voltalia

Non-Technical Summary of Environmental and Social Impact Assessment (ESIA)

130 MWp solar photovoltaic (PV) plant project in Menzel Habib in the governorate of Gabes

Environmental Assessment & Management

November 2025

REPORT: **Non-Technical Summary of Environmental and Social Impact Assessment (ESIA) for the 130 MWp solar photovoltaic (PV) plant project in Menzel Habib – Gabes - Governorate of Tunisia**

PREPARED BY: Expert in flora, fauna and herpetology: Said NOUIRA
Ornithology expert: Nabil HAMDI
Archaeology specialist: Mohamed Riadh HAMROUNI
Health and safety specialist: Oussama DOUZI
Cartography and geomatics specialist: Asma DOUZI
Engineers and environmentalists: Insaf CHRIKI, Khouloud MAALAOUI, Nour El Houda ZAYANI and Anis RIAHI.

CONTROLLED BY: Project Manager and International Environmental Expert:
Tahar KHOUAJA

VALIDATED BY: EAM General Manager and Environmental & Social Specialist:
Raja KHOUAJA

VERIFIED BY: Voltalia

REVISION OF THE REPORT		
DATE	**VERSION**	**REFERENCE**
25th September 2025	00	First report
03rd November 2025	01	Final report

Table of contents

List of figures

List of tables

ACRONYMS & ABREVIATIONS

AC	Alternating Current
ANPE	National Agency for Environmental Protection
BMP	Biodiversity Management Plan
BV	Watershed (Bassin Versant)
CEFP	Critical Ecosystem Partnership Fund
CH	Critical Habitat
DC	Direct Current
E&S	Environmental and Social
EAM	Environmental Assessment and Management
EBRD	European Bank for Reconstruction and Development
EES	Environmental and Social Standards
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
EPRP	Emergency Preparedness and Response Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESR	Environmental and Social Requirements
GHI	Global Horizontal Irradiance
GRM	Grievance Redress Mechanism
HEC-RAS	Hydrologic Engineering Centers River Analysis System
HR	Human Resources
HSE	Health, Safety, and Environment
HTA	High Voltage A (30 to 50 kV)
HTB	High Voltage B (> 50 kV)
HTM	Medium-High Voltage (between HTA and HTB)
IEC	International Electrotechnical Commission
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
kV	Kilovolt
kVA	Kilovolt-ampere
kW	Kilowatt
kWh/m²	Kilowatt-hour per square meter
LILO	Loop-In Loop-Out
LTIFR	Lost Time Injury Frequency Rate
MIME	Ministry of Industry, Energy and Mining
MSK	Medvedev–Sponheuer–Karnik (seismic intensity scale)
MW	Megawatt
MWp	Megawatt-peak (maximum capacity of a PV system)
NDVI	Normalized Difference Vegetation Index
NTS	Non-Technical Summary
NT	Near Threatened
ODR	Occupational Disease Rate
OHS	Occupational Health and Safety
PBF	Priority Biodiversity Features
PPE	Personal Protective Equipment
PPAs	Power Purchase Agreements
PS	Performance Standards (IFC)
PV	Photovoltaic

QR Code	Quick Response Code
RN	National Road
RoW	Right of Way
SEP	Stakeholder Engagement Plan
SNCFT	Tunisian National Railway Company
STEG	Tunisian Electricity and Gas Company
TL	Transmission Line
TS	Transformer Station
VU	Vulnerable

1 INTRODUCTION

As part of its energy transition strategy, Tunisia has set itself the target of achieving a share of renewable energies in the electricity mix of 35% by 2030 and 50% by 2035. This will result in the installation of a total functional renewable capacity of 4,850 MW by 2030 and 8,350 MW by 2035 using photovoltaic and wind.

Voltalia (hereafter referred to as "the Developer"), was awarded in December 2024, an Agreement for the development of a 130 MWp Photo Voltaic (PV) Solar power plant in the governorate of Gabes hereafter referred to as "the Project" or 'PV Plant Menzel Habib'. Voltalia was selected after an international competitive call of tenders launched by the Government of Tunisia under the reference AO-01-2022, represented by the Ministry of Industry, Energy and Mining (MIME).

The Developer aims to finalize the project financing by December 2025 and to start construction of the solar PV plant in January 2026, with a planned duration of 18 months. The estimated commissioning date of the solar PV plant is June 2027.

This document is the Non-Technical Summary (NTS) of the Environmental and Social Impact Assessment (ESIA) has been prepared in accordance with the International Finance Corporation (IFC) of the World Bank Group including the IFC Performance Standards (2012 edition) and Environmental Social Policy (ESP - 2024) of the European Bank for Reconstruction and Development (EBRD).

1.1 Project Categorisation

In accordance with the **IFC's** environmental and social project categorisation, the solar PV plant project could be classified as **Category B**, which corresponds to commercial activities with limited potential environmental and/or social risks and/or impacts that are few in number, generally site-specific, largely reversible and easily addressed by mitigation measures.

In accordance with the **EBRD's** Environmental and Social Policy (2024), the solar PV plant project could be classified as **Category B**, which corresponds to projects that may cause environmental and/or social impacts that are generally limited to a specific site and/or can be readily identified and mitigated by appropriate and effective measures.

The ESIA and its associated documentation (ESMP, SEP and NTS) for Category B projects will be disclosed for **30 calendar days** prior to the project's review by the Board of Directors.

2 PROJECT DESCRIPTION

2.1 Project location

2.1.1 Solar PV Plant and 225 kV transmission line (200 m) location

The Project site is located within Gabes Governorate in the delegation of Menzel Habib, and within El Mehemla sector. The nearest community to the project site is El Mehemla, located 2.3 km to the north. Menzel Habib lies 11 km away, while the city of Gabes is situated 70 km from the solar PV plant.

The project also includes the construction of 200 m of transmission line (including 3 pylons) located south of the solar PV plant, designed to evacuate the electricity generated to the existing 150 kV transmission line linking Bouchamma to Mdhilla substations (140 km), through a LILO (Loop-In Loop-Out) connection. Although, the Developer will undertake reinforcement works to upgrade its voltage from 150 kV to 225 kV.

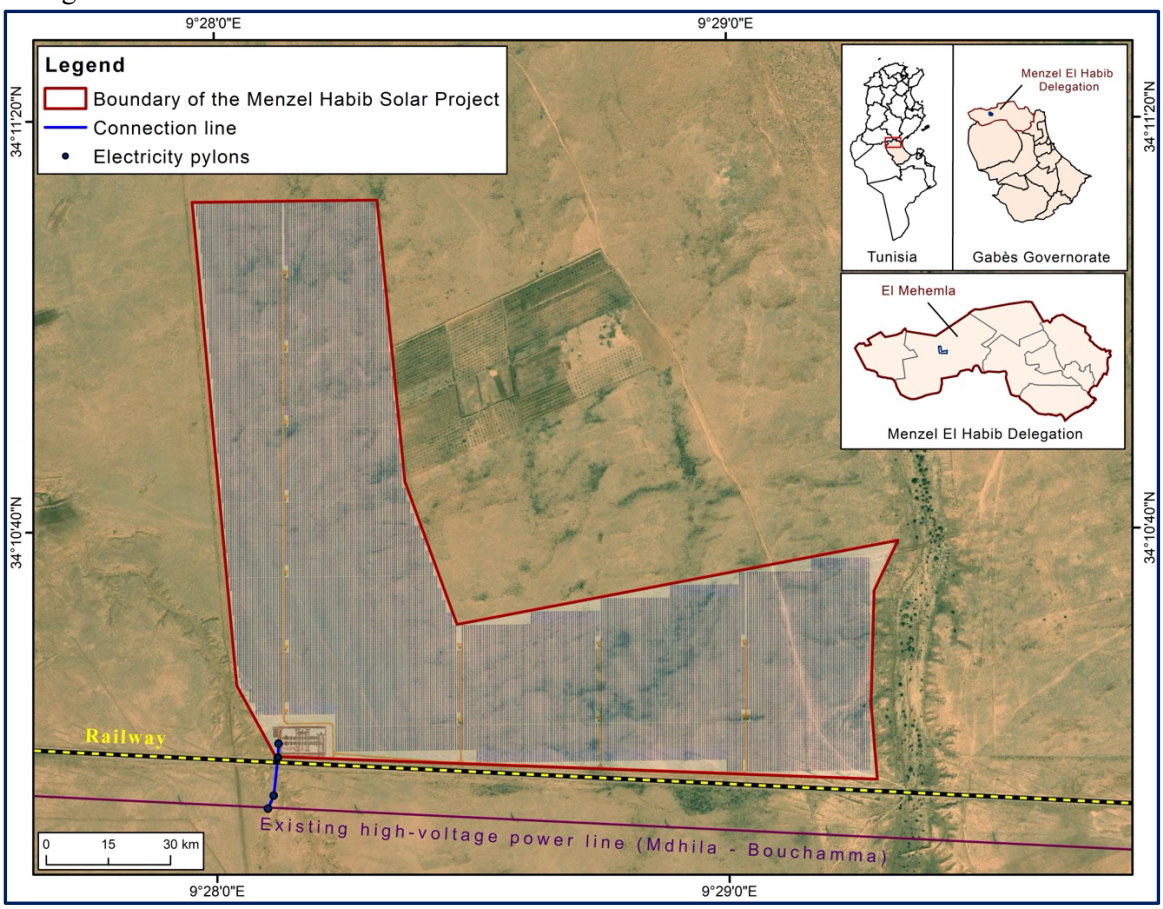

Figure 2.1 - Administrative map of the study area

The construction and operation of the solar PV plant will be carried out on uncultivated and un-inhabited land. The land is under private ownership and covers an area of 200 hectares of which only 175 hectares will be used for the project. The land is being leased to one landowner under a *willing lessee, willing lessor* arrangement.

The site is generally flat, accessible from the nearby national road of RN15 following by an access track of approximately 4 km. The land is currently used for grazing, tended by herder employed by the landowner to look after livestock on the property. No informal grazing activities are undertaken in the solar PV plant.

The immediate vicinity of the solar PV plant is surrounded on all four sides (north, east, west and south) by agricultural plots.

The vicinity of the solar PV plant is provided below:

- North:
  - El Mehamla village is located approximately 2.3 km from the site. The village includes a school, a healthcare center, and a mosque
  - Sebkhet Sidi Mansour approximately 3.2 km away
- Est of the Site: agricultural activities (land used for olive trees)
- South of the solar PV site (approximately 200 m):
  - Railway line for the transport of phosphate from Gafsa to Gabes. It runs along the southern part of the site for approximately 1.9 km. It is built on an embankment, with a height exceeding three metres in some places. Several level crossings have been built to allow cars and pedestrians access. Hydraulic structures have also been installed under the railway line. It is important to note that, although several level crossings exist in the vicinity, none are located within the boundaries of the solar PV plant. Similarly, no hydraulic infrastructure is present on the site, and the project will not involve any modifications to existing hydraulic structures
  - A seasonal dry Oued runs near the southern part of the site
  - Existing 150 kV transmission line (140 km) linking Bouchamma to Mdhilla.

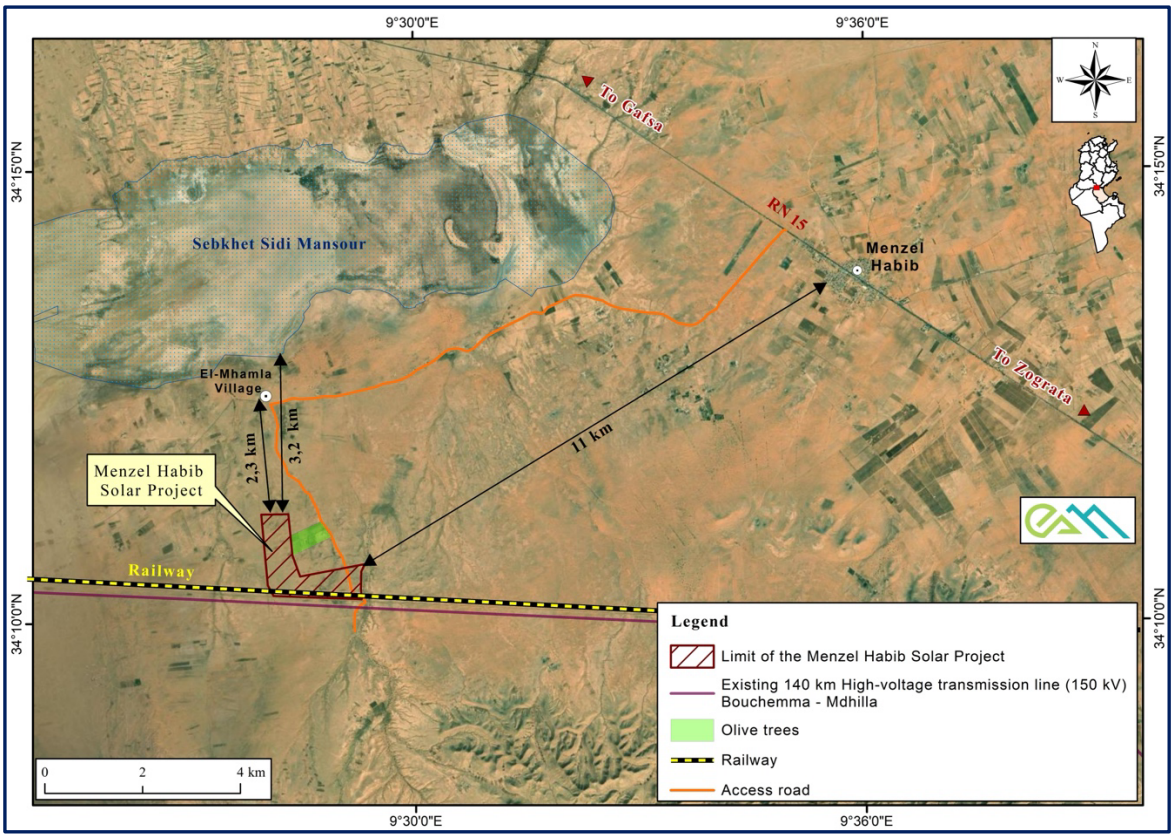

Figure 2.2 - Vicinity of the solar PV plant

The existing infrastructures and road connections are illustrated below:

Figure 2.3 - Transmission line Bouchama – Mdhilla (150 kV) and railway located south of the solar PV plant

2.1.2 Location of the existing 150 kV transmission line Bouchamma – Mdhilla

The existing transmission line is a single-circuit line extending over 140 km between the Bouchamma and Mdhilla substations. It has been operated by STEG for more than 40 years.

The route of this TL crosses two governorates:

- Gabes Governorate, over a distance of 82 km passing through the delegations of Gabes Ouest, Ouedhref, El Hamma, Metouia and Menzel Habib;
- Gafsa Governorate over a distance of 58 km passing through the delegations of Belkhir, El Guettar and Mdhilla.

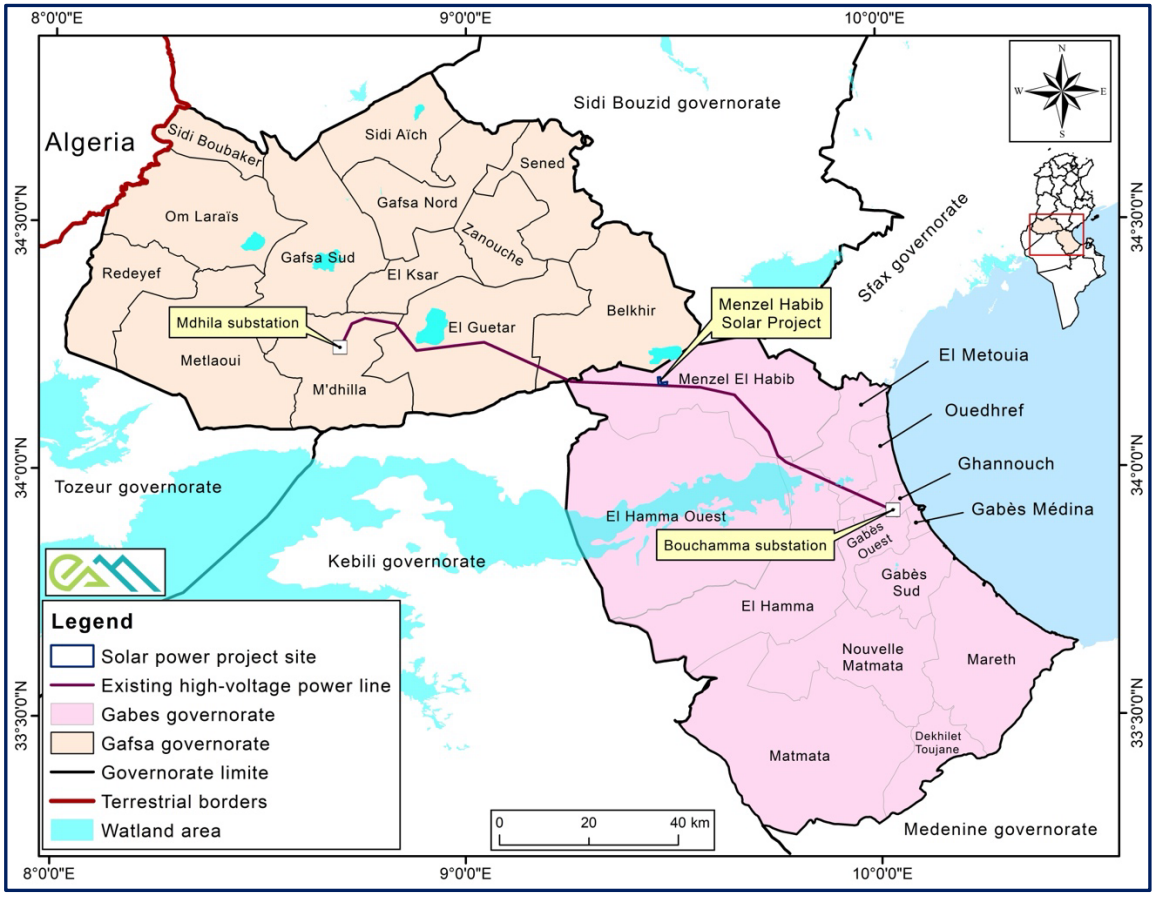

Figure 2.4 - Administrative map of the existing 150 kV transmission line Bouchamma and Mdhilla

2.2 Description of the Project components

2.2.1 PV solar plant

PV solar cells convert solar energy (radiation from the sun) into electricity using semiconductors (photovoltaic material that exhibit the photovoltaic effect); following the exposure of the PV panel to light, voltage is created in the material as photons from sunlight excite electrons in those materials into a higher state of energy, allowing them to act as charge carrier for an electric current. Solar cells produce Direct Current (DC) electricity from sun light, which can be used for grid connected power generation. However, electricity at the grid is usually in a different form (known as Alternating Current (AC)) and thus inverters are used to convert the DC current to AC current. In addition, cells produce electricity at a certain voltage which must be matched to the grid it connects to. Therefore, transformers are used to convert the output from the panels to a higher voltage that matches the grid.

The table below provides a summary of the key project components for the 130 MWp Project, along with a detailed description of each of those components to follow. It is important to note that following information is based on preliminary data and design details provided by the Developer.

Table 2.1 - Main components of the solar PV plant

Component	Description
Project Generation Capacity	130 MWp
Project area	200 hectares (175 hectares for the PV Plant)
Module	Panel type: N-type TOP with double-sided double glazing Number of panels: 183,120

Component	Description
	Power: 710W
Table	Modules per table: 28 Number of tables: 6,540
Tracking system	Single-axis tracker with a tilt angle of up to 60°. Tracker structures: Single row with single axis. Piles approximately 1.5 m deep
Transformer station	Type: TS9000-EL MV STATION Number of transformers: 14 Power: 9000 kVA
Inverters	Type: TS360KTL-HV-C1-V2. Number of inverters: 336 Power: 360 kVA The trenches for the DC cables will be dug to a depth of 700 mm below ground level, in accordance with IEC 60364-5-52.
Substation (on site) 33/225 kV	The substation comprises a high-voltage circuit breaker, two high-voltage/medium-voltage transformers, a medium-voltage switch room comprising a medium-voltage feeder relay, a control building, auxiliary medium-voltage/low-voltage transformers and a diesel generator set for emergency power, as well as all associated equipment.
Utilities	Warehouse and maintenance workshop Administrative building 15 m³ drinking water ^{tank}
Connection to the solar PV plant	The electrical energy produced by the solar PV plant will be evacuated via a connection to the existing Bouchamma–Mdhilla transmission line, via a new transmission line of 200 m and using a LILO (Loop-In Loop-Out) connection. To ensure efficient energy evacuation, this existing line will be reinforced and upgraded to a voltage of 225 kV

*At the time of purchase, more efficient modules may be available, in which case the total number of modules may be reduced, and consequently the number of tables and trackers will also be reduced.

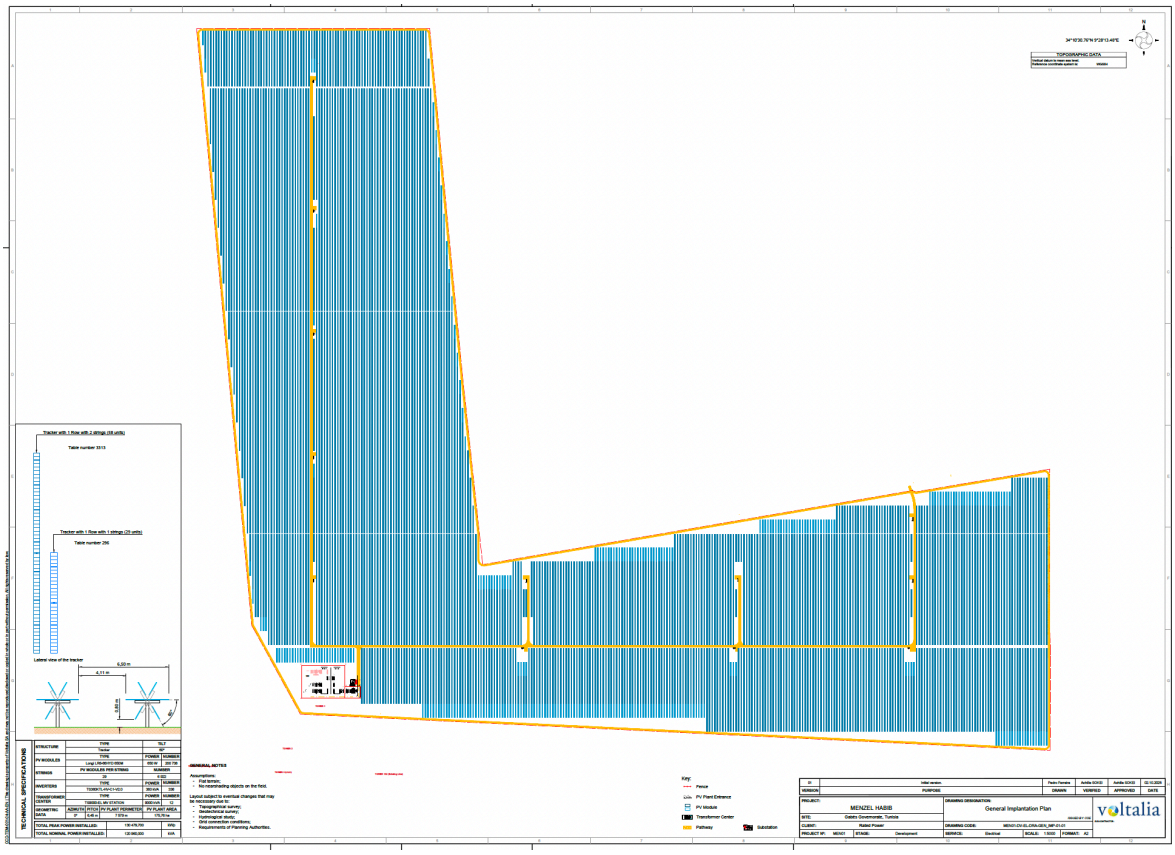

Figure 2.5 - Layout plan for the 175-hectares of the solar PV plant

2.2.2 Dimensions of the new 225 kV transmission line (200 m)

The transmission line is expected to require approximately three pylons along its 200 m length. . The footprint of the pylons is between 120 and 400 m² each as this, depending on the final design and type selected. All pylons will be installed on private land leased from the same landowner as the solar PV plant, under a willing lessor–willing lessee arrangement; therefore, no land expropriation will be required. The construction of the transmission line will fully comply with STEG's design standards including criteria for minimum spacing:

(i) Minimum above-ground heights

Table 2.2 - Minimum above-ground heights

Description by category		Minimum height to be respected above ground- 225 kV
Ordinary terrain (ground surface)		8m
Crossings of roads accessible to vehicles	Common road	9m
	High-traffic Road	10 m
Other crossings	Plantations (olive trees, citrus trees, etc.)	9 m
	Railway lines	11 m
	Telecommunication line	5 m
	HTM transport / HTA transmission line	-
	HTB transport / HTB transmission line	-

(ii) Minimum distances from houses / dwellings

For 225 kV high voltage lines, the horizontal distance measured from the line axis to the dwellings shall be at least equal to the following values:

Table 2.3 - Minimum distances from houses/dwellings

Description	Minimal distance
Immediate vicinity of Conductors	30 m
Immediate vicinity of the Towers	Height of the tower

It is important to note that the alignment of the transmission line was carefully selected to avoid any dwellings. No habitation is in the vicinity of the line.

(iii) Minimum distances to roads

- A minimum distance of 40 m between the towers and the axes of agricultural roads.
- A minimum distance of 50 m between the towers and the axes of the classified roads.
- A minimum distance of 65 m between the towers and the axes of the highway.
- A minimum distance of 200 m between towers and road intersections.

For safety reasons during the unrolling works, the constructor must locate the anchoring towers at a distance (d)≥ 150 m from classified roads

(iv) Minimum distances between pylons and Railway lines

- A minimum distance of 30 m between the pylons and Railway lines.

(v) Right of Way

- Electricity transmission and distribution projects require a RoW to protect the system from windfall, contact with trees, branches, utilities, buildings, and other potential hazards that may result in damage to the system, or power failures, and to maintain public safety.
- The minimum distance to be respected from the immediate vicinity of conductors is 30 m on each side.

2.2.3 Description of the upgrading works for the existing 150 kV transmission line (140 km)

The Developer will undertake upgrading works to increase the nominal voltage of the transmission line from 150 kV to 225 kV. This upgrade will involve replacing the existing glass insulators with composite insulators suitable for the new 225 kV voltage. It should be noted that STEG will remain responsible for operating the line.

The upgrading of the existing line is scheduled to take place over a period of one to two months, between October 2026 and March 2027. The works will primarily involve replacing the glass insulators with appropriate composite insulators, using a cherry picker. A dedicated team of approximately five workers will be mobilized for the task, with access to the pylons facilitated through existing tracks.

The main activities planned are as follows:

- Inspection of the pylons.
- Dismantling of existing insulators without altering the main structures.
- Installation of new composite insulators designed for 225 kV lines.
- Electrical compliance tests: post-intervention tests to validate the line's performance at the new nominal voltage.

2.3 Project phases

The Project will be developed in a three-phase sequence:

Planning & Construction Phase (18 months)

Construction activities are scheduled to begin in January 2026, with a construction phase lasting 18 months. Based on the Developer similar project, the peak workforce during construction is expected to be 450 and comprise skilled employees (EPC contractor) and unskilled workers to be recruited from the local community.

The non-local workforce will be accommodated in a worker camp, or hotel facility in the region. The type and location of the facility used will be made by the EPC contractor.

Operation Phase (25 years)

This includes activities to be undertaken by the Project Operator. Activities expected to take place mainly include the normal daily operation of the PV Plant and the routine maintenance activities of the PV Project (e.g. PV module cleaning, inverter servicing, checks on structural integrity, storage and disposal of broken PV panels, etc.). Commercial operation of the Project is expected to commence in June 2027 and continue for a period of 25 years according to the Power Purchase Agreement (PPA), after which the project will be handed over to STEG.

Decommissioning Phase

After 25 years, the project is expected to be transferred to STEG, who will own the Project and be responsible for the next steps which may include rehabilitation of the site and replacement of the panels, complete decommissioning, or another option.

3 PROJECT ALTERNATIVES

Several factors were considered by the Developer to ensure that an optimal location was chosen for the development of this solar photovoltaic project, including:

- Growing electricity demand in the study area: Improving grid stability by reducing voltage drops.
- Proximity to the existing 150 kV transmission line: the solar PV plant is served by an existing 150 kV transmission line, which will be used to transmit the energy produced.
- Good solar radiation: The Menzel Habib region is characterised by average global solar radiation (GHI) ranging from 88.3 kWh/m² in December to 247 kWh/m² in July, with an annual average of 1,955 kWh/m² per year.
- Proximity to the road network: The project area is easily accessible via a side road off the RN15.
- Distance from key sensitive receptors: The project site is generally located at a reasonable distance from any key potential sensitive receptors, including community facilities, archaeological sites, sites of regional architectural and cultural heritage, etc.
- Natural landscape of the site: Solar PV plants require preferably flat and open land for the installation of the various project components, including PV panels. The project area is generally characterised by relatively flat surfaces, therefore, site preparation and earthworks should not be significant.

In this context, no specific alternatives to the chosen site have been considered by the Developer. However, it should be noted that a preliminary impact assessment was carried out in advance to ensure that there were no major environmental or social issues in the area concerned. The results of this assessment confirmed that the site chosen by the Developer is the most suitable for the development of a solar PV plant, both from a technical and environmental point of view.

The "no project" alternative assumes that the solar PV plant of Menzel Habib will not be developed. In this scenario, the area selected for the project would remain unchanged in terms of physical layout and land use. The site would retain its current characteristics as privately owned, undeveloped land used formally, mainly for extensive livestock grazing.

4 PROJECT E&S AUTHORISATION PROCESS

On the basis of Decree no. 2005-1991 of 11 July 2005 on environmental impact assessment (EIA), which defines the categories of units subject to environmental impact assessment and the categories of units subject to specifications, only electricity generation units with a capacity of at least 300 MW are subject to EIA. Consequently, the solar PV plant of Menzel Habib which has a capacity of 130 MWp (less than 300 MW) **does not require an EIA**.

5 ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

5.1 Solar PV plant

5.1.1 Climate

The project site is located in a lower arid bioclimatic zone with mild winters, influenced by a Mediterranean climate and affected by both Saharan and Mediterranean currents, leading to significant annual variations, including drought and flooding. From 2015 to 2024, the area recorded an average annual temperature of around 21°C, with extremes of -2°C in January and 48.4°C in July. Monthly rainfall averaged between 0.1 mm in July and 13.1 mm in March, with a peak of 60.8 mm in February. Relative humidity ranges from 38% to 63%. Average annual wind speed was 4.59 m/s, with seasonal variations: southwest winds dominate in winter (26.7%) and autumn (26.1%), while east winds prevail in spring (47.9%) and summer (50.9%). Global solar radiation (GHI) averaged 1,955 kWh/m² annually, ranging from 88.3 kWh/m² in December to 247 kWh/m² in July.

5.1.2 Climate change risk and sources of natural hazards

The solar PV plant site in Menzel Habib, located in a pre-Saharan zone, faces several natural hazards:

- **Seismicity**: The site is in a low-frequency seismic zone, classified between II and IV on the Medvedev-Sponheuer-Karnik (MSK) scale, indicating minimal seismic risk.
- **Lightning**: The risk is low, with an average of 4 lightning strikes per km² per year.
- **Fire Risk**: Fire risk is negligible due to sparse vegetation, the absence of fire-prone elements, and no recorded fire incidents in the area, unlike denser vegetated oases in Gabes Governorate.
- **High Temperature**: July 2023 was the hottest month on record in Tunisia, with temperatures reaching 49.1°C in Gabes, 4°C above the 1991–2020 norm. These extreme temperatures pose risks of overheating and electrical malfunctions, requiring careful design considerations for the PV plant.
- **Sandstorms:** The site is vulnerable to sandstorms, which reduce visibility and exacerbate wind erosion and desertification due to degraded vegetation and loose soils.
- **Flood Risk**: The site is prone to flooding, particularly from the El Herrigua wadi, located in a natural depression. Hydrological studies (BTE, 2024) using HEC-RAS modeling show that during a 100-year flood, water levels in El Herrigua wadi reach 1.6–2.0 m, with minor overflows toward the site. The El Oussif wadi, with a 100-year flood discharge of 35 m³/s, also causes minor overflows (max water elevation 1.2 m). Watersheds BV-2 and BV-3 contribute low water flow but require consideration for protective structures. The railway line's hydraulic structures exacerbate flooding by constricting the riverbed, increasing water levels upstream.

5.1.3 Air quality and noise

The solar PV plant in Menzel Habib, located in a rural agricultural area, approximately 4 km from the RN15 motorway and 50 km from the Gabes industrial zone, the site benefits from low atmospheric emissions due to the absence of significant polluting activities, resulting in low levels of particulate matter and gaseous pollutants, thus maintaining a relatively unspoiled environment. Additionally, the site is situated far from major noise sources, such as industrial activities, heavy traffic, or urban infrastructure, ensuring a quiet acoustic environment with minimal noise and vibration disturbances.

5.1.4 Natural regions, geology, topology, geomorphology and soils

The solar PV plant in Menzel Habib is located in pre-Saharan Tunisia within the southern low plains, characterized by vast sedimentary formations of alluvial and eolian origin, sparse vegetation adapted to arid conditions, and a flat topography in the Ségui-Zograta basin, with altitudes of 95–111 meters and slopes under 0.8°. The site sits on Quaternary plains from the Middle to Upper Pleistocene, featuring ancient alluvial deposits with limestone and gypsum crusts, and geotechnical surveys reveal fine dune sand (0–0.5 m depth) and carbonated sandy-clay silt with high mechanical strength (0–6 m depth). The surrounding landscape is bordered by mountain ranges to the south and northwest, with localized micro-reliefs in the southern part of the site due to water erosion and sediment deposition near a dry wadi. Soils are predominantly poorly developed, shallow, and low in organic matter, with isohumic soils richer in organic content in the southern part due to water-transported sediments. The region experiences moderate wind and water erosion, with localized ravine erosion in the south, particularly near the railway line, making the area vulnerable to soil degradation during rainfall.

5.1.5 Surface water and hydrogeology

The solar PV plant site in Menzel Habib features two primary watercourses: the El Herriga wadi (100 m wide, 2 m banks) along the eastern boundary and a tributary of the El Oussif wadi (30 m wide, 1 m banks) near the western boundary, with diffuse internal flows directed northeast and northwest. A February 2024 hydraulic study identified nine watersheds (0.14–24.5 km², 0.5–4.29% slopes) using Global Mapper and ArcGIS. Hydraulic structures under the railway, including a two-span bridge (11.6 m each), Armco pipes (Ø2400 mm), and culverts, are partially clogged or deteriorated, requiring maintenance to ensure hydraulic continuity and reduce flood risks. Hydrogeologically, the site lies over the Menzel Habib shallow aquifer (salinity >6 g/l, 326 wells, 1.50 Mm³/year extracted in 2015 based on the last data from DGRE 2015) and the deep Sidi Mansour Cretaceous aquifer (salinity ~5.15 g/l, 5 wells, 0.26 Mm³/year extracted against 0.7 Mm³/year available based on the last data from DGRE 2015).

5.1.6 Biodiversity

Habitats and flora, fauna and avifauna are based on the site visits conducted by EAM experts and on their reports, which are provided in the ESIA report.

Habitats and Flora

The solar PV plant site in Menzel Habib, characterized by an extensive arid steppe, features sparse vegetation with moderate floristic diversity, dominated by perennial species like *Astragalus armatus, Haloxylon salicornicum, Anabasis articulata, and Gymnocarpos decandrus, with Zizyphus lotus clumps* near wadi beds and hydraulic structures. Annual plants such as *Euphorbia retusa* and *Malva parviflora* appear post-rainfall. Sentinel-2 satellite imagery (8 March 2025) and NDVI analysis reveal 59.9% bare soil, 35.7% low vegetation, 3.7% medium-density, and 0.7% dense vegetation near the railway due to higher humidity from wadi flows.
No species are listed as threatened per IUCN or national lists, and dense vegetation areas are excluded from PV panel installation.

Fauna

- The invertebrate fauna is represented by a common gastropod, about ten insect species, and a venomous scorpion typical of arid environments, *Androctonus australis.*
- Other venomous species are also likely to occupy the site, such as the horned viper (*Cerastes cerastes*).

- The vertebrate group is represented by several species of diurnal and nocturnal lizards; many rodent burrows and signs of the presence of desert hedgehogs and canids (wolf or fox) have been spotted.
- No taxa are considered rare, vulnerable or endangered. However, among the arthropods, and more particularly among the insects, a mantid, *Eremiaphila denticollis*, represented by the endemic subspecies *E. d. tunetana*, has been identified on the site.

Avifauna

- The preliminary survey conducted on 14 February 2025 at the Solar PV plant did not reveal any major ornithological issues, particularly during the considered phenological season.
- A total of 12 bird species belonging to 8 families were recorded, including 3 rare species, 3 frequent species, and 6 common species
- No raptors or waterbirds were observed on the site, indicating that there are no major ornithological issues.
- One species classified as "Vulnerable" (VU) on the IUCN Red List and on the national list was identified: the southern shrike.
- A second survey, conducted on 20 August 2025 during the autumn migration period using the transect method, revealed only 11 bird species, including one raptor, Common Ravens, and nine small sedentary passerines. No signs of autumn migration were detected during this visit.
- One species classified as “Near Threatened” (NT) on the National red list was identified: the Long-legged Buzzard.

5.1.7 Protected Areas

The solar PV plant site, within 3.2 km of the Sebkhet de Sidi Mansour, a Ramsar-listed wetland and Important Bird Area, is near a key conservation ecosystem that sporadically hosts migratory waterbirds, including threatened species like *Marmaronetta angustirostris*, *Oxyura leucocephala*, and *Aythya nyroca* during wet years.

However, the general geographic context indicates that it is practically impossible for waterbird exchanges to occur between the solar PV plant and this conservation-important wetland. Indeed, these two partially anthropized ecosystems have very different ecological conditions and capacities, which categorically prevent waterbird movements between them. Furthermore, the Sebkhet Sidi Mansour provides abundant and readily available trophic and spatial resources for this taxonomic group, reducing the need for them to move elsewhere in search of food or suitable shelter.

As per IUCN–CEPF (Critical Ecosystem Partnership Fund) report on the Sebkhet of Sidi Mansour[1]:

- The Sebkhet Sidi Mansour is very poorly studied, and most information remains qualitative and not supported by quantitative ecological data. Reliable inventories of flora, fauna, hydrology, and land use are still lacking. Despite its inclusion in the Ramsar list and recognition as an Important Bird Area (IBA), the site does not currently benefit from structured or effective management plans.
- The IUCN study further notes that the civil society and institutional involvement is weak, and collaboration mechanisms between CRDA services, research institutions, and local associations remain underdeveloped.

[1] **UICN - Centre de Coopération pour la Méditerranée (2014).** *Analyse de l’information sur le Parc National de l’Ichkeul à Bizerte et la Sebkha Sidi Mansour à Gafsa et renforcement de leur partenariat avec les institutions de recherche et les organisations de la société civile en Tunisie.* Rapport final, projet CEPF « Renforcement des connaissances et des statuts de protection et de gestion des Zones Clés pour la Biodiversité (ZCB) ». Malaga, Espagne : UICN. 92 p.

Figure 5.1 General view of Sebkhet Sidi Mansour, classified as a Ramsar site (EAM photos, July 2025)

5.1.8 Species of Conservation Interest

The solar PV plant site in Menzel Habib, an arid pre-Saharan steppe, was evaluated for species of conservation interest under IFC PS6 (2012) and EBRD ESR6 (2024) for Critical Habitat (CH) and Priority Biodiversity Features (PBFs). Assessments considered species presence, IUCN Red List (2025.1) and national red list status, and CH/PBF criteria. CH criteria include endangered species (≥0.5% global population, ≥5 breeding units for CR/EN, or VU species at risk), endemic species (≥10% global population, ≤50,000 km² range), and migratory species (≥1% global population cyclically), but unique ecosystems and evolutionary processes are inapplicable due to the site's degraded ecology. PBFs cover threatened habitats, vulnerable species, protected areas (e.g., nearby Sebkhet de Sidi Mansour, a Ramsar site), and key ecological functions. Highly mobile species with no site dependency were excluded due to the project's minimal ecological impact.

5.2 Environmental Baseline Conditions for the existing 150 kV TL (400 km)

5.2.1 Avifauna

A three-day survey (August 21–23, 2025) along the 150 kV Bouchamma-Mdhilla transmission line identified 41 bird species, including 7 raptors, 2 waterbirds, 4 columbids, 1 corvid, and 27 passerines, with *Oenanthe halophila* as the only North African endemic. Eight species, including Tourterelle des bois (VU globally/nationally), Faucon lanier (EN nationally), and Buse féroce (NT nationally), are of conservation concern. Five species use 25.5% of 188 pylons (30 for nesting, 18 for perching), emphasizing their ecological role, with only one case of mortality: pigeon (*Columba livia*) found more than 25 m from pylon no. 33. The absence of signs of predation suggests that the cause of death was related to electrocution or a parasitic disease.

5.2.2 Protected area

Within a 5 km radius along the existing 150 kV transmission line Bouhedma-Mdhilla, there are two (02) natural ecosystems of conservation interest. These are:

- Sebkhet Sidi Mansour or Garaet Sidi Manousr– TN033 (approximately 4.3 km north of the line), listed as a Ramsar wetland.
- Chott El Guetar (approximately 1.4 km north of the line), listed as a Ramsar wetland.

It should be noted that Sebkhet El Hamma, located approximately 0.3 km away, is hydrologically connected to Chott El Fejej, which is itself connected to Chott El Jerid, a Ramsar site. However, despite this connection, Sebkhet El Hamma is not part of the Ramsar Convention and is therefore not officially recognised as a wetland of international importance.

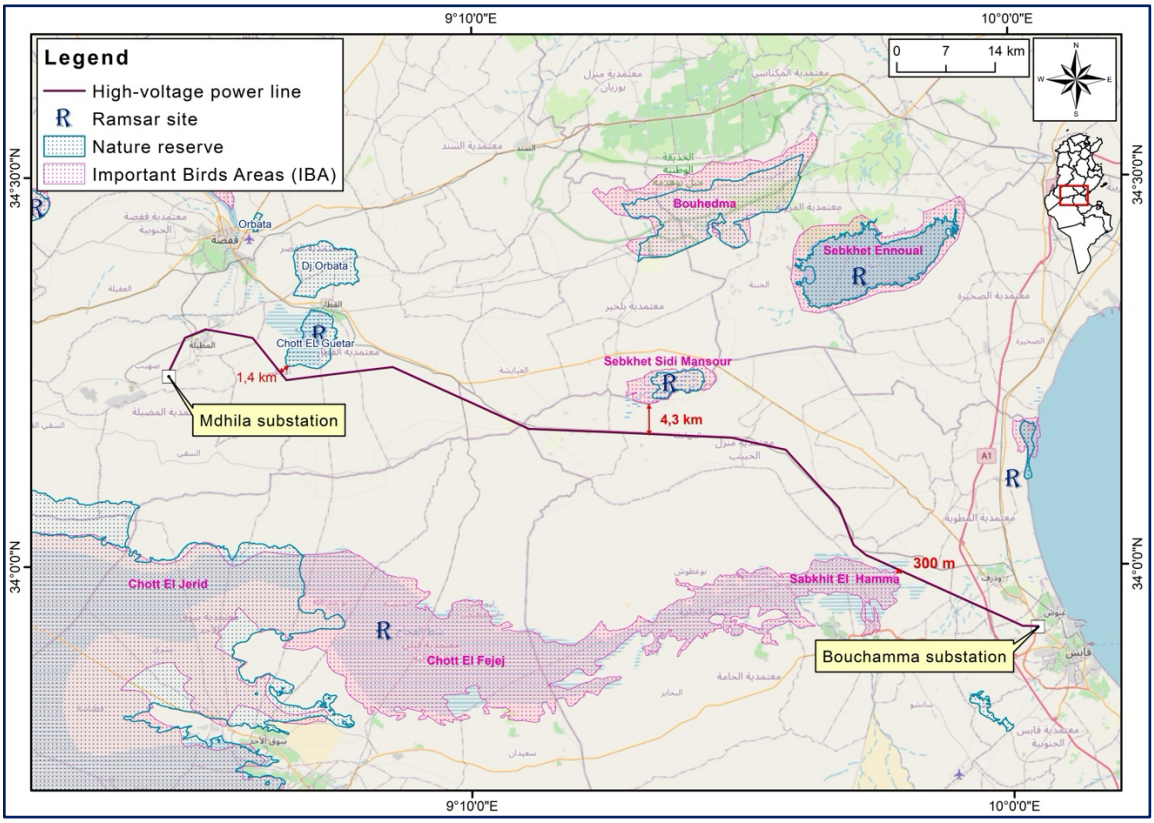

Figure 5.2 Map showing the location of protected areas

5.3 Social Baseline conditions for the solar PV plant and new 225 TL

5.3.1 Socio-economic status of the population

The solar PV plant site in El Mehemla, Menzel Habib delegation, Gabès governorate, is a rural area with a declining population of 2,254, facing significant migration due to limited economic opportunities, infrastructure, and services. August 2025 consultations highlighted unemployment (10.65%, 21.55% for women), poor healthcare, inadequate drinking water (53.73% coverage), unsafe transport, and low education access (29.82% illiteracy). Agriculture and livestock dominate the economy, but the site lacks agricultural activity. Poverty is high (33.6%), and education is limited, with a nearby primary school at risk of closure. Healthcare is deficient, with an ill-equipped center 2 km away. Electrification (90.14%) and sanitation (5.47%) are below average, and the RN15 road is accident-prone, while a nearby railway supports phosphate transport.

5.3.2 Protection of agricultural land

According to the agricultural land protection map, the solar PV plant is not located in a protected area, it is located area subject to authorization

Articles 6 and 8 of Law No. 83-87 of 11 November 1983 on the protection of agricultural land, Decree-Law No. 2022-68 of 19 October 2022, laying down special provisions for improving the efficiency of public and private projects, confirms that the implementation of renewable energy projects does not require a change in the use of agricultural land.

5.3.3 Access patterns

Access to the solar PV plant is illustrated in the figure below. The project area is crossed by several unclassified agricultural roads, some of which are used by residents to reach scattered dwellings in the vicinity. These roads are particularly important in rural areas such as Menzel Habib, where public infrastructure is limited and residents rely on them for daily travel, including access to fields, markets, or neighboring villages. Due to their unclassified status and rural context, no official data

on vehicle numbers or traffic frequency are available; however, traffic is generally light and primarily related to local agricultural and residential activities

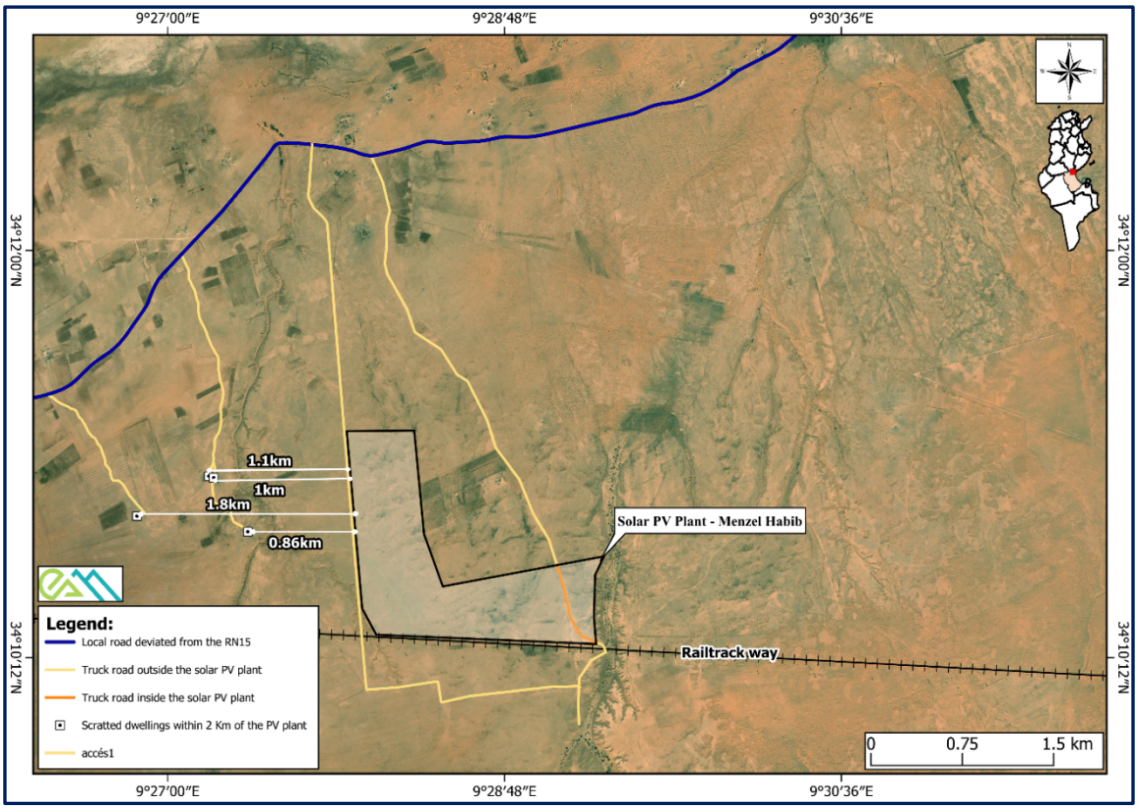

Figure 5.3 - Access card to the solar PV plant

5.3.4 Archaeological sites and Cultural heritage

The ground survey carried out at the solar PV plant did not reveal any archaeological sites, with the exception of a few flint fragments, pottery shards from various periods, porous stones and metal objects of no significant archaeological value.

Outside the immediate boundaries of the solar PV plant site, approximately 2.25 km to the North, there is an archaeological site with clearly visible remains from the Roman period.

5.4 Social baseline conditions for the exiting 150 kV transmission line (140 km)

5.4.1 Land use

The 150 kV Bouchamma-Mdhilla transmission line, spanning 140 km, crosses primarily open or uncultivated private, collective, and state-owned land, with 6.2% (8.68 km) used for olive groves or fruit trees and 5.8% (8.12 km) for small-scale subsistence market gardening, alongside occasional seasonal grazing. Maintenance activities, like insulator replacement, will utilize existing access tracks without new encroachment.

5.4.2 Identified structures along the existing 150 kV TL

As part of a proactive approach to identifying potential social impacts, a spatial analysis using satellite imagery was carried out along the entire Bouchama–Mdhilla TL, four structures were identified, of which four are located at less than 14 m from the TL.

Only 4 infrastructures are identified in the RoW.

- X1 (distance 12.8 m) - Mosque temporary occupied.
- X2 (distance 9.93 m) - permanently occupied house
- X3 (less than 1m): abandoned house
- X4 (less than 9 m) Mosque under construction.

6 SUMMARY OF IMPACTS AND RESIDUAL IMPACTS

6.1 Solar PV plant and new 225 kV TL (200 m)

During the construction phase (see Table 6.1 -), most environmental and social impacts were assessed as minor to moderate in significance, and through the application of robust management and mitigation plans, these residual impacts are reduced to negligible or minor. The project nevertheless generates positive impacts, notably through local employment and economic opportunities, while requiring ongoing attention to road safety, occupational health and safety, and supply chain labour risks.

During the operational phase (see Table 6.2 -), residual impacts remain negligible to minor with appropriate management, while the project delivers long-term positive outcomes, including improved energy access and enhanced socio-economic resilience, thereby contributing to national renewable energy and sustainability objectives. The table below summarizes the residual environmental and social impacts of the Project, following the application of mitigation and management measures during the construction and operational phases.

After the 25-year operating period, the PV plant will be modernised to continue operating, transferred to STEG or dismantled. In the event of a decision to cease operations for various reasons, the Developer will ensure that the facilities are decommissioning and the site restored to its original condition.
The impacts expected throughout the dismantling phase are similar to those assessed during the construction phase, namely:

- Impacts on the physical environment.
- Impacts on the biological environment.
- Impacts on the social environment, including risks to the health and safety of the community (risks related to road transport, intrusion on the site and risks to incoming workers).
- Impacts on infrastructure and public services

Table 6.1 - Assessment of residual impacts during construction phase

Impact title	Initial impact	Management Plan with the control measures	Residual impact
Impact on the physical environment			
C1. The physical presence of the solar PV plant and the new 225 kV TL (200m) components will alter the landscape and have visual impacts.	**Minor**	**(none)**	**Negligible**
C.2. The presence and operation of heavy machinery inside the solar PV site, at pylon locations, and along temporary access roads, leading to changes in the geology and geomorphology of the area, causing soil disturbance and degradation.	**Minor**	**(none)**	**Negligible**
C.3. The use of machinery and temporary access roads leading to soil compaction, potential changes to water drainage flows, and local contamination from leaks and spills	**Minor**	**Pollution Prevention Management Plan (**The prevention of soil, groundwater and surface water contamination)	**Negligible**
C4. The generation of air and noise emissions from construction machinery leading to the generation of a nuisance and air pollution.	**Minor**	**Pollution Prevention Management Plan** (air emission, dust and noise)	**Negligible**
C5. The generation of hazardous and non-hazardous waste leading to soil and groundwater pollution.	**Moderate** – due to the lack of regional disposal facilities for hazardous waste, even if this is to be generated in small quantities.	**Pollution Prevention Management Plan** (Wastewater and drainage) **Waste Management Plan**	**Minor**
C.6. The use of water for construction of the solar PV plant and TL and the workforce leading to a reduction in the availability of this resource to other users.	**Minor**	**Water resources Management Plan**	**Negligible**
Impacts on the biological environment			
C7. Potential impacts on habitats and species of flora	**Minor**	**Biodiversity Management Plan**	**Negligible**
C8. Potential Impacts on terrestrial fauna	**Minor** (Due to the absence of threatened species and the localized, avoidable nature of impacts; significance remains low with planned mitigation)	**Biodiversity Management Plan**	**Negligible**
C9. Potential impacts on avifauna	**Minor** (The presence of nationally protected species and PBF EBRD)	**Biodiversity Management Plan**	**Negligible**

Impact