversity.

The National Park has great value and unique scientific, ecological, didactic, cultural, touristic and economic value. Preservation of biodiversity and natural landscape remains a primary goal in the management of this park.

In 2003 in the Divjakë – Karavasta area the following protected areas were present: Strict Protected Reserve of Karavasta Lagoon, Pine of Divjaka National Park, Kulari Management Zone. In the DCM No. 687, dated 19.10.2007, only one protected area of the second category was determined, namely the National Park Divjakë - Karavasta. According to this decision (DCM No. 687, dated 19.10.2007) the park area is 22,230.2 Ha and is divided into:

- Forest area (forests, rare forests, alluvial forests and shrubs, reforestation, forest and aquatic vegetation land) 5,310.00 Ha;
- Agricultural area (agricultural land, orchards, olive groves and vineyards) 9,078.42 Ha;
- Aquatic area (lagoons, rivers and watersheds) 6,408.90 Ha;
- Non-productive area (sandy and bare) 1,120.71 Ha;
- Urban area of mixed farmland, orchards and woodland 312.21 Ha.

¹⁸ <https://rm.coe.int/updated-list-of-officially-nominated-candidate-emerald-sites-2020/1680a080d4>



Title / Titulli
**Protected Areas and habitats
Zonat e mbrojtura dhe habitatet**

Project Name / Emri Projektit
**Karavasta Photovoltaic Park
Parku Fotovoltaik i Karavastës**

- Legend / Legjenda
- Cities / Qytete
 - Project Footprint / Gjurma Projektit
 - Powerline Route / Linja Elektrike
 - Habitat management Area / Zona Habitaveve
 - ▲ Natural Monuments / Monumente e Natyre
 - Protected Area / Zonat e Mbrojtura



Date / Datë: 2020/12/22
 Coord. Sys / Sis. Kord.: WGS 1984 UTMZone34N
 Projection / Projektioni: Transverse Mercator
 Datum / Datumi: WGS 1984
 Central Meridian / Meridiani Qendror: 21.0000
 Scale Factor / Faktori i shkallës: 0.9996
 Units / Njesia: Meters
 Original Size / Përmasa: A4
Scale / Shkalla 1:300,000
 0 1,650 3,300 6,600 9,900 13,200 m

Designed by / Hartuar nga : F. Vladi
 Checked by / Kontrolluar nga : M. Grundy
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Figure 24: Protected area map

4.2.2. Habitats

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

- Mediterranean Salt Meadow / Marsh;
- Stream/River Habitat (Running Water) / White Willow & White Poplar galleries, Large running Channels & Seman River;
- Drainage channels/reedbeds;
- Coastal lagoons;
- Coastal Coniferous Forest;
- Semi-natural dry grasslands and scrubland;
- Natural and semi natural grasslands;
- Mediterranean shrubs;
- Mixed created agricultural land;
- Olive grove.

Of the above the most significant potential sensitive areas are the Stream/River (running water which includes large irrigation canals) 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.

Although it was noted that due to abandonment of the land in the project area no active irrigation channels were observed within the Project boundary, although a few small pools were present, most of the channels were dry.

4.2.3. Flora

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

The PV Project site area comprises mostly of salty soils that were cultivated years ago, but which are now abandoned and overgrazed. The vegetation is drastically damaged by the intensive human intervention, especially due to over-grazing. The low number of Phanerophytes and high number of Hemycryptophytes indicate high level of degradation of the vegetation because these unsustainable practices (agriculture and grazing) and limited ecological condition for tree growth.

Salt marshes can provide many habitats for species uniquely adapted to changes in salinity and water levels, and are important storehouses of biodiversity and extremely productive habitats. The botanical and ecological value of this type of habitat is generally high; however, in this case the habitat cannot properly fulfil these functions as it is very damaged due to unsustainable practices from previous agriculture practices and present intensive grazing.

The Seman River and its associated aquatic habitats, freshwater marshes and riparian forests, which support a high floral biodiversity, are important habitats within the study area. These species-rich habitats add much to the botanical diversity of the study area. The river and stream vegetation and habitats are, by nature, much more limited in extension than most of the vegetation types. Consequently, river and stream habitats are considered high value environments.

The natural vegetation of the Divjaka plain is the typical Mediterranean shrubs. Although, the pride of the flora of the Divjaka plain is the pine forest that stretches parallel to the coast for 11 km and with an area of 1250 ha. This forest is unique throughout Albania and beyond in terms of mass and plant diversity.

Below is a summary of the key observations made during the site survey undertaken in August 2020.

- No IUCN Red List species under the Ex, EW, CR, EN, VU, NT categories were found.

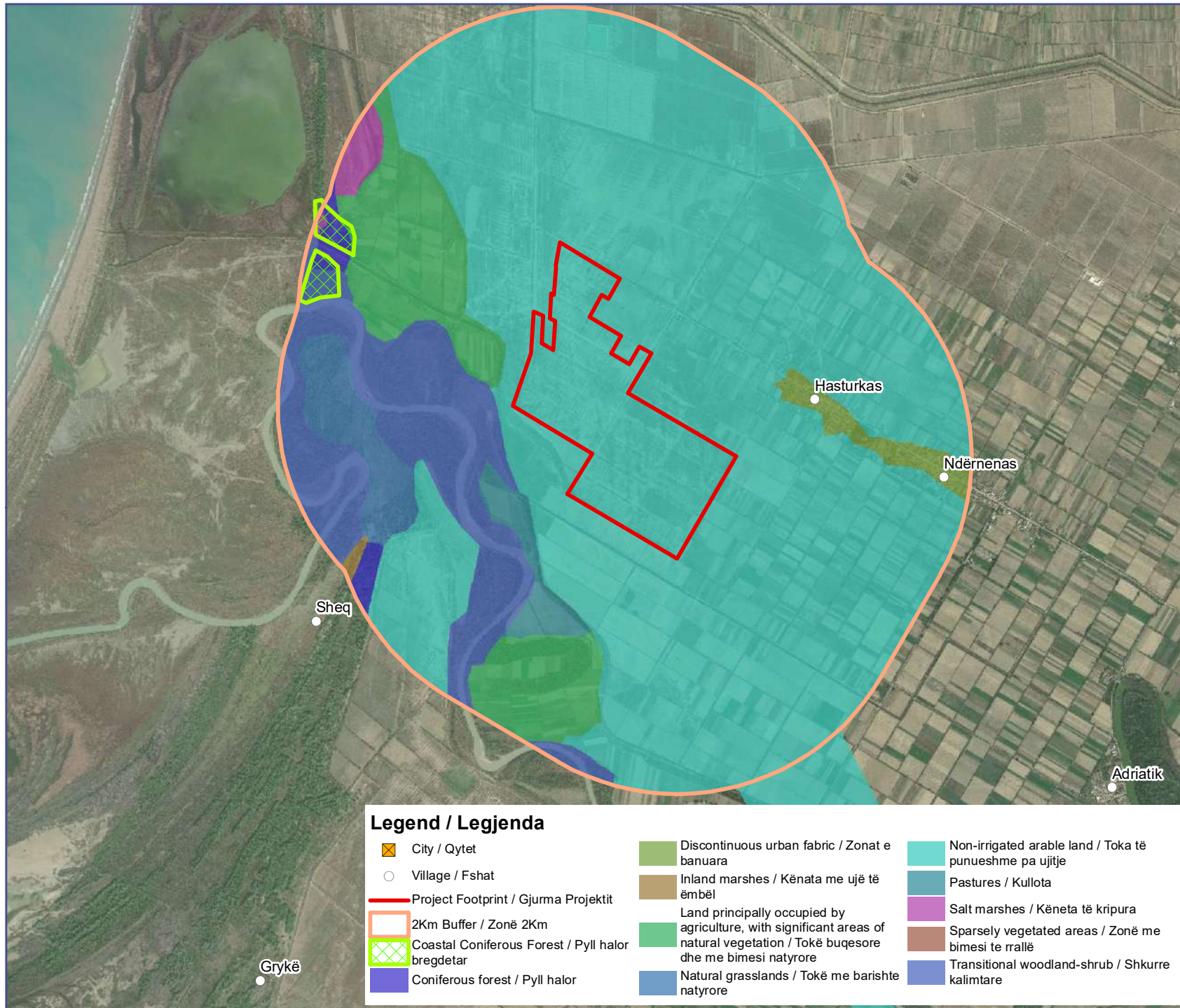
- From a preliminary analysis of the database within the project area of influence 85 species under LC Category and one under DD category were identified, from which 3 are globally threatened, 16 at the European level and 3 of the Mediterranean level. With regards to their trend: 62 are stable, 17 are unknown, 3 are increasing and 1 is decreasing.
- Only one potentially endemic plant species (*Aster albanicus*) may be present within the Mediterranean coniferous area; however, its presence could not be determined at this time of year.
- More than 10 invasive species were identified in the Project area; these species indicate a high human impact (unsustainable agricultural practices especially from grazing).
- Flora of the PV Project area is represented mostly by halophyllous plants (salt tolerant) such as: sea rush (*Juncus maritimus*), Tamarix (*Tamarix dalmatica*), fleaworts (*Plantago crassifolia*), mugwort (*Artemisia coerulescens*), glasswort (*Salicornia europaea*), Common sea lavender (*Limonium vulgare*) and in the drainage channels by plants such as Common reed (*Phragmites australis*), Lesser bulrush (*Typha angustifolia*), Round-headed club-rush (*Scirpus lacustris*), Club-rush/bulrush (*Schoenoplectus lacustris*).



Figure 25: Views of flora within PV Project Site



Figure 26: Views along the Seman River



Title / Titulli
**Landcover Map
 Mbulesa e Tokës**

Project Name / Emri Projektit
**Karavasta Photovoltaic Park
 Parku Fotovoltaik i Karavastës**



Date / Datë: 2020/12/22
 Coord. Sys / Sis. Kord.: WGS 1984 UTMZone34N
 Projection / Projektioni: Transverse Mercator
 Datum / Datumi: WGS 1984
 Central Meridian / Meridiani Qendror: 21.0000
 Scale Factor / Faktori i shkallës: 0.9996
 Units / Njesia: Meters
 Original Size / Përmasa: A4
Scale / Shkalla 1:45,000
 0 255 510 1,020 1,530 2,040 m

Legend / Legjenda

City / Qytet	Discontinuous urban fabric / Zonat e banuara	Non-irrigated arable land / Toka të punueshme pa ujitje
Village / Fshat	Inland marshes / Kënata me ujë të ëmbël	Pastures / Kullota
Project Footprint / Gjurma Projektit	Land principally occupied by agriculture, with significant areas of natural vegetation / Tokë bujqesore dhe me bimesi natyrore	Salt marshes / Këneta të kripura
2Km Buffer / Zonë 2Km	Natural grasslands / Tokë me barishte natyrore	Sparsely vegetated areas / Zonë me bimesi të rrallë
Coastal Coniferous Forest / Pyll halor bregdetar	Coniferous forest / Pyll halor	Transitional woodland-shrub / Shkurre kalimtare

Designed by / Hartuar nga : F. Vladi
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 LOCAL Knowledge, GLOBAL Standards

Source/ Burimi: Corine Landcover 2018

Figure 27: Land cover Map

4.2.4. Fauna

After the conducting the first field survey for bats, other mammals, amphibians and reptiles in the project footprints (PV Project Development Area (PDA) and along the 110 kV and 220 kV OHL routes), the followings are some of preliminary findings:

- There are no important roosting sites for Bats in the PDA, however one or two bunkers show evidence of being used as roosting by a limited number of bats during night. Bats recording during night show that PDA is used as foraging area for docents of individuals of bats belonging to Pipistrelle species.
- PDA area and most of OHL corridor are part of the foraging area for European badger (*Meles meles*) and golden Jackal (*Canis aureus*), both red-listed in the National Red list of Albania (2013).
- One or two temporary ponds artificially created by sand extractions in the proximity of PDA are potential breeding sites during spring and early summer for toads and frogs
- Drainage channels in the PDA area and those intersected by the Transmission Lines are important and sensitive habitats for aquatic life, including frogs, toads and terrapin as they provide freshwater breeding and feeding grounds for a number of species, including otter. However, their significance should be confirmed by additional field surveys next spring (2021).
- The old riverbed of Seman river, with the good and well-preserved riparian vegetation dominated by *Populus alba* and *Salix alba* intersected by proposed 220 kV OHL route is serving as a small refuge for species of conservation interest, such as badger, jackal, dormouse, frogs, toads and terrapin.
- Hilly areas intersected by OHL, although in majority are converted into terraced olive groves, orchards and vineyards, are still hosting small patches of former natural vegetation (woodland) that provide shelter for some species of conservation interest, such as European Badger (*Meles meles*), Hazel Dormouse (*Muscardinus avellanarius*), Edible Dormouse (*Glis glis*), Aesculapian snake (*Zamenis longissimus*).
- Military bunkers in the hilly area close to Peshtan, intersected by the 110 kV OHL show evidence of being important roosting sites for bats and tortoise. In one the series of bunkers from the amount of guanos found on the ground, inside of the deepest part of the bunker, it is believed that the site is commonly used by bats, and potentially as nursery roost for bats during breeding season (April-June). However, additional surveys should be organized next year to confirm and verify this. The use of these roosts during swarming season (autumn) will be checked during field survey in September 2020.



Figure 28: Bunker, checked for presence of bats



Figure 29: Bunker along drainage channel



Figure 30: European pond Turtle (*Emys orbicularis*)



Figure 31: View over the biotope next to the bridge where frogs and terrapin were recorded



Figure 32: Drainage channels on eastern edge of PV Project Site

4.2.1. Avifauna (birds)

Breeding birds in the project area

The project area offers more or less two type 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.

Colonially nesting species, such as Collared Pratincoles, were not registered breeding in the area although specimen of this species was frequently observed using the area as a foraging ground.

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 survey for breeding birds was conducted late in the breeding season (early August 2020) and it is very likely that the assessment of the avifauna of the area might have missed evidences on early breeding birds. Therefore, before reaching any final conclusions regarding the avifauna, it is strongly

recommended to conduct bird surveys in the project area and along the transmission lines in appropriate time, most probably in June 2021.

Among the bird species present in the project area there were several of them that might be considered important such as the Collared Pratincole (*Glareola pratincole*) Vulnerable at national level and part of Annex I Bird Directive, the Globally Vulnerable Turtle Dove (*Streptopelia turtur*), Short-toed Lark (*Calandrella brachydactyla*), Tawny Pipit (*Anthus campestris*), Lesser Grey Shrike (*Lanius minor*), Common Tern (*Sterna hirundo*) and Little Tern all species of Annex I of Birds Directive.

OHL Transmission Routes

The habitats observed along the OHL routes were mostly covered by arable land, orchards and urban landscape. It is therefore expected that the impact of OHL project activities should be minimal on bird species. Nevertheless, attention will be paid to the presence of breeding colonies of European Bee-eaters located in sandstones, breeding birds in aquatic habitats and nesting birds in riparian forests of Seman. The Nature Monument of “Kurora e Semant” is a typical riparian habitat and important for breeding birds including the Globally Vulnerable Turtle Dove (*Streptopelia turtur*).

Birds in the wider area

In the wider area the most important site is the Divjaka-Karavasta National Park. Besides the national designations, Divjaka-Karavasta is also a Ramsar Site, an Important Bird and Biodiversity Area, a Candidate Emerald Site and a Natura 2000 Pilot site, and is best known for birds. It shelters circa 260 species of birds, 40,000 wintering waterbirds and circa 12,000 breeding pairs of birds. It also a major hub for migratory birds and particularly waterbirds with millions of them following the migratory route of the Adriatic Flyway.

In addition to Divjaka-Karavasta National Park the lagoon of “Godulla e Ushtarit” is located just over 2 km to the west of the PV Project site. This is one of the few wetland bodies with large influence of fresh water and therefore a major station for wintering and breeding waterbirds. Midwinter bird counts in this area register regularly 5,000-10,000 waterbirds with the peak number reaching also 20,000 waterbirds.

Besides the above, the project area of influence covers also an open ground of halophytic vegetation that is important for ground nesting birds. The breeding bird survey located a colony of circa 70-80 breeding pairs of Collared Pratincoles (*Glareola pratincole*) around 700-800 m to the north of the PV Project area. This could be a significant colony of this species in Albania and it will be carefully considered when assessing project activities potential impact.

Project area and migratory birds

Divjaka-Karavasta National Park borders the PV Project site to the north and north-west, and some 20-30 km to the south lies the Nature Managed Reserve of Pisha-Poro and the Landscape Protected Area of Vjose-Narta.

Divjaka-Karavasta and Vjose-Narta are both Important Bird Areas due to the large number of waterbirds visiting then in breeding season, wintering season and migratory season. Although breeding birds tend to be rather sedentary, wintering and migrating birds, particularly large flying birds such as Pelicans, Flamingoes, Birds of Prey, Herons, Cormorant, Ducks, Waders, Gulls, and Terns tend to use the corridor Divjaka-Karavasta-Vjosa-Narta quite frequently and in considerable numbers. This is more evident during the migratory season when large flocks of waterbirds use those wetland sites as stationary points along the Adriatic Flyway.

Considering the above, it is important to undertake winter and spring surveys in the project area and project area of influence in order to evaluate their relative importance for migratory birds.



Figure 33: Abandoned arable land covered by halophytic vegetation, close to drainage channels



Figure 34: Drainage channel and brackish lagoon of Godulla e Ushtarit



Figure 35: Abandoned arable land covered by halophytic vegetation - Collared Pratincole



Figure 36: Abandoned arable land covered by halophytic vegetation – Eurasian Sparrowhawk

4.2.2. Aquatic Ecology

The transitional water bodies, including drainage channels of the project site, are important ecosystems for the numerous aquatic species including fish. The key findings of the field survey conducted in early August 2020 are presented below::

- The identified habitats related to aquatic ecosystems in the wider study area include: (i) Reed beds; (ii) White willow and White poplar galleries (running water such as streams and rivers) and (iii) Coastal lagoons.
- The PV project area is dominated by drainage and irrigation channels. The formation of reed beds is more widespread in these channels. These are frequently accompanied by submersed species such as pondweed.
- The macro-invertebrate diversity is reflective of the communication patterns of the drainage and irrigation channels and therefore maintaining hydrological communication is important for the complex ecosystems of the wider area.

- Fish and other species assemblages vary in these systems depending on factors, such as water chemical-physical factors (temperature, dissolved oxygen and salinity) or parameters related to habitat structure like depth, substrate type and submerged vegetation.
- During the survey 23 aquatic plant species were recorded (both submersed and emergent), 16 macro-invertebrate species connected mostly with benthic environments, and 18 fish species, of which two species of conservation concern - the Mediterranean kill-fish (*Aphanus fasciatus*) considered as Critically Endangered (CR) according to Albanian Red List of 2013 and European eel (*Anguilla anguilla*) considered as Endangered (EN) according to IUCN; note these 2 IUCN species were not found within the project site area but rather in the wider Aol.
- After habitat degradation, invasive species are the second leading cause of biodiversity loss, particularly in freshwater ecosystems. The mosquito fish was observed within the project site and in the wider Aol; based on its current dominant presence in the area, it is clear that the degradation and lack of water management has led to a serious situation as this species is considered to pose a serious threat to native fishes in many countries.
- The current population of European eel is unknown. The local status is currently facing two major impacts, the first is habitat degradation due to different human activities and second one is the lack of water management and affected hydrological connectivity.
- The Flathead grey mullet is the major commercially exploited fish species in the area, and beside species plasticity its status at the local scale is affected by the habitat degradation and human activities.
- The small coastal lagoon of Laguna e Ushtarit (2 km to the west of the site) is an important part of Karavaste-Dijvake National Park (NP), with capacity of hosting large number of birds during winter time. Numerous fish species characteristic of the lagoon ecosystem, such as flat head mullet, thin-lip mullets, gilt-head bream, and Mediterranean sand smelt, Mediterranean killfish etc., are present there.



Figure 37: Drainage Channels with PR Project Site (1)



Figure 38: Drainage Channels with PR Project Site (2)



Figure 39: Seman River



Figure 40: Flatheaded Grey Mullet

4.3. Socio-Economic Baseline

4.3.1. Administrative Structure

The counties of Albania are the first-level administrative territorial entities of the Republic of Albania. Albania is divided into 12 counties, which are subdivided into 61 municipalities, the second-level administrative territorial entities.

Each municipality consists of administrative units. Albania is divided into 61 municipalities, which include 373 administrative units, 73 towns or cities and 2,998 villages.

Table 14: Administrative Structure of Albanian Counties with Municipalities and Population¹⁹

County	Municipalities	Area	Population
Berat	Berat, Kuçovë, Poliçan, Skrapar, Ura Vajguore	1,798 km ²	122,003
Dibër	Bulqizë, Dibër, Klos, Mat	2,586km 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, Rogozhinë, Tirana, Vorë	1,652 km ²	906,166

¹⁹ INSTAT, National Institute of Statistics, as of 27th of August 2020.

County	Municipalities	Area	Population
Vlorë	Delvinë, Finiq, Himarë, Konispol, Sarandë, Selenicë, Vlorë	2,706 km ²	188,922

4.3.1.1. Counties

Counties are the first level of local governance and are administered by the prefect and a county council. The prefect is appointed as a representative of the Council of Ministers. The county council consists of the head of the Municipalities and by counsellors. The County of Fier is composed of 6 Municipalities, 36 Administrative Units and 276 villages.

Fier County is a county located in south-western Albania. The Fier County borders the Tirana County to the north, Elbasan County to the northeast, Berat County to the east, Gjirokastër County to the southeast, Vlorë County to the south and the Adriatic Sea in the west. Fier County is large at around 1,890 km². Since the 2015 local government reform, the county consists of the following 6 municipalities: Divjakë, Fier, Lushnjë, Mallakastër, Patos and Roskovec. Fier is one the most important industrial cities of Albania and is built by the Gjanica tributary of the Seman river, and is surrounded by marshland. With nearby Patos town, it is the centre of the oil, bitumen and chemical industries in Albania.



Figure 41: Fier County position in Albania

4.3.1.2. Municipalities

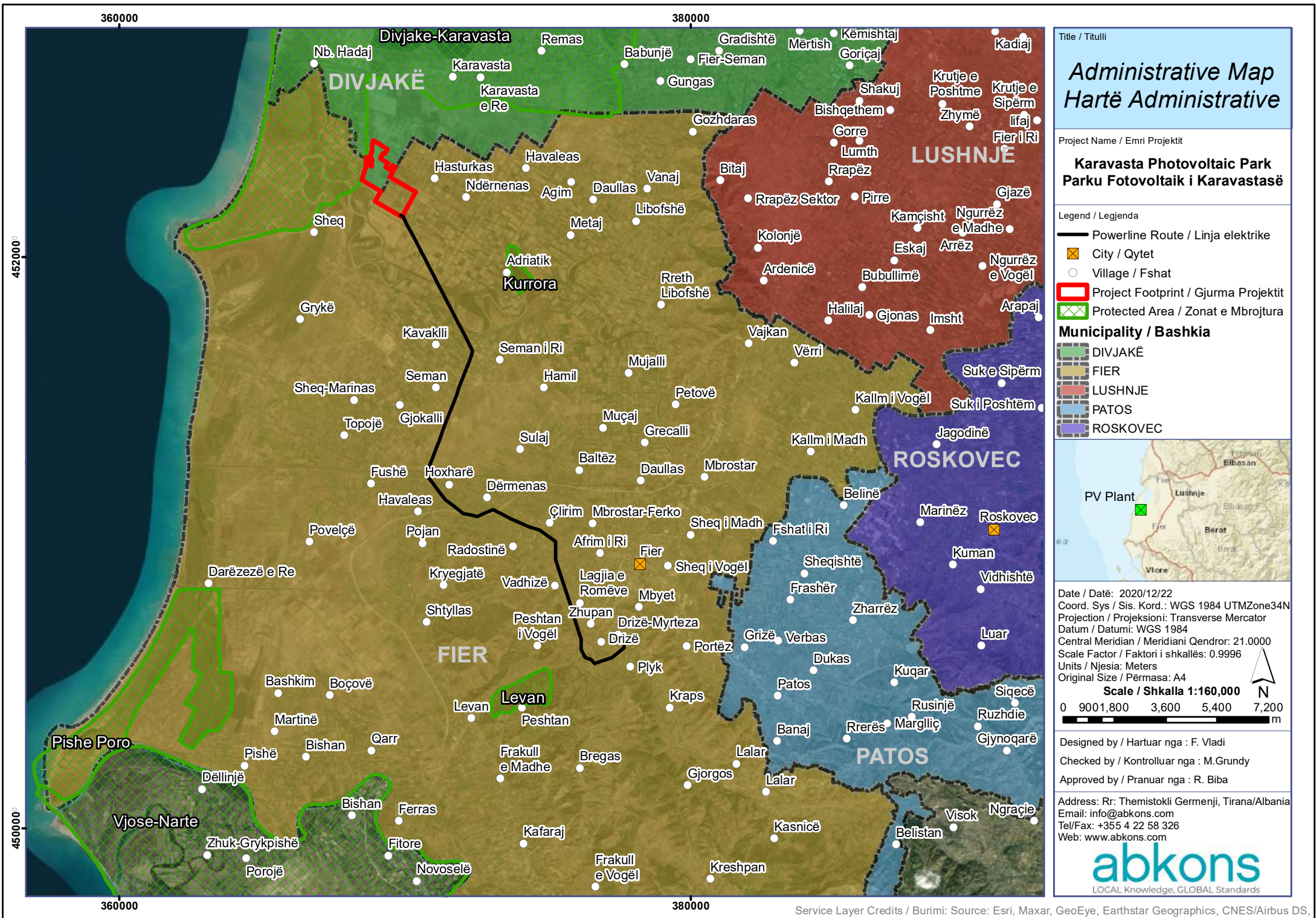
As mentioned above, there are 61 municipalities in Albania. The Municipalities are governed by an elected Mayor. The Municipality of Fier is one of the biggest and most important Local Government Institutions in Albania, located in a favourable geographical position, with a rich historical heritage. The Municipality of Divjakë is one of the newly formed municipalities in Albania after the administrative reform of 2015 by the merger of the former communes of Divjakë, Grabian, Gradishtë, Remas and Tërbuf, that became municipal units.

4.3.1.3. Administrative Units and Villages

The Administrative units are composed of one or more city, town or villages within the Municipality territory and are governed by an appointed administrator, and constitute the third and final administrative level of Albania. There are 9 Administrative Units in the Municipality of Fier, while there are 5 AU in the Municipality of Divjakë.

4.3.1.4. Head of Villages

Each village is represented by a village head who is subordinate to the Mayor. Traditionally the village heads were elected by elders and solved disputes between residents and counselled the villagers on different matters, however nowadays their role is more as a villagers' representative in administrative matters.



Title / Titulli
Administrative Map
Hartë Administrative

Project Name / Emri Projektit
Karavasta Photovoltaic Park
Parku Fotovoltaik i Karavastës

- Legend / Legjenda
- Powerline Route / Linja elektrike
 - City / Qytet
 - Village / Fshat
 - Project Footprint / Gjurma Projektit
 - Protected Area / Zonat e Mbrojtura

- Municipality / Bashkia
- DIVJAKË
 - FIER
 - LUSHNJË
 - PATOS
 - ROSKOVEC



Date / Datë: 2020/12/22
 Coord. Sys / Sis. Kord.: WGS 1984 UTMZone34N
 Projection / Projektioni: Transverse Mercator
 Datum / Datum: WGS 1984
 Central Meridian / Meridiani Qendror: 21.0000
 Scale Factor / Faktori i shkallës: 0.9996
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Figure 42: Administrative Map of the Aol

4.3.2. 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.

The Project is situated in the proximity of the villages of Hasturkas and Ndërnenas in the Administrative Unit (AU) of Libofshë, in the Municipality of Fier and in the proximity of the Remas AU in the Municipality of Divjakë.

The population of the AU of Libofshë was 6,437 according to the Census of 2011, while that of the AU of Remas was 4,449 according to the same Census. In 2015 the same population was 6,242 people and the prediction for the year 2021 is of 5,810 people.

This is due mostly for migration of people from rural areas to cities for better job opportunities or immigration to other countries. Albania in general has seen a large rate of immigration of its population through the years, starting from the fall of the communist regime in 1991. This trend also seems to be occurring in the area of the Project, considering the reduction of the population and the predictions for the future. Due to the fact that the municipality of Divjakë was formed in 2015 out of former municipalities, there is no data on prediction of the population growth, except of the official data of the 2011 National Census.

Table 15: Population Growth and Prediction²⁰

Year	2011	2015	2021	2026	2031
AU of Libofshë	6.437	6.242	5.810	5.530	5.263
AU of Remas*	4.449	N.A	N.A	N.A	N.A

*The Municipal Development Plan of Divjakë has no data on population growth

The gender proportion in the project area is balanced between men and women, with a slight increase in the proportion of men, from the 2011 National Census to the Municipal projection of 2015.

Table 16: Population of AU of Libofshë and Rremas disaggregated by gender²¹

AU of Libofshë	2011			2015		
	Total Population	Men	Women	Total Population	Men	Women
AU Libofshe	6,437	3,201	3,236	6,242	3,134	3,107
Au of Remas*	4.449	2.344	2.105	N.A	N.A	N.A

*The Municipal Development Plan of Divjakë has no data on gender disaggregation, except the 2011 National Census

²⁰ Municipal Development Plan 2017-2025, December 2016

²¹ Idem...

4.3.3. Language, Ethnicity and Religion

Constitutionally, Albania has been a secular country since 1967. According to the 2011 census²² 58.79% of Albanians declared themselves to be Muslims, making Islam the largest religion in the country. The majority of Albanian Muslims are secular Sunnis with a significant Bektashi Shia minority. Christians represent 16.99% of the population, making Christianity the 2nd largest religion in the country. The remaining portion of the population is either atheist or belongs to other religious groups.

The religious affiliation of the resident population of the Fier district intersected by the project reflects the Country's overall ratio of declared religion, where there is a larger affiliation towards Islam (49.53 %) compared to Christianity (15.91 %) ²³.

Albania is mostly inhabited by ethnic Albanians (82.58%). The country is composed of six national minorities including Aromanians (Minority from Romania), Balkan Egyptians, Greeks, Macedonians, Montenegrins and Roma. The larger minority are Greeks, representing 0.87% of the total population, which is mainly located in the south of the country.

According to the 2011 Census Fier District is inhabited mostly by Albanians (77.71 %) followed by Roma (0.53 %), Aromanian (0.50 %), Greek (0.11 %), Egyptian (0.02 %) and Macedonian (0.01%). A large number of the population preferred not to answer and state their ethnicity (19.70%). However, the native language of the resident population in the Fier District is Albanian (99.39%).²⁴

The socio-economic baseline survey will define the language, ethnicity and religion of the resident population of the project area.

4.3.4. 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%) sectors²⁵. 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 land²⁶.

The total workforce by occupation is split across the sectors as follows: agriculture 41.4%, industry 18.3% and services 40.3%²⁷.

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%²⁸, but these official rates may not include those working at near-subsistence farming.

²² INSTAT 2011 CENSUS <http://www.instat.gov.al/>

²³ INSTAT 2011 CENSUS <http://www.instat.gov.al/>

²⁴ INSTAT 2011 CENSUS <http://www.instat.gov.al/>

²⁵ "The World Factbook". CIA.gov. Central Intelligence Agency. Retrieved 28 August 2020.

²⁶ *Idem...*

²⁷ *Idem...*

²⁸ INSTAT, Labor Market, 2018.

Fier County

The region of Fier is home to the Patos - Marinza oilfield, Europe's largest onshore oil field where oil production has slowed down following the mid-2014 slump in international oil prices. The region of Fier, known as the breadbasket of Albania's agriculture, produces about a third of the total vegetables and a quarter of the country's field crops, making agriculture in this region a key sector in addition to its oil industry which has slowed down in the last few years due to a slump in international oil prices.

The region is the major producer in the production of fresh vegetables, melon and white bean, as well as grains, such as wheat and maize, and also olive production. Because of its key oil and agriculture sectors, the region of Fier is one of the key contributors to the country's GDP along with Tirana and Durres, which hosts about half of the country's population and businesses.

The development of the TAP gas pipeline through the Fier region in the past years brought to it an increase in employment in the area, and also an increase in the economy due to primary and secondary investments and spending.

Project Area

The incomes for those communities in the Project area rely mostly on agriculture and livestock rearing. There is a small presence of orchards in the area, mostly in the gardens situated in the proximity of the houses, but no proper orchard activity; this is due mostly to the salinity of the fields.

Libofshë has the lowest rate difference between men and women in unemployment in the region. Unemployment is low, 12.25% (13% for women and 11.5% for men) while young persons (18-24 years) the unemployment rate 29.1%, whilst the unemployment rate for the Fier region is at 29.5%²⁹.

Unemployment in the AU of Remas is even lower, at 8.9%, which is due mostly to the fact that this AU is mostly a rural area and the inhabitants of the area are registered as self-employed in the farming industry, while the youth (18-24 years) unemployment rate is at 22%.

The rate of employment for the Libofshë AU in industry is very low, at 9.4%, while services are 23.3% of the total employed, with 67.3% of the workforce employed in the agriculture sector.

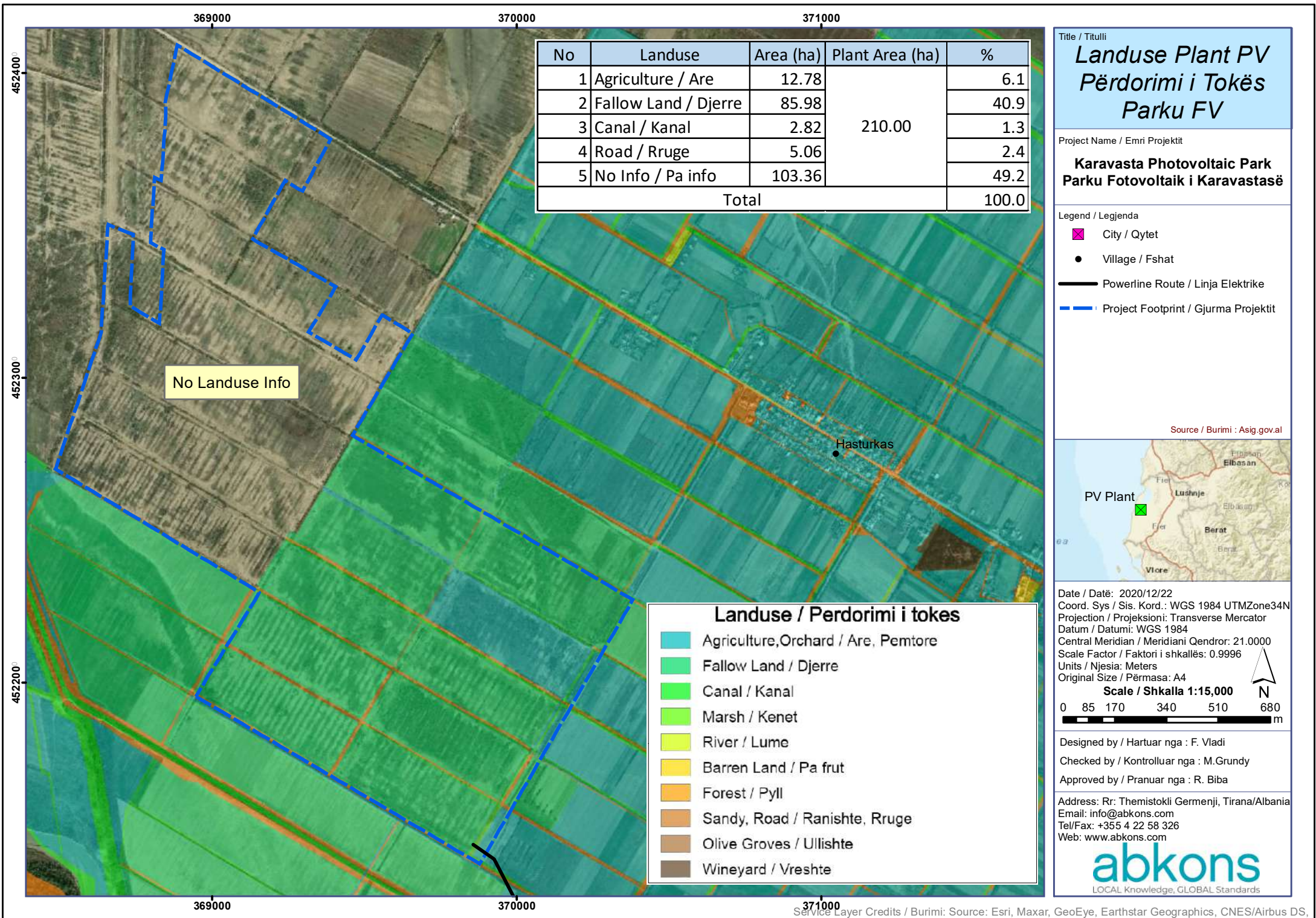
In the AU of Remas the majority of the population is employed in the agriculture sector (83.8 %), while work in industry is quite absent for only 4.3%, while in the service sector there are employed 11.9% of the workforce.

4.3.5.Land Use

The area is characterized by a uniformly flat landscape with the absence of significant woodland or scrub cover. The land use in the broader Project area is almost completely dominated by crops, which present as a characteristic patchwork of rectangular fields.

The majority of the agriculture land in the wider area is used for annual crops like fodder, corn and wheat. The orchard cultures are not widespread in the area and do not represent an important source of income in agriculture activities.

²⁹ Municipal Development Plan 2017-2025, December 2016



Title / Titulli
**Landuse Plant PV
Përdorimi i Tokës
Parku FV**

Project Name / Emri Projektit
**Karavasta Photovoltaic Park
Parku Fotovoltaik i Karavastësë**

- Legend / Legjenda
- City / Qytet
 - Village / Fshat
 - Powerline Route / Linja Elektrike
 - Project Footprint / Gjurma Projektit

Source / Burimi : Asig.gov.al



Date / Datë: 2020/12/22
Coord. Sys / Sis. Kord.: WGS 1984 UTMZone34N
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Figure 43: Land use in the PV Plant area

Parcels of land are also used for pasture by the farmers in the area due to the difficulty of planting crops in salty areas.

The PV Project site itself is mostly saline due to its vicinity to the seashore and the infiltration of sea waters, and therefore is not used for growing crops but is used for pasture.

As confirmed from the community meetings, the land to be used for the PV plant is salty and not cultivated, although a small portion of the land is used for grazing but there are no specific users identified since most of them are from other areas of Albania that travel to the project area during the summer season. The farmers stated that only a small portion of the land (nearly 5 Ha) is used for animal grazing and crops for animal grazing. These farmers are users of this land, which is state owned.

Being quite exclusively cultivated with annual crops in the general area, the farmers harvest in the period of May-June, so it is preferable for the Project to allow the harvesting of these crops in June into consideration.

The route chosen for the Overhead Transmission Line presents a different land cover use with flat areas near the Semani River used for the cultivation of annual crops and pasture, whilst in the slightly hilly areas there are also perennial cultivation of fruit orchards. This was observed through satellite images of the area and will be evaluated during the socio-economic survey of the area.

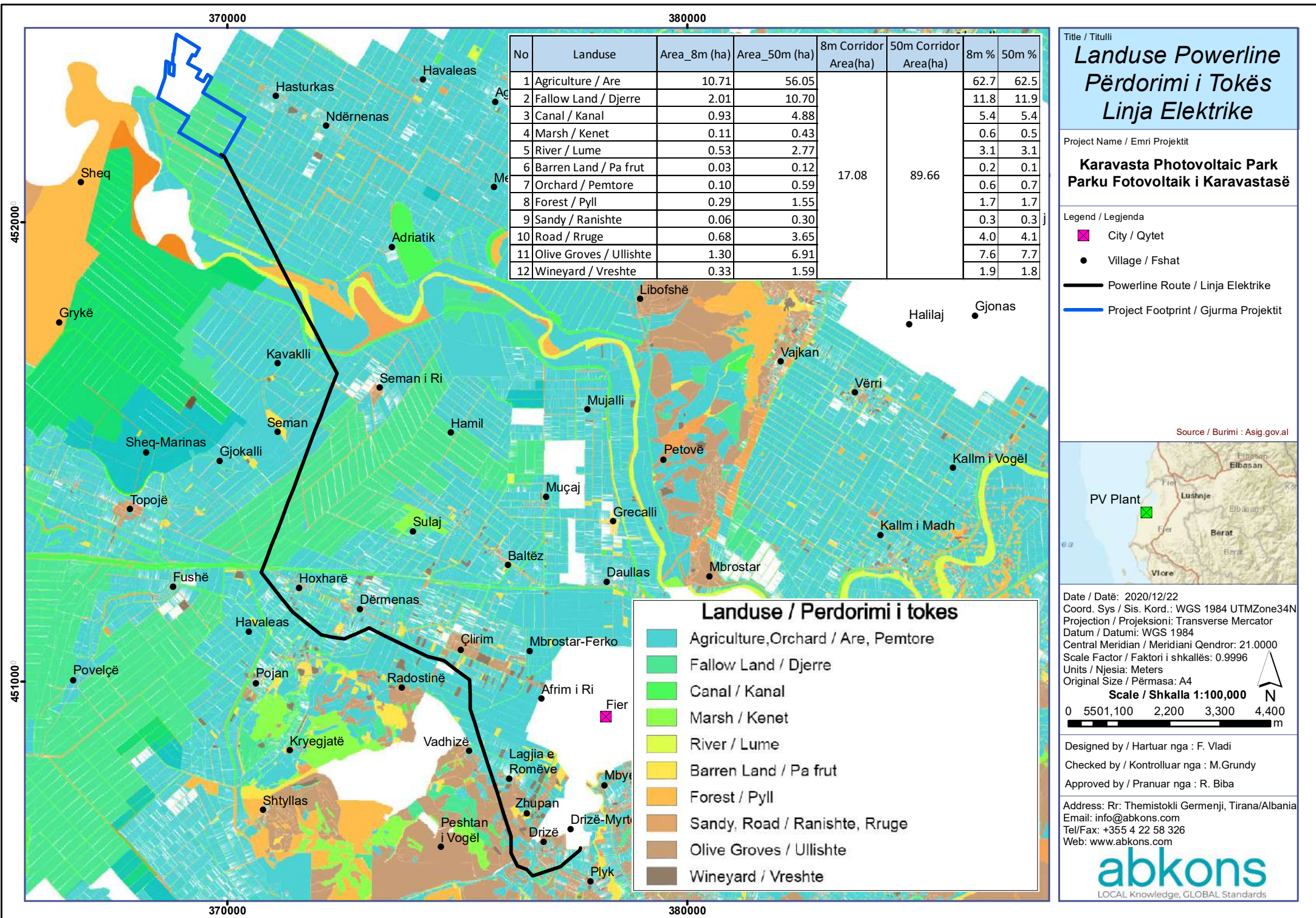


Figure 44: Land use – Powerline



Figure 45: Land coverage in the PV Project Site Area



Figure 46: Land Coverage in the PV Project Site Area



Figure 47: Corn field near the PV Project Site Area

4.3.6. Education

Education in Albania for primary, secondary, and tertiary levels are 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 countries³⁰.

The Project area has good infrastructure related to schools and health care systems. There are five (5) kindergartens in the Administrative Unit of Libofshë, one (1) elementary school, four (4) middle schools with elementary schools and one (1) high school. There is also one nursery located in the village of Libofshë.

There are eight (8) nurseries and kindergartens in the Remas AU, seven (7) middle schools with elementary schools and one (1) high school in the village of Remas. The intention in the future years is the reduction of the number of the schools, as some of the schools and kindergartens are have a very small number of pupils and are not very effective, with one teacher needing to give lessons to more than one class year.

4.3.7. 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.

There is one (1) Family Health Centre and eleven (11) Health Care Centres in the Libofshë AU³¹. There are 5 Health Care Centres in the AU of Remas.

³⁰ "SCHOOL LIFE EXPECTANCY". World.bymap.org. 31 January 2017.

³¹ Municipal Development Plan 2017-2025, December 2016

4.3.8. Tourism and recreational activities

The Divjake-Karavasta National Park is a major touristic attraction in the area and well supported by the infrastructure, services and accommodation capacity. The number of visitors has increased in the last few years, including tourists interested in hiking and bird-watching since the park is populated by a large variety of bird species including the famous, curly pelican.

The proposed project site is relatively far from the Karavasta lagoon and to the most visited areas of the Divjake-Karavasta National Park, and is not visible from these areas. In this context the proposed PV plant project does not intersect with any touristic attraction assets or affect touristic activity within the Divjake-Karavasta National Park.

4.3.9. 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 will identify the pre-existing vulnerable people based on but not limited to the below criteria.

- Widow living alone and/or head of family
- Households who rely on social assistance for income
- Households who rely on agriculture and livestock activities
- Households who have no or limited incomes/resources.

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).

The exact route of the OHL is not defined and the persons affected are not identified yet. In this context the socio-economic survey will be limited to identify the vulnerable people whose land may be affected by the OHL. However, the screening and identification of the vulnerable people in terms of land acquisition shall be defined in the Livelihood Restoration Plan (LRP) or Resettlement Action Plan (RAP), as may be required post ESIA.

4.3.10. 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, do 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.

4.3.11. Archaeological and Cultural Heritage

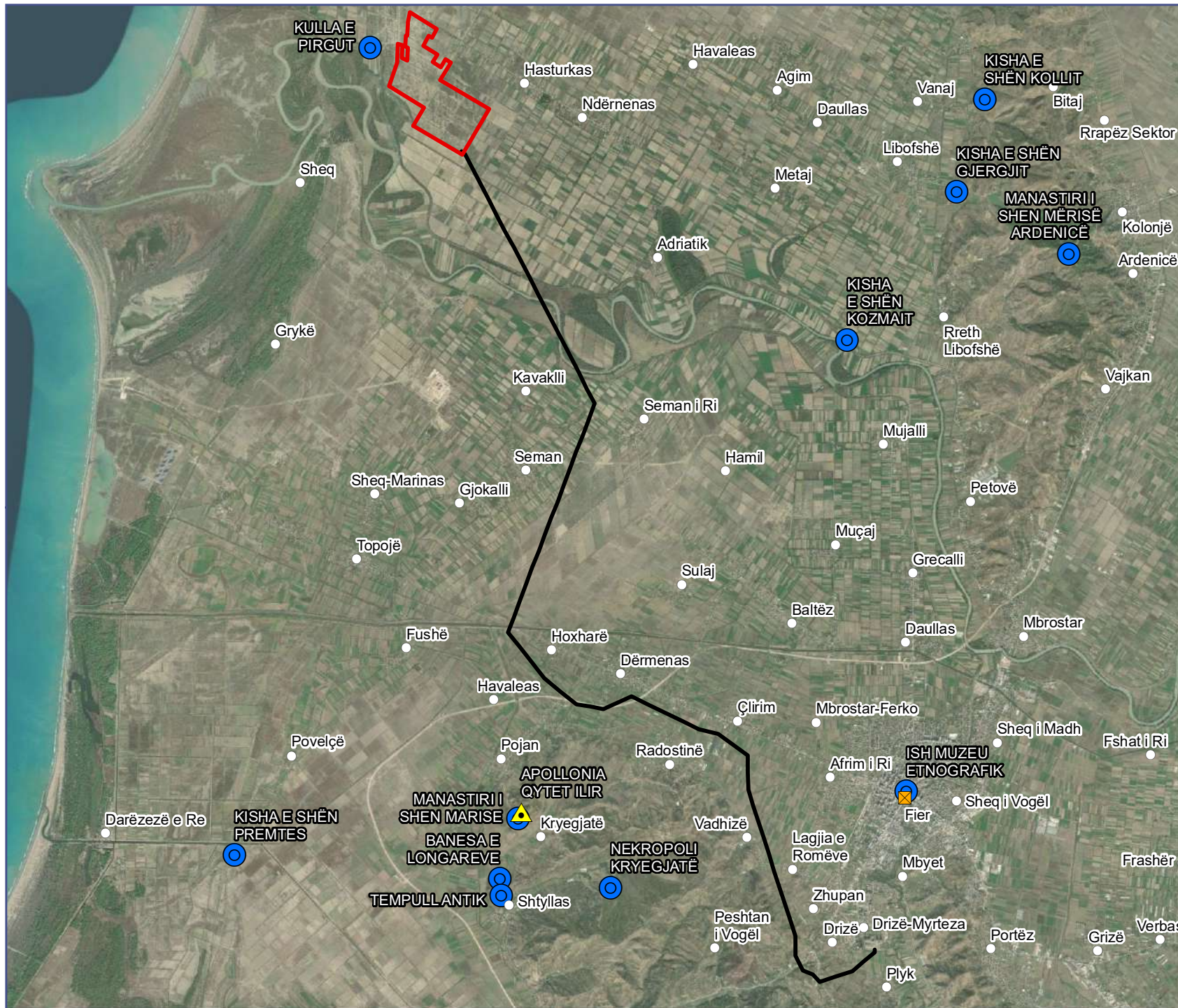
Based on the published literature and the existing data within the municipality of the Divjakë, the following main areas of important archaeological findings, architectural remains, and other Cultural Heritage assets were identified:

- Divjaka - In the hilly area of Divjaka, numerous archaeological objects dating to the Stone Age have been discovered. Based on the archaeological evidence, the area has been used as a settlement since the Stone Age, by the Illyrian tribes and during the middle Ages.
- Karavasta – A village in the municipality of Divjaka originates from the ancient Greek name, which means harbour. It is also mentioned in the Turkish document of 1431, as a very good marine moorage.
- Babunja - A village in the municipality of Divjaka, located south of the Karatoprak hills, on the right side of the old Seman River bed.
- Çermë e Sipërme - A village in the municipality of Divjaka, located on the left side of the lower reaches of the Shkumbin River, 15 km from the city. Archaeological objects and a cemetery dating to the Illyrian period have been discovered near the village, which testify to this area as a settlement since the II-IV century. It has been mentioned by this name since 1582.
- Gërmenj - A village in the municipality of Divjaka, which is bordered on the south by the village of Hallvaxhias and the village of Bregas.
- *Kulla e Pirgut* - First Category Monument - There is no information regarding its construction, use, and period. Nowadays, there are no signs of Kulla and it is turned into stables that are used for animals.
- *Kryegjata Necropolis* - First Category Monument - The necropolis has not been excavated; therefore information is limited. It believed that it dates to the archaic period. Additionally, the Kryegjata village is mentioned in various literature as an area with high archaeological significance, because apart the necropolis, during a systematic survey in 1998, in the valley of Shtyllas there were identified; a large Hellenistic site, a large Hellenistic and Roman archaeological site, and a high concentration of lithics that date to Middle and Upper Paleolithic, and Mesolithic period. Probably, these were used as open-air sites during these periods.
- *Apollonia Archaeological Park* – A pollonia is located 12 kilometres away from the city of Fier. Apollonia was founded in the early seventh century BC in the lands of the Illyrian Taulants. It was founded the Greek colonizers coming from Corinth. The first records of their presence are

documented at about 620 BC. The city was named in his honour god Apollo. Among 24 cities all over the Mediterranean world bearing this name in Antiquity, Apollonia of Illyria was more important and played a major role as a trade intermediary between the Hellenes and the Illyrians. Apollonia was at that time a large and important city, near the river Aoos (Vjosa). Apollonia retained its grandeur even in the Roman period.

- After an earthquake in the III AD century, the river Aoos changes bed and detached the city from the sea. The detachment proved fatal in an era where all commercial activity took place in connection with the sea. The town gradually lost its economic importance becoming a simple religious centre. Archaeologists call Apollonia Pompeii of Albania, as only 10% of the territory of the former city is discovered to date.
- The large territory covered with monuments, panoramas and magnificent landscapes over the plain of Myzeqe and the Sea Adriatic, a highway in fairly good condition, the position of geographically favourable near major cities and beaches south make the Apollonia Archaeological Park a destination of privileged for cultural tourism in Albania.
- The main monuments include: Temple B, the Archaic Agora, Acropolis, the Obelisk, the Theatre, the Agonothetes or Bouleuterion, Stoa, the Temple of Diana, Prytanea, Nymphaeum, etc.

Figure 48 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.



Title / Titulli

Cultural Heritage Trashëgimia Kulturore

Project Name / Emri Projektit

Karavasta Photovoltaic Park Parku Fotovoltaik i Karavastës

- Legend / Legjenda
- City / Qytet
 - Village / Fshat
 - Project Footprint / Gjurma Projektit
 - Powerline / Linja Elektrike
 - ▲ Archaeology / Arkeologji
 - Architecture / Arkitekturë



Date / Datë: 2020/12/22
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 Projection / Projektioni: Transverse Mercator
 Datum / Datumi: WGS 1984
 Central Meridian / Meridiani Qendror: 21.0000
 Scale Factor / Faktori i shkallës: 0.9996
 Units / Njesia: Meters
 Original Size / Përmasa: A4
Scale / Shkalla 1:100,000

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Source / Burimi : asig.gov.al

Figure 48: Cultural Heritage Map of the Project Area

4.4. Infrastructure and Utilities

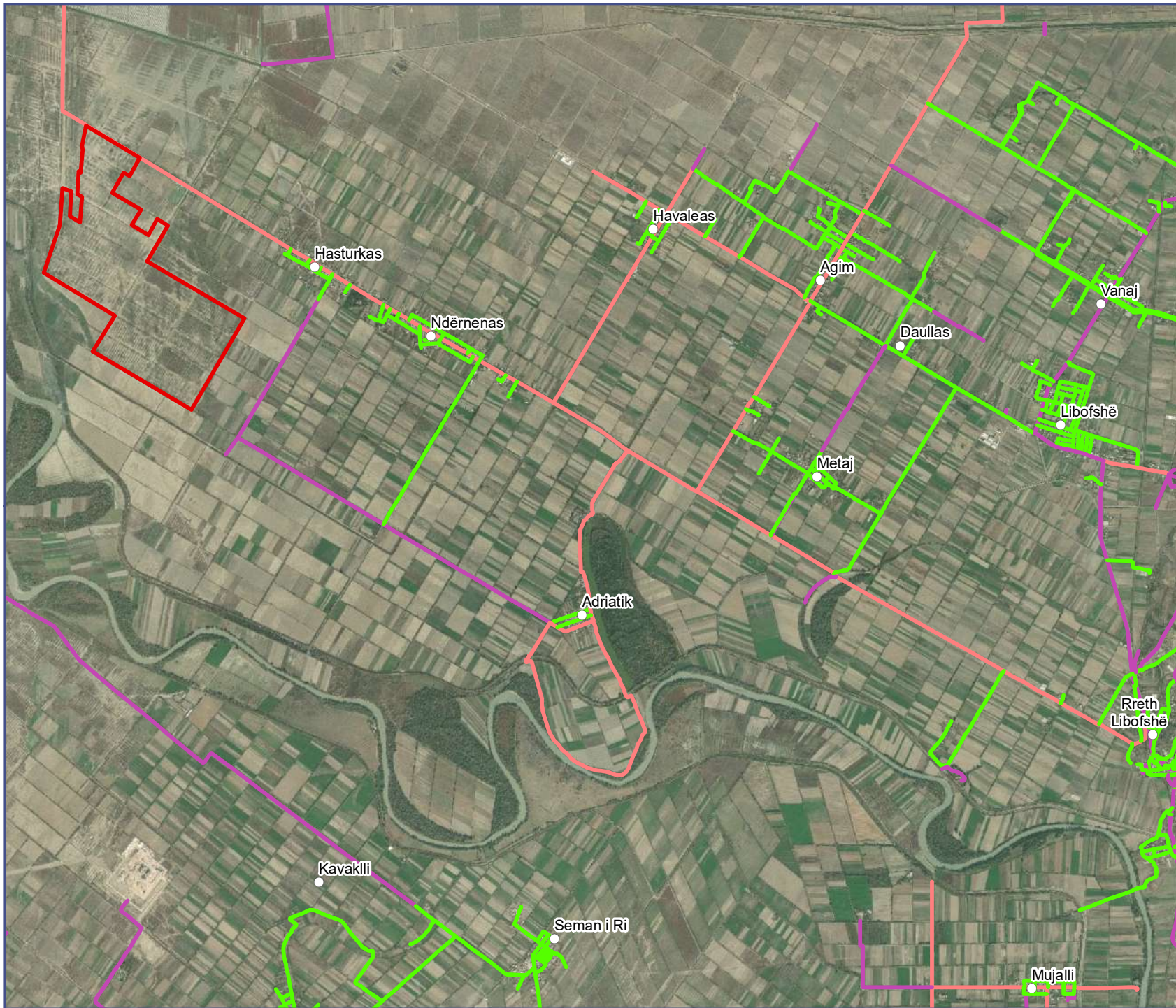
The irrigation systems, although present, are not working properly, and only a small portion of the agriculture land in the area benefits from these services. This is mostly because maintenance through the years has not been performed correctly, and the channels has been filled with various materials that do not allow the correct function. Out of 6.200 Ha in the area, only 320 Ha are irrigated through the system; see Section 4.1.1 above for a more detailed description of the drainage and irrigation network.

The area is well connected to the main national road. The road infrastructure has been improved in the past few years with the national road connected to the Libofshë and secondary roads connected to the villages in the area, such as Metaj and Ndërmenas and Hasturkas; Figure 49 shows the local road network around the PV Project site.

The villages are connected to the water supply and sewages systems, while there is lack of illumination in the secondary roads that connects these areas to the primary and National roads.

Small roads, including dirt roads, link settlements in the area and the road traffic is negligible, as no significant noteworthy infrastructure is present in the area.

The Trans Adriatic Pipeline (TAP) passes in the vicinity of the Project; the route of the pipeline in relation to the Project is shown below in Figure 50. The Decision of the National Territorial Council has declared a 'national corridor', an area with a width of 500 m (250-250 m) along the TAP route. Therefore for both OHL route options the Project will need to inform TAP, and obtain the necessary permission from TAP before project development or change the OHL route.



Title / Titulli **Infrastructure and Utilities**
Infrastruktura dhe facilitetet

Project Name / Emri Projektit
Karavasta Photovoltaic Park
Parku Fotovoltaik i Karavastësë

- Legend / Legjenda
- City / Qytet
 - Village / Fshat
 - Project Footprint / Gjurma Projektit
 - Road Network / Rrjeti Rrugor**
 - Primary Roads / Rruge Primare
 - Secondary Roads / Rruge Dytësore
 - Tertiary Roads / Rruge Tretësore
 - Residential / Residenciale
 - Unclassified / Pa klasifikuar



Date / Datë: 2020/12/22
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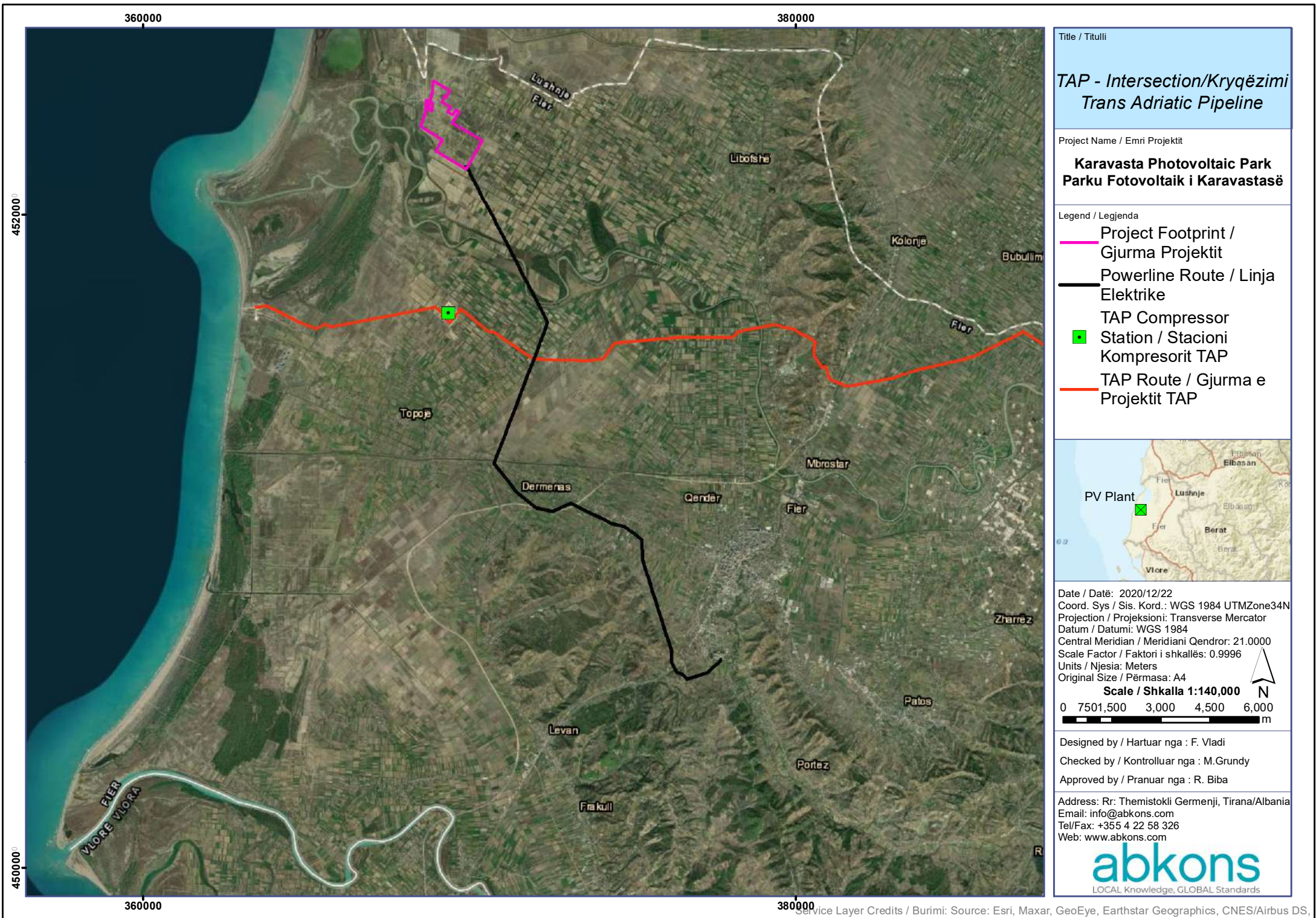
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Source / Burimi : Openstreetmap.org

Figure 49: Map of the Roads in the vicinity to PV Plant



Title / Titulli
**TAP - Intersection/Kryqëzimi
 Trans Adriatic Pipeline**

Project Name / Emri Projektit
**Karavasta Photovoltaic Park
 Parku Fotovoltaik i Karavastasë**

Legend / Legjenda

- Project Footprint / Gjurma Projektit
- Powerline Route / Linja Elektrike
- TAP Compressor Station / Stacioni Kompresorit TAP
- TAP Route / Gjurma e Projektit TAP



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Figure 50: Map showing the route of the TAP Pipeline in relation to the Project

4.5. 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:

- Divjakë- Karavasta National Park (Refer to Figure 24: Protected area map);
- Irrigation and drainage channels within the PV Project area and their associated habitats and ecology (Refer to Figure 24: Protected area map and Figure 14);
- Ground nesting birds potentially using the PV Project site area (Refer to Figure 30 and Figure 31);
- Sensitive ecological habitats that lie along the OHL route, such as Seman river, old riverbeds, pine forests etc. (Refer to paragraph 4.2.2);
- Abandoned bunkers located within the PV Project site and along the OHL route (Refer to Figure 28 and Figure 29);
- Residential dwellings within 500 m of the OHL route and/or PV Project site;
- The nearby villages of Hasturkas and Ndërnenas (respectively 800 m and 1,500 m to the east of the PV Project site area) (Refer to Figure 42);
- Grazers using the PV Project area (Refer to Figure 43);
- Farmers and landusers along OHL route. (Refer to Figure 44).

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 ESIAAs, 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 will be defined a preliminary list of project stakeholders. 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 international guidance of IFC and has considered the following groups:

- national, regional and local authorities;
- local community leaders;
- community members including vulnerable sub-groups such as women, farmers and elderly;
- 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 17: 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.
Ministry of Culture (MoC)	Protection and conservation of the National cultural heritage (shall be informed in chance findings during the construction activities). Provide information on cultural heritage in the project area.
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.

Stakeholders and Types	Interest and role in the project
National Agency for the Protected Areas (NAPA)	NAPA is a public body under the MTE, which is responsible for the management of protected areas.
National Agency of Natural Resources (NANR)	NANR, a subordinated agency under the MEI, has as scope of its work the development and supervision of rational use of natural resources, based on governmental policies.
Institute of Cultural Monuments – (ICM) 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.
Archaeological Service Agency (ASA) - Ministry of Culture	The ASA is a central institution, under the responsibility of MoC, established to carry out activities in the field of excavations and studies of cultural heritage, which is affected by construction works of any nature, or by plans for territory regulation.
Transmission System Operator (OST)	Manages the electricity transmission system in Albania.
Regional	
Regional Directory of Environment, Fier 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. 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.
Regional Inspectorate of Environment and Forests, Fier Region	Environmental law enforcement and inspection. Supervision role during project implementation.
Regional Directory of Cultural Heritage, Fier Region	Protection and conservation of the regional and local cultural heritage and shall be informed of chance findings during the construction activities. Provide information for the cultural heritage in the project area.
Prefecture of Fier Region	Reporting key concerns/opinions to the Government. Role in facilitation of the public engagement and hearing process.

Stakeholders and Types	Interest and role in the project
Regional Council of Fier	Reporting key concerns / opinions to the Government. Role in facilitation of the public engagement and hearing process.
Mayor of Fier Municipality and Divjakë 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 the Fier and Divjakë Municipalities	<p>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.</p> <ul style="list-style-type: none"> - 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. - 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. - Water supply enterprise provides information for the water supply systems in the project study area.
Local	
Administrative Units of Libofshë and Remas	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 developers website and hard copies will be made available for perusal at the municipality premises regional Environmental agencies. The comment period will last 40-60 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 and SMS.

The Draft ESIA Report will be made available to I&APs for a 40-60-day comment 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. Public Consultation During Scoping Phase

Initial consultations for scoping phase has been carried out with local community, local and regional authorities, and other interested stakeholders within or nearby the project area. Local residents from the communities in and around the Project site were also involved in the initial scoping meetings performed by the Consultant. Any other affected communities and other key stakeholders that were not identified during the Scoping phase will be identified and engaged during ESIA phase.

During the community meetings with the local population in Ndërmenas and Hastukas taken on 29/10/2020 the following issues were raised:

- Positive attitude towards the Projects, seen as an opportunity for the development of the area;
- Land in the area is mostly saline with sporadic areas used as grazing land and nearly 5 Ha used for cultivation of annual crops;
- Opportunity for employment of the locals;
- Possibility for the project to make social investments in the area or infrastructure development;
- Avoid the implementation of the Project during harvesting period in May – June or minimize the impacts related to this topic.

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 (PPNA, AOS and Iliria), taken on 16/10/2020 were raised the following issues:

- Source of the water that will be used for the Projects' needs;
- Monitoring of the species is performed usually during the Spring season;
- Avoid the cleaning of the panels with hazardous products or mitigation measures to minimize the impact;
- Use of signs to avoid the crashing of the birds with the transmission lines which is very efficient and low-cost;
- Migratory birds route near the project area to be kept under observation;
- 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 21st – 25th September a total of 16 separate 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);
- National Agency of Natural Resources;
- Transmission System Operator (OST);
- Mayor of Fier Municipality (Technical Directories of the Fier Municipality);
- Libofshe Administrative Unit, Municipality of Fier;
- Prefecture of Fier Region and Regional Council of Fier;
- Drainage Board;
- Regional Agency of Environment, Fier Region;
- Municipality of Divjakë;
- Regional Administration for the Protected Areas (RAPA).

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 co-ordinated with the village heads.
- Employment opportunities for the local community.
- Considering that the Project is close to the Karavasta National Park the development should collaborate with the Regional Administration of the Protected Area.
- The PV plant and transmission line should be part of the same ESIA.
- There are some projects planned, but not yet approved, in the area that might cause cumulative impacts (see Section 7.3.5). A summary of project planned is provided in Appendix II
- Reflections from the panels might confuse the birds and needs to be considered within the ESIA.
- 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 Phase. As well as local community engagement, this may include further meetings and consultations with government institutions listed, but not limited to, the below:

- 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
- Municipalities of Fier and Divjakë
- Regional Environmental Directorate
- Drainage Board
- Other relevant institutions.

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.

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 Checklist³² (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.

³² 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 18: Initial impact assessment

Topic	Potential level of impact	Rationale for initial assessment
Construction phase		
Environmental impacts		
Generation of dust and particulate matter	Low	<p>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.</p> <p>The majority of construction will take place away from sensitive receptors, such as residential communities, with the closest communities located around 800 m from the Project site and 150-200 m from the OHL. 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.</p>
Emissions from construction traffic	Low	<p>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: PM₁₀ and PM_{2.5}, CO from inadequate combustion, hydrocarbons (HC or VOC) which are created by the inadequate combustion and NO_x which are produced in high combustion temperatures.</p>
Noise and vibrations	Low	<p>The majority of construction will take place away from sensitive receptors, such as residential communities with the closest communities located around 800 m from the Project site and 150-200 m from the OHL. 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.</p>

Topic	Potential level of impact	Rationale for initial assessment
Potential impacts on groundwater and surface water quality	Low	<p>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.</p> <p>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.</p> <p>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.</p>
Potential impacts on soils	Low	<p>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.</p>
Direct impacts on Protected Areas	Low	<p>Although the proposed PV Project site and associated infrastructure is located near Divjake- Karavasta Protected Areas, no direct physical impact on it during the construction phase are anticipated to occur as all activities will be within the Project footprint itself. This preliminary assessment will be confirmed with the NAPA (National Agency of Protected Areas) through official consultation.</p> <p>Moreover, other restrictions will be further assessed within ESIA through field investigation to check for critical habitats like nesting grounds, rookeries, bat foraging corridors, and migration corridors) requiring amendment of the proposed OHL route.</p>

Topic	Potential level of impact	Rationale for initial assessment
Impacts on habitats and flora	Low-medium	<p>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 site area has been identified as already severely degraded due to past agricultural activities and grazing.</p> <p>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.</p>
Impacts on fauna and aquatic ecology	Low-medium	<p>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.</p> <p>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.</p> <p>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.</p>
Impact of birds	Low-medium	<p>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 no presence of ground-nesting birds were identified within the PV Project footprint. However, the survey for breeding birds was conducted late in the breeding season (early August 2020) and it is very likely that the assessment of the avifauna of the area might have missed evidences on early breeding birds. Therefore, before reaching any final conclusions regarding the avifauna, it is strongly recommended to conduct bird surveys in the project area and along the transmission lines at more appropriate time that adequately covers bird breeding season, most probably in June 2021.</p> <p>Other general risks to birds associated with construction activities can be adequately managed through implementation of appropriate management practices.</p>

Topic	Potential level of impact	Rationale for initial assessment
Visual and Landscape Effects	Low	<p>Construction activities and presence of construction equipment, machinery and materials will only be temporary and limited, and considering no sensitive receptors lie within 500 m of the Project site impact on visibility is anticipated to be minimal.</p> <p>The project area is relatively far from the Karavasta lagoon and to the most visited areas of the Divjake-Karavasta national park. In this context the PV plant project site is not visible from or does not intersect with any touristic attractions.</p>
Waste Generation during construction	Low	<p>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.</p>
Socio-economic impacts		
Land acquisition and changes in land use	Medium	<p>Based on initial site observation only a limited area of land designated for PV Project is currently used for grazing, 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 pasture land.</p> <p>The Project will require permanent land acquisition for the placement of the towers for the OHL, as well as for the Fier substation (if expansion is required). Access to land will be restricted during the construction phase whilst the conductors and wires are laid. Therefore, sections of these fields will not be cultivable during construction of the OHL.</p> <p>Consultation with landowners / land users is required, with agreement of compensation for land acquisition, if applicable.</p> <p>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" 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.</p>

Topic	Potential level of impact	Rationale for initial assessment
		<p>These plans will help to conduct a census and asset inventory to collect data and identify the persons who need to be displaced by the project, determine who will be eligible for compensation and assistance, and discourage ineligible persons, such as opportunistic settlers, from claiming benefits. In addition, the Company shall establish a cut-off date for eligibility. Information regarding the cut-off date will be well documented and disseminated through the project area. The aim of the company shall be to finalize the land acquisition with voluntary agreement and to avoid expropriation process.</p>
Community Health, Safety and Security	Low	<p>The majority of construction is located away from any communities. 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.</p> <p>From an overall desktop assessment of the proposed OHL, there were identified no vertical restrictions on buildings beneath transmission lines, or a lateral restriction to ensure access and safety either side of the transmission line (far from the urban settlements) within the safety corridor (25 m on each side) and no crossing of the protected areas, forest habitat or cultural heritages sites.</p> <p>Moreover, other restrictions will be further assessed within ESIA through field investigation to check for crossing of other infrastructure (other power lines, telephony, antenna, etc), requiring amendment of the proposed OHL route.</p>
Construction Generation	Traffic Low	<p>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 area at the end of proposed OHL route. Information on traffic management to be disclosed where possible through the SEP.</p>
Employment Opportunities	Medium (positive)	<p>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. Peak worker numbers during construction period will be circa 200, and will include unskilled, semi-</p>

Topic	Potential level of impact	Rationale for initial assessment
		skilled, skilled and management staff from a variety social backgrounds, including some overseas workers (although the Project will seek to maximise opportunities for local employment).
Cultural Heritage	Low	<p>According to the preliminary desk studies, and consultation with Ministry of Culture, no cultural heritage objects are located within 5 km buffer corridor of PV project footprint and 1 km buffer corridor from OHL route.</p> <p>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.</p> <p>A Chance Find Procedure will be implemented for the Project construction activities.</p>
Operational phase		
Environmental impacts		
Emissions to air and noise generation	Low	<p>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 20 persons) arriving to site and any vehicle that may be required to manage panel cleaning.</p> <p>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.</p>
Waste and Wastewater	Low	<p>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.</p> <p>Very limited requirement for hazardous materials or chemicals during operation phase.</p>
Impact on water resources and use	Low	<p>The Solar Park will cover about 190 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.</p> <p>Water will be required for the periodic cleaning of the panels and this will be supplied from an approved source.</p>

Topic	Potential level of impact	Rationale for initial assessment
Impact of protected areas, habitats, flora and fauna	Low	<p>The project area is surrounded to the north and north-west by Divjaka-Karavasta National Park while in the south by the Nature Managed Reserve of Pishe-Poro and the Landscape Protected Area of Vjose-Narta; although the proposed photovoltaic plant and OHL route does not traverse any of these Protected Areas.</p> <p>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.</p>
Impacts on birds	Medium	<p>Divjaka-Karavasta and Vjose-Narta are both Important Bird Areas due to the large number of waterbirds visiting then in breeding season, wintering season and migratory season. Although breeding birds tend to be rather sedentary, wintering and migrating birds, particularly large flying birds such as Pelicans, Flamingoes, Birds of Prey, Herons, Cormorant, Ducks, Waders, Gulls, Terns tend to use the corridor Divjaka-Karavasta-Vjosa-Narta quite frequently and in significant numbers. 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 on other similar large scale PV projects. Furthermore, initial indication is that the OHL route does not cross such migratory routes.</p> <p>As solar PV projects cover a large surface area there is the potential risk that there presence may impact ground-nesting birds, if present in the Project area; this risk will be considered further in the ESIA.</p> <p>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;</p> <p>Further avifaunal studies are required to investigate potential impacts on local and migratory species, as well as on ground-nesting birds and identify mitigation measures where appropriate.</p>
Visual and Landscape Effects	Low-Medium	<p>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.</p>

Topic	Potential level of impact	Rationale for initial assessment
		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.
Socio-economic impacts		
Land Acquisition	Low-Medium	<p>Based on initial site observation the land use for area designated for PV Project is currently only used for grazing, 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 to its acquisition for the PV Project and associated infrastructure will lead to decrease and loss of pasture land.</p> <p>The Project will require permanent land acquisition for the placement of the towers for the OHL, as well as for the Fier substation (if expansion is required).</p> <p>Consultation with landowners / land users is required, with agreement of compensation for land acquisition, if required.</p>
Employment opportunities	Low (positive)	During operation there will be a limited number of employment opportunities (circa 20), including technical and semi-skilled workers, as well as security staff.
Community Health, Safety and Security	Low	<p>The PV Project is located away from any communities and appropriate security will be implemented to prevent unauthorised access.</p> <p>Traffic movement during operation phase will be limited to only workers arriving at site for work.</p>
Potential Impacts from Electric and Magnetic Fields (EMF)	Low	Only the eastern end of proposed transmission line route is located near to residential areas. Towers and lines are designed with sufficient safety distances to protect the public from potential impacts of EMF.

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 Scoping³³", 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 will provide a context within which the impacts of the Project will be assessed. It will also help in environmental and social management planning and strategy to minimize identified potential impacts due to the Project activities on surrounding environment, and provide a reference point against which future changes can be monitored to assess performance.

The environmental and social baseline will 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 51) A reconnaissance survey of the study area will be conducted to identify environmental and social sensitive locations within the study area. Environmental and social baseline data will be 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.

³³ European Commission's "Environmental Impact Assessment of Projects - Guidance on Scoping (Directive 2011/92/EU as amended by 2014/52/EU)" 2017

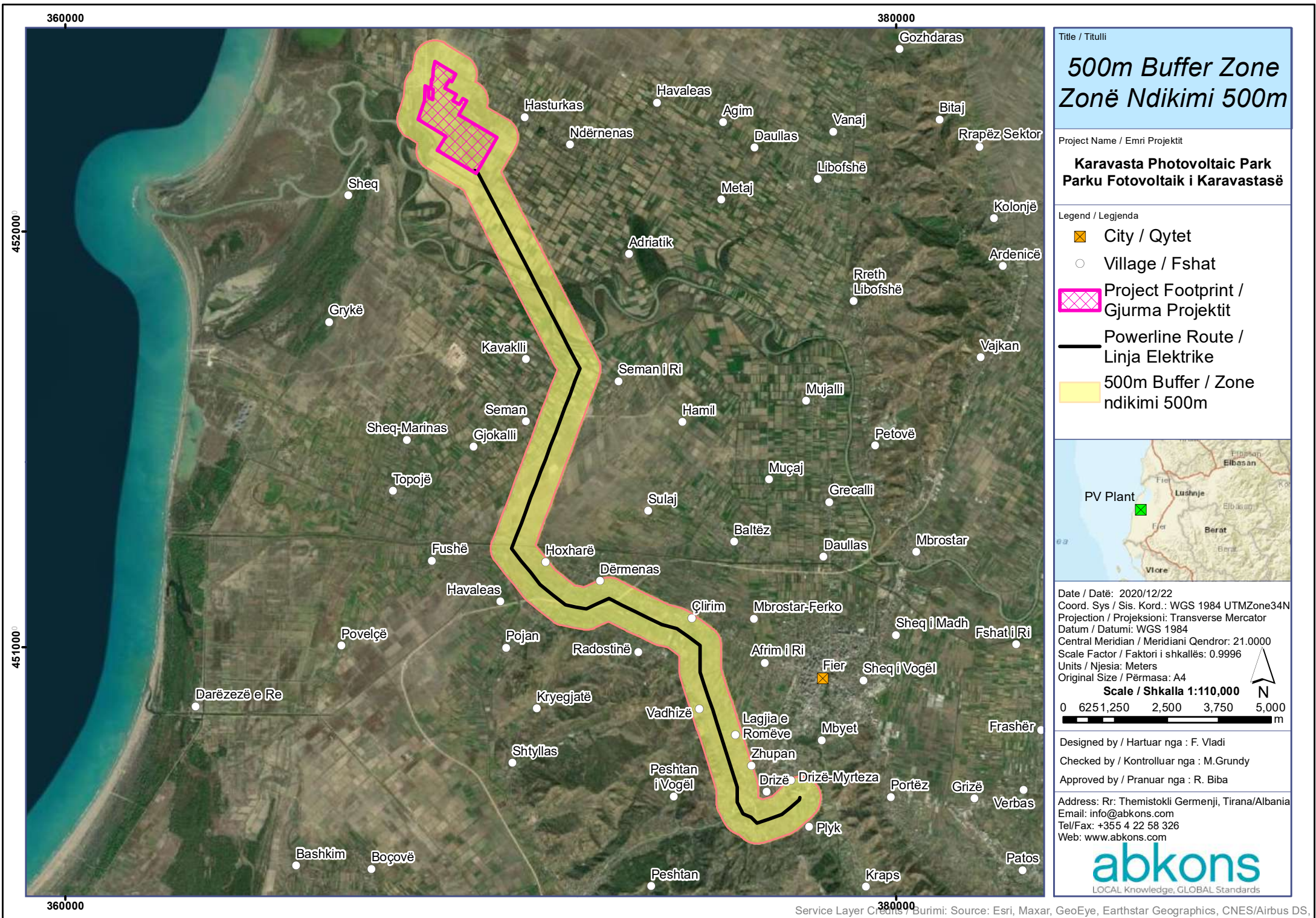


Figure 51: Map Showing Baseline Study Area / direct Area of Influence

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 to 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:

- EIA's conducted in surrounding area;
- Government Statistics and development Plans;
- Biodiversity Studies of the Area.

Nr.	Environmental Attribute	Source
1.	Long term meteorological data	<ul style="list-style-type: none"> • Data from Institute of GeoSciences, Energy, Water and Environment (IGEWE)
2.	Geology, Hydrology and Hydrogeology	<ul style="list-style-type: none"> • Data from Institute of GeoSciences, Energy, Water and Environment (IGEWE) • Geological, Hydrological and Hydrogeological Map from National Spatial Data Infrastructure (NSDI/ ASIG)³⁴

³⁴ <https://geoportal.asig.gov.al/en/services?category=geology>

Nr.	Environmental Attribute	Source
3.	Land Use/ownership	<ul style="list-style-type: none"> • Satellite Imagery/ Corine landcover • Cadastral maps
4.	Socioeconomic Environment	<ul style="list-style-type: none"> • Primary Census Abstract data 2011; • Village Directory Data (2011); and • 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	<ul style="list-style-type: none"> • Environmental studies, scientific literature and other pre-existing biodiversity assessments available for the project area; • National or regional plans (e.g., Strategic Environmental Assessments, National Biodiversity Strategies and Action Plans); • Conservation programs or initiatives in the area and its surroundings (both conducted or planned); • Protected Areas World Database on Protected Areas (WDPA). • BirdLife International • 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. • 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; • Existing data, to identify any potential invasive species in the project study area site and the surrounding landscape; • Management Plan of Divjaka-Karavasta National Park; • Environmental and Social Assessment of Divjaka-Karavasta National Park; • National reports on International Waterbird Census; • Other planning documents as Strategy of Territorial Development of Municipality of Fier and Divjaka; • 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 19, Table 20, and Table 21 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 shall be undertaken by suitably qualified specialists covering the following 4 elements of biodiversity:

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

The study area to be surveyed will encompass

- 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 51 above, and the scope of the surveys is presented below. The scheduling for the survey is presented in Table 19 and Table 20 below. PR6 and EU standards will be considered in the assessment of impacts of biodiversity.

Terrestrial Fauna

Terrestrial fauna survey will be 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 on the IUCN Red List, nationally/regionally important including those included on the Albanian Red List and/or subject to provisions of Albanian legislation shall be shown on a map. GPS co-ordinates of any such 'priority' species shall be recorded.

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

The survey visits shall be undertaken in suitable conditions for recording signs of species activity by avoiding strong winds and prolonged heavy rain.

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

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

The survey information will be reviewed against available published population estimates from the wider area to 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

The survey is to be undertaken in August 2020 and if needed, another survey will be undertaken in Spring 2021 (April-May) when bats are active and the detection of roost sites is easier. Two types of bat surveys shall be undertaken as follows:

- **Transect Surveys:** Select 1 km transect routes within habitats likely to be used by bats within the PV Project area and OHL corridor. Carry out at least three survey visits at monthly intervals during August/September 2020 to record further details about species commuting/foraging flight paths. Carry portable bat detector sound recording equipment to assist with species identification on transect surveys. At least three 1km transects routes in 4-5 km distance from each other will be selected along the OHL and a 1 km transect route within the PV Project site.
- **Roosting Surveys:** Based on transect survey findings, undertake a search 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 survey, if needed, will be undertaken during Spring 2021 (April-May-June). It is likely to require at least two people at each roosting site. Bat detector sound recording equipment to assist with species identification shall be used. Three dusk emergence surveys of each potential roost site shall be undertaken during each of the months of April, May and June. The emergence survey shall be for 2 hours starting 15 minutes before sunset. Record of the species and number of bats using each roost site will be made.

Other Mammals

The survey is to be undertaken between August and November 2020 when mammal species can be identified from signs in the field or direct observation.

Locate a minimum of two 1 km transects in each sample site within the Project site and OHL route for mammals. Orientate some transects parallel to watercourses across Project site to search for signs of otter (*Lutra lutra*), badger (*Meles meles*), polecat (*Mustela putorius*), golden jackal (*Canis aureus*) and other riparian mammals. Map the location and route/extent of each transect on a map.

Walk the transects 3 times in suitable weather between August and November 2020 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 is to be undertaken between August and November 2020 when amphibian and reptile species can be identified in the field through direct observation. To find breeding sites for priority amphibian and reptile species another field survey will be undertaken during Spring 2021 (March, April, May).

Locate 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. Orientate some transects parallel to watercourses across PDA to search for presence signs and breeding frogs, toads, and terrapin. Map the location and route/extent of each transect on a map.

Walk the transects 3 times in suitable weather between August and November 2020 to identify and record signs of activity or presence and 3 times during Spring 2021 (March, April, May) to record the breeding of priority species.

Avifauna

A field visit for late breeding birds and early migrating birds will be conducted in the first week of August 2020. We consider that at this time of the year some ground-nesting birds might still be at the very late breeding stages and there is still a chance to find them nesting in the area. However the PV Project area would need to be revisited in early June 2021 in order to provide robust information on breeding birds as the data collected only in August 2020 may be insufficient to characterise the area. Potential ground nesting birds in the area include species such as Collared Pratincole (*Glareola pratincola*), Little Tern (*Sternula albifrons*), Kentish Plover (*Charadrius alexandrinus*), Little Ringed Plover (*Charadrius dubius*), Common Quail (*Coturnix coturnix*), Short-toed Lark (*Calandrella brachydactyla*), Calandra's Lark (*Melanocorypha calandra*), etc.

Surveys for migratory birds will be undertaken in early October 2020 and March 2021. Meanwhile, wintering birds surveys will take place by mid or late January 2021.

The methodology used during the field survey will combine both 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, such as dens and scrubs, 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 will be undertaken to identify bird species present in current and abandoned agricultural land, temporary marshes nearby, islands at Karavasta lagoon, reedbeds in "Godulla e Ushtarit", sandy dunes at sand bars separating the lagoon and agricultural land from the sea.

Point counts will be used along the proposed OHL routes covered by farmland, drain ditches, separated trees, etc.

Species, occurring in the area during the site visit, will be described including information on their conservation status and habitat requirements.

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

Nest site visits will be undertaken for nesting birds in Karavasta lagoon, Godulla e Ushtarit and adjacent dry land where colonially nesting species might occur. The observer will 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 will be composed of one observer 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 will be noted immediately in <https://observation.org/> database.

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

- The Authorities of Divjaka-Karavasta National Park;
- Representatives of Hunting Associations;
- Representatives of NGOs working in the area.

Aquatic Environment

For aquatic ecology the study area will also consider the wider geographical region, considering all channels, both drainage and irrigation, located on South of the Karavasta lagoon, between the village of Harstukas in the East and the river Seman in the West. Systematic surveys will take place over two field visits at 12 identified locations (see Figure 1); the first survey will take place during the dry season in early August 2020 and the second in the wet season end of October-November 2020.

In the course of this work, various types of surface waters will be investigated, including drainage channels (permanent and intermittent) and Irrigation channels (in the wider area of the project zone). The 12 locations for aquatic system will be 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 Karavasta Lagoon / River Seman, and other important water bodies and surrounding stream/rivers. The initial site visit will enable grouping as 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 area.

Survey will take 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 will 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 will be used.

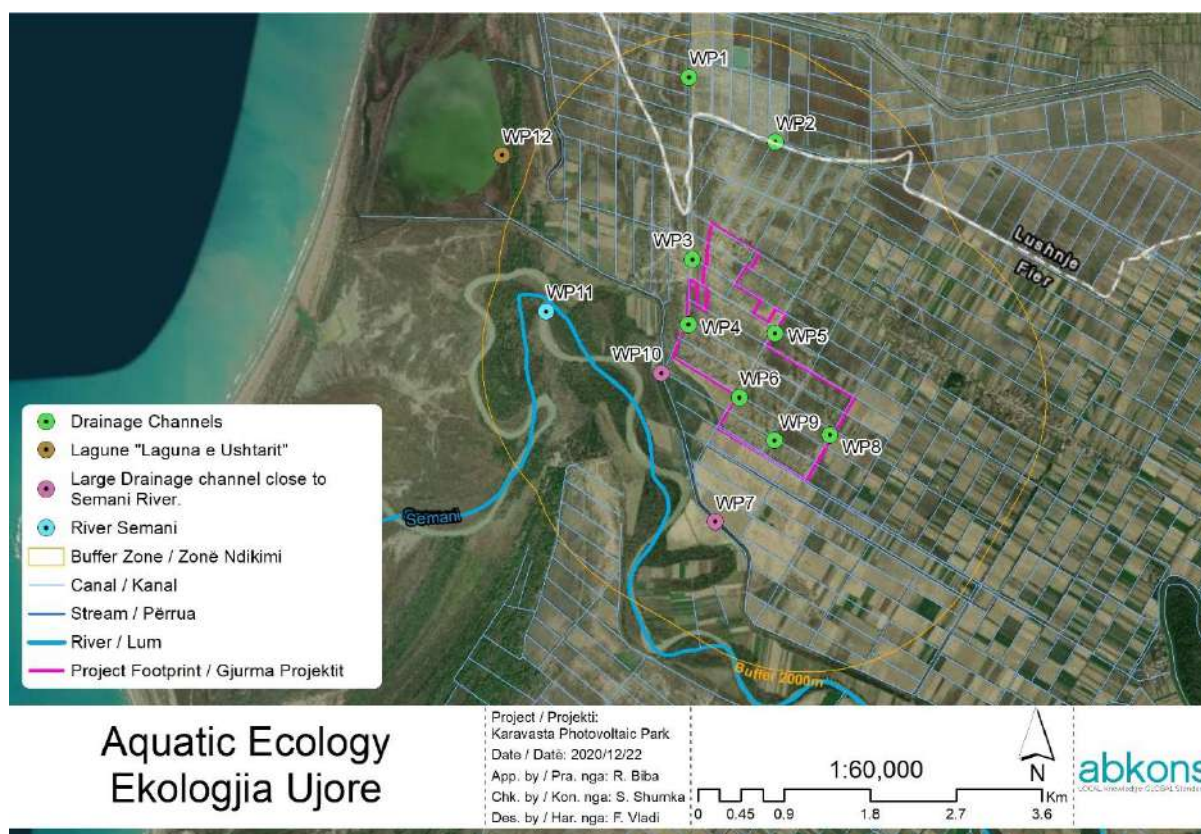


Figure 52: Aquatic Sampling locations in the Project Area and its surroundings

During the surveys the following components will be considered:

- Aquatic habitat assessment;
- Fish composition;
- Macrozoobenthos and
- Aquatic vegetation associated with surveyed habitats.

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

For fish composition a variety of nets will be 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 will 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 will 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, will 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 macrozoobenthos survey at each location two replicates of soft bottoms substrates will be sampled from a standard area of 400 cm² (two replicates). Samples will be preserved in a 4% formaldehyde solution. In the laboratory the fauna retained on a 1 mm-mesh sieve will be sorted and identified to the species level wherever possible.

Substrate will be classified according to Bain (1999) [mud (1), sand (2), gravel (3), pebble (4) and boulder (5)].

The assessment of submerged vegetation cover will 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 we will consult with the following bodies to obtain additional information and data:

- Sector of Policy and Strategy for Fishery and Agriculture Development in Ministry of Agriculture and Rural Development.
- FMO Divjake - Karavasta and local fisherman's.

Flora

For the flora baseline assessment a vegetation community map will be developed based on preliminary field work and existing secondary data. The extent and composition of vegetation types will 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 will be evaluated within 10 km radius of the project site.

The flora survey will focus on:

- ecological biodiversity (landscapes, ecosystems, habitats, Priority Biodiversity Features (PBF); and,
- organismal biodiversity (families, genera, and species) - beside species and families variability have to estimate 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 will be done according to transects from west (the sea shore) to east (towards the hilly area). To determine the diversity of flora and vegetation within the PV Project site area surveys will 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 marshroute method").

The flora site survey will be undertaken during the August 2020 across 30 survey plots over a 3 day period by an appropriately qualified ecologist.

The existing biodiversity features within the Project footprint and surrounding environs will be characterised, including the Priority Biodiversity Features (PBFs) and critical habitat-qualifying features. This process of prioritization will help 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 zone of influence.

Field reports based on a defined template will be completed, based on which a GIS maps will be produced. An inventory of flora, listing of rare, endangered, economically important and medicinal plant species will be prepared and their frequency, abundance and density determined with the field data, coordinates and photos of the survey findings.

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

- National Agency of Protected area, including staff of National Park;
- National agency of Environment (Forest Directorate);

- Agricultural University of Tirana (Diploma theses and PhD studies).

The baseline report will describe 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 will be given:

- a description of the current status of flora biodiversity in the project zone;
- a description of threats to flora biodiversity;
- identification of any High Conservation Value (HCV) areas that are important for biodiversity, e.g., protected areas, 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 will be recorded and provided.

The data shall be presented in summary tables, with Critically Endangered or Endangered 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 mapped.

Large-scale mapping showing sample site and 'priority' species record locations will be provided.

Habitat suitability for each 'priority' species recorded, an indication as to the abundance/population size and their distribution within the Project area will be described. We shall also provide contextual information about published 'priority' species status in the wider area and reported on geographic scale: around Divjaka-Karavasta National Park area, Albania and internationally.

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, will be identified. A Critical Habitat Assessment will be undertaken and prepared as a separate deliverable and a summary of the findings will be included within the ESIA. The Critical Habitat Assessment will assess against all 5 criteria, as required under PR6, as follows:

- I. highly threatened or unique ecosystems;
- II. habitats of significant importance to endangered or critically endangered species;
- III. habitats of significant importance to endemic or geographically restricted species;
- IV. habitats supporting globally significant migratory or congregatory species; or
- V. areas associated with key evolutionary processes.

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 the transmission route in the vicinity of the Fieri area 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; the proposed scheduling of these surveys is presented in Table 21 below. 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 “Area of Influence (Aol)”.

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

- Undertake site visit to hold community meetings and collect additional baseline data;
- Obtain available from the socio-economic data from the municipality of Fier and Divjaka;
- Site visit will also confirm the Area of Influence;
- 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 gathered from primary data gathering.
- 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 field observation will be carried out by sampling the population within the Aol. A preliminary geographic dispersion of the area will be done, based on:

- the population/habitants for each village;
- the village area (project affection in m²);
- coverage of the typology of land/plots/housing of all project area per each village (including land/pastures/farms/housing/living business areas etc.);
- the discovering of any points of interest – per each village.

Based on these elements, the field socio – economic survey will sample 377 questionnaires within the Aol. This sample size is based on the projections of the population in the 10 villages within the Aol; 2 villages potentially affected by the PV Plant, and 8 villages by the implementation of the OHL. This sample size leaves a margin of error of less than 5%, providing an accurate overview of the social and economic conditions of the population in the area, covering the following topics:

- Demographics
- Economy, employment and income
- Land use and ownership
- Infrastructure and Public Services
- Health and Education
- Vulnerability.

This quantitative survey will be integrated with qualitative survey, like Focus Group Discussions (FGD) and Key Informant Interviews (KII),

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. For the Project FGD with farmers and women will be organized in the affected settlements to discuss their perspective of the project and their socio – economic condition.

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.

Due to Covid-19 restrictions, community meetings cannot be organized, but the local population will be informed with distribution of leaflets prior to the commencement of the survey.

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).

If any crossing of the important receptors or critical habitats or key corridors, and migration corridors) it will require amendment or realignment of the proposed OHL route, and if not possible apply fair compensation.

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. Each day a different worksheet will be used to record waypoints and photos.

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.

Table 19: Planned Biodiversity survey schedule

Experts	Data to be Gathered	Extent	Timing												
			2020						2021						
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Flora and Habitat expert	Habitat Mapping; Habitat characterization - Species Composition of each habitat type; Identification of any CH-qualifying species / PBFs;	Project Development Area (PDA) and Area of Influence (Aol), transportation routes, any other key habitats in the surrounding landscapes													
		Proposed transmission line													
		New transmission line alternative													
Fauna and Bat Expert	Terrestrial Fauna and bats; Date type = presence / likely absence data; Habitat use; Roosting sites;	PDA and Aol, transportation routes, any other key habitats in the surrounding landscapes													
		Proposed transmission line and irrigation and drainage channels;													
		New transmission line alternative													
Bird Expert	Presence/absence of species	PDA and Aol, transportation routes, any other key habitats in the surrounding landscapes													
	Identification of any CH-qualifying species/PBF species;														
	Identification of any CH-qualifying species/PBF species; Identification of migratory species and	Proposed transmission line and irrigation channels;													
		New transmission line													

Experts	Data to be Gathered	Extent	Timing											
			2020						2021					
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
	CH-qualifying/PBF species and their habitats;													
Aquatic Expert	Identification of any CH-qualifying species / PBF's; Identification of migratory species;	PDA and Aol, transportation routes, any other key habitats in the surrounding landscapes, including irrigation and drainage channels.												
		New transmission line alternative												

Table 20: Additional biodiversity surveys and reporting

Additional biodiversity surveys and reporting														
Experts	Data to be Gathered	Extent	Timing											
			2020						2021					
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Breeding Bird Survey/Nesting Survey	Presence/ absence of species Identification of any CH qualifying species/PBF species	PDA, Aol, and Proposed transmission line.												End May – Early June, 2021
Migratory Birds	Identification of migratory species and CH qualifying/ PBF species;	PDA, Aol, and Proposed transmission line.											March – April/ Early May, 2021;	
Wintering Birds		Project Footprint Proposed transmission line												

Additional biodiversity surveys and reporting														
Experts	Data to be Gathered	Extent	Timing											
			2020						2021					
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Aquatic Survey - irrigation and drainage channels	Identification of any CH qualifying species / PBF's Identification of migratory species;	PDA, Aol, and Proposed transmission line, and connected irrigation channels;									(wet season)			
Terrestrial Fauna on Amphibians and Reptiles- refugia; Bats and other mammals?		PDA, Aol, and Proposed transmission line, and connected irrigation and drainage channels;											Spring, 2021	

Table 21: Environmental and Social Baseline Studies Schedule

Experts	Data to be Gathered	Extent	Timing											
			2020						2021					
			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 (Aol), transportation routes.												
		Proposed transmission line												
		New transmission line alternative												

Experts	Data to be Gathered	Extent	Timing														
			2020						2021								
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
Environmental and Socioeconomic Experts	Village Assessment and Infrastructure assessment, roads, crossings, settlements, safety issues, water supplies, wastes, irrigation, etc.	PDA and Aol, transportation routes, any other sensitive habitat/ area															
		Proposed transmission line															
		New transmission line															
Environmental, Soil Quality and Land Use/Cover Expert	Assessment of land use and cover, including landscape.	PDA and Aol, transportation routes, any other key receptors in the surrounding landscapes															
	Investigation of the physio-chemical properties of the soil in the study area.	Proposed transmission line and irrigation channels;															
	Soil quality measurements will be performed by an accredited laboratory.	New transmission line															
Geology Expert	Assessment of the geology in the study area	PDA and Aol, transportation routes, any other key receptors in the surrounding landscapes, including irrigation and drainage channels.															
		New transmission line															

Experts	Data to be Gathered	Extent	Timing													
			2020						2021							
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun		
Groundwater and Surface Water Expert	<p>Assessment of groundwater and surface water patterns and existing conditions.</p> <p>Water quality measurements will be performed by an accredited laboratory.</p>	PDA and AoI, and any other key receptors/ area that might be influenced by the project														
Environmental Expert/ Air Quality	<p>Identification of locations and sensitive receptors. (i.e., nearby households, schools, settlements, etc.). Air quality measurements for PM and gases.</p> <p>Measurement will be performed by an accredited laboratory.</p>	PDA and AoI, and any other key receptors/ area that might be influenced by the project														
Environmental Expert/ Noise	<p>Identification of locations and sensitive receptors. (i.e., nearby households, schools, settlements, etc.). Noise level measurements.</p> <p>Measurement will be performed by an accredited laboratory.</p>	PDA and AoI, and any other key habitat/ area that might be influenced by the project.														

Experts	Data to be Gathered	Extent	Timing												
			2020						2021						
			Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Cultural Heritage Expert	Performing baseline field surveys for cultural heritage sites, monuments and other objects with archaeological values.	PDA and Aol, 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 or
- 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 22 below.

Table 22: 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 23. 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 23: 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; for example planned 110 kV line from Fier Substation to Hoxare, pomegranate farm and other solar projects in the area (full list of projects can be found in Appendix II); 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 24. 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 24: 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	<p>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.</p> <p>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.</p>
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 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	<p>The methodology used to assess the impacts of the Project on the bio-physical, terrestrial and socio-economic environment will be summarised.</p> <p>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.</p>

Chapter Number	Content Heading	Explanatory Note
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:

- Divjakë- Karavasta National Park;
- 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;
- Sensitive ecological habitats that lie along the OHL route, such as Seman river, old riverbeds, pine forests, etc
- Abandoned bunkers located within the PV Project site and along the OHL route;
- Residential dwellings within 500 m of the OHL route and/or PV Project site;
- The nearby villages of Hasturkas and Ndërnenas (respectively 800 m and 1,500 m to the east of the PV Project site area);
- Grazers using the PV Project area;
- Farmers 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:

- Grazers using the PV Project site 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
- Municipalities of Fier and Divjake
- Regional Environmental Directorate
- Drainage Board.

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:

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Appendix I. Scoping Checklist

Table 25: Scoping Checklist³⁵

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. 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

³⁵ 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?
1.8	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	
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	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?
	or infrastructure leading to changes in traffic movements?			
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
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	

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?
1.31	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	

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?
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	
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	Minor significance – Potential contamination of the environment in case of accidental and/or unplanned events. Potential contamination from non-proper management of hazardous wastes.

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?
			Albanian Waste Classification Catalogue”, amended.	
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 including storage or transport?	Yes	Emissions from road transport during construction	Not significant. The impact will be short term. Potential receptors are located more than 1km from the site.
5.4	Emissions from construction activities	Yes	Emissions from road transport during construction	Not significant and temporary. Mitigation

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 plant and equipment?			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.

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?
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 effluents (whether treated or untreated) to water or the land?	Yes	During construction phase will be generated wastewater effluents 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.	Not significant. The main concern is during 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

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?
				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 and riverbank erosion along Seman River. The proposed hydropower 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 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	

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?
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 Divjaka as part of the project construction.	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.: <ul style="list-style-type: none"> • supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) • housing development • extractive industries 	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?
	<ul style="list-style-type: none"> • supply industries • 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	<p>Will have visual effect along with other transmission lines.</p> <p>May have cumulative effect on bird due increasing number of wires</p>	Mitigation measures for bird protection will be proposed.

Appendix II. Projects being developed in the area

Pomegranate Farm

Near the village of Karavasta e Re, at approximately 1,2 km from the PV Plant has started the development of a Pomegranate and Goji Berry Farm. The Project is being developed by the Company “Agro – Iliria” as a strategic investment in the Karavasta – Seman Area in state land property. The area planted so far is extended for 135 Ha (Map attached) with the intention of an extension up to 800 Ha.



Figure 53: Location of the Agro - Iliria Plantation

Other Photovoltaic projects in area

The area where the Karavasta PV Park will take place is one of the areas with the highest radiation in Albania. Starting from 2015, various companies have applied to the Ministry of Energy and Infrastructure to obtain the necessary licenses for the use of solar energy in the area. Most of the projects are locally invested and with a small capacity, about 2MW. While recently (2018-2020) are being applied and large areas with capacities around 50MW; the largest one is Karavasta PV Project (Project of this study) with capacities 140 MW.

Table 26: Photovoltaic projects in initial procedures of licenses in area

Project name	Capacity	Operation years	Location	Owner
“LM ENERGY CORPORATE” sh.a. ³⁶	50 MW	20 years	Sheq Marinas, Topojë, Qarku Fier	“LM ENERGY CORPORATE” sh.a.
“OSOJA ENERGY” SH.P.K ³⁷	2MW	20 years	Seman - 1, Sheq-Marinas	“OSOJA ENERGY” SH.P.K
Euron Solar	50 MW	-	Njesia administrative	Euron energy sh.p.k

³⁶ <https://www.infrastruktura.gov.al/wp-content/uploads/2019/02/Njoftim-online-per-aplikimin-e-shoqerise-LM-ENERGY.pdf>

³⁷ <http://www.akbn.gov.al/wp-content/uploads/2019/05/Renewable-Energy.pdf>

Project name	Capacity	Operation years	Location	Owner
			Dermenas/ Fushe Pelvece, Fier	

Company that obtained the licenses are described below in Table 27.³⁸

Table 27: Licensed Photovoltaic Power Plant

Company Name	NUIS	License		ERE Board Decision		License expiry date	Photovoltaic Power Plant	Installed Capacity [MW]
		No.	Series	No.	Date			
"AGE SUNPOWER" sh.p.k	L73015 401Q	403	P18 K	85	20.04.2018	20.04.2038	Topojë (Sheq Marinas), Fier	2
"SEMAN SUNPOWER" sh.p.k	K81722 018P	404	P18 K	86	20.04.2018	20.04.2038	Topojë (Sheq Marinas), Fier	2
"SEMAN1SOLAR" sh.p.k.	L81416 014O	408	P18 K	11	14.05.2018	14.05.2038	Seman-1 (Sheq Marinas), Fier	2
				19	**30.08.2018.			
"SEMAN2SUN" sh.p.k	L73629 401M	409	P18 K	11	14.05.2018	14.05.2038	Seman – 2, Sheq Marinas, Fier	2
"SONNE" sh.p.k	L73015 405C	411	P18	11	04.06.2018	04.06.2038	Topojë	1.998
"AED SOLAR" sh.p.k	L73014 403E	412	P18	12	04.06.2018	04.06.2038	Topojë	1.998
"SMART WATT" sh.p.k ³⁹	L72320 013B	440	P19	72	10.05.2019	10.05.2044	Sheq Marinas, Topojë, Qarku Fier	2
"ES 2019" sh.p.k	L92801 402B	444	P19	87	31.05.2019	31.05.2044	Lugani, Sheq Marinas, Qarku Fier	2

³⁸ Information taken by ERE/ <https://www.ere.gov.al/index.php?lang=2>

³⁹ <http://infrastruktura.gov.al/wp-content/uploads/2018/04/Njofitim-online-smartwatt.pdf>

Appendix III. Summary of Stakeholder Meetings

Table 28: Summary of Stakeholder meetings during Scoping phase

Stakeholder's Name	Issues, concerns and suggestions raised during the meetings				
National Stakeholders					
Ministry of Tourism and Environment	The investment is very important for Albania in terms of economic development and energy sector and has an added value because is friendly with environment.	Stakeholder engagement is important especially with the local community. With regard of the local community the company should consider some potential investments in the area. The company will be for a long time present in the area and in this context the local community should be considered as a partner.	This project is covered by annex 1 and categorized for the in-depth ESIA The developer should organize the public hearing in coordination with the National Agency of Environment and Regional Agency of Environment. All the comments should be included in the ESIA.	The project is nearby a protected area, the implementation should be in harmony with the biodiversity in the area in order to protect as much as can the flora and fauna. The monitoring and survey process should provide detailed information not only for the ESIA process but also to identify potential impacts, take mitigation measures and be considered by the company during the project lifecycle	Regarding the engagement with the national and/or local NGO the developer can request information to the MTE and we can provide a full contact list of the active NGO's.
National Agency of Protected Areas (NAPA)	Even though the PV plant is outside the protected area this project might have impacts since is nearby the National Park.	Full support from NAPA for this project, since Albania depends on the energy produced by Hydro Power Plants.	Engagement with the Regional Administration of Protected Areas is needed.	Reflection of the panels might confuse the birds and is one of the main impacts that need to be mitigated.	
National Territorial Planning Agency (NTPA)	Approved general development plan of Fier municipality in 2016 is available on the website of the	Detailed Plan of the National Park of "Karavasta" is in process.	All the Local Development Plans and the Strategic Environmental Evaluations are available	Nearby the project area there are some agritourism plans not approved yet (request information from Albanian Investment	Changes of the borders between the Municipality of Fier and Divjakë approved

Stakeholder's Name	Issues, concerns and suggestions raised during the meetings				
	National Territorial Planning Agency		at the NTPA website	Development Agency)	through DCM no 360 dt.22/05/2019 which can be consulted for border definition of the Project
Ministry of Infrastructure and Energy (MEI)	Check the Timeline of the ESIA process and constrains due to the EBRD requirements that might delay the process.	Check the transmission line of 220 KV with OST, since there is a project by the World Bank for a transmission line coming from Greece and Macedonia that will be connected in the same substation and this substation might not be able to hold also the energy produced by the PV plant	The ministry will need a detailed calculation of the PV plant in order to check and maintain the production figures as per the contract signed.	Considering that the project is nearby the National Park of "Karavasta" we suggest a close collaboration with the Regional Administration of the Protected Area.	We suggest the developer to closely manage and mitigate the impact that the panels that need to be changed will be managed and transported
Ministry of Agriculture and Rural Development (MARD)	In 2016 there was a project financed by the World Bank for improvement of drainage channels in the project area. The Project has to be careful not to impacts the drainage and irrigation system	Project to check the possibility of using the land of 190 Ha for grazing purposes if there is the chance	Developer to avoid and/or to minimize the impact of waste management and environment accidents, hazardous discharging	Project to check the vicinity of implementation with inhabited areas and minimize impacts	Ministry of Infrastructure and Energy is the initiator and responsible for the land acquisition process
Ministry of Culture and National Institute of Cultural	The archaeological Permit shall be applied through the online	There will be an expert appointed by the Ministry that will be on site for monitoring which might be	The archaeological report shall be developed by	The transmission line and PV Plant ESIA shall be part of the same study and application.	ESIA shall include a general study of the cultural heritage in

Stakeholder's Name	Issues, concerns and suggestions raised during the meetings				
Heritage (IKTK)	application process.	during the same period of the survey of developers' licensed expert	a licensed archaeologist There is no need of engaging the regional directory of cultural heritage.		the area, aside of the in-depth archaeological survey that will be carried out by a licensed archaeologist
National Environment Agency (NEA)	Apply directly for starting the procedure since you are aware that the project is categorized for in-depth EIA	Refer to the Decision of the Council of Ministers DCM 714 (amended) for the online application and timeline	The application for public hearing can be submitted after the National Agency of Environment response for the EIA categorization	There is no need for identification of the land plots affected by the transmission line	Upload in the online application the ownership documents for the PV Plant
National Agency of Natural Resources	Albania is depending from the energy produced by the hydro power plants. In this context the energy produced by the PV plant should enter in the system to compensate the energy produced by the Hydro power plants.	This project is welcomed in terms of energy production but might present some concerns of environmental issues, since is located nearby the National Park	Maybe all the area where the PV plant is located, should be oriented in the Solar energy production due to the salinity of the land plots		
Transmission System Operator (OST)	PV plant and overhead transmission line should be part of the same ESIA	The Project and the developer have the full support of the OST for the project implementation	Expect that the project will have minor impacts to the environment	During the process of public consultation for the transmission line with regard to land acquisition and ESIA process, OST shall be invited and	

Stakeholder's Name	Issues, concerns and suggestions raised during the meetings				
				be present in the meeting/s.	
NGOs – Civil Society	The developer to check the source of the water that will be used for the Projects' needs	Monitoring of the species to be performed usually during the Spring season	Avoid the cleaning of the solar panels with hazardous products or mitigation measures to minimize the impact	Use of signs to avoid the crashing of the birds with the transmission lines which is very efficient and low-cost Migratory birds' route near the project area to be kept under observation	Possibility to make comments and suggestions to the Scoping report once published and in the future phases
Regional and Local Stakeholders					
Regional Administration for the Protected Areas (RAPA)	There are some projects planned in the area that might cause cumulative impacts: <ul style="list-style-type: none"> • ENDIEF panels within the national park (not approved) • Agriculture project nearby the National Park • PV plant nearby the Voltalia project (not approved) 	Mirror effect impacts the birds so should take mitigation measures The land is considered unproductive, but for the park is an asset that is used by different species	The project area is visited by the "sea barn swallow" that is a protected species. Transmission line could affect the birds (crash to the lines). Take mitigation measures	There is a migratory route for the birds in the project area. Developer should keep under observation the movement of different species within the project area during operation	Developer should engage with Bird Life (NGO) in the consultation process There is a proposition to extend the actual area of the National Park of Karavasta, but does not include the project area
Regional Agency of Environment, Fier Region	Apply directly for starting the procedure since you are aware that the project	Refer to the DCM 714 (amended) for the online application and timeline	The application for public hearing can be submitted after the National		

Stakeholder's Name	Issues, concerns and suggestions raised during the meetings				
	is categorized for in-depth EIA		Agency of Environment response for the EIA categorization		
Drainage Board	The Primary drainage and irrigation channels are managed by the Drainage Board	Secondary channels are managed by the municipality Tertiary channels are managed by the farmers	Primary channels have restriction area of 8 m by each side that is used to clean the channels.	Secondary channels have restriction area 4 m by each side that is used to clean the channels.	The pumping station for the drainage of the area need improvement, however there were no flooding events in the last 30 years.
Prefecture of Fier Region and Regional Council of Fier	Considering that the project is nearby the National Park, we suggest close collaboration with the Regional Administration of the Protected Areas.	The Project has the full support of the institution to facilitate the project implementation			
Municipality of Fier	The project has the full support of the Municipality	No permits needed by the municipality for this project since is approved directly by the National Council of Territory.	The developer should engage and coordinate with the local Administrative Unit		
Municipality of Divjakë	The project has the full support of the Municipality	The investment is very important for Albania in terms of economic development and energy sector	Considering that the project is nearby a protected area, we suggest a	70 % of the land covered by the PV plant is under the administration of Divjakë municipality	The secondary channels are maintained

Stakeholder's Name	Issues, concerns and suggestions raised during the meetings				
		and has an added value because is friendly with environment.	meeting with the Administration of the Protected Areas.		by the municipality
Libofshë Administrative Unit, Municipality of Fier	The project has the full support of the local Administrative Unit	With regard of the local community the company should consider some potential investments in the area	The developer should check the possibility of employment of the local people during project implementation and operation	The developer should engage and coordinate with the Heads of the villages affected, since they are an important connection to the communities	
Communities in the Area of PV Plant	Positive attitude towards the Projects, seen as an opportunity for the development of the area	Land in the area is mostly saline with sporadic areas used as grazing land and nearly 5 Ha used for cultivation of annual crops	The developer should check the possibility of employment of the local people during project implementation and operation	Possibility for the project to make social investments in the area or infrastructure development	Avoid the implementation of the Project during harvesting period in May – June or minimize the impacts related to this topic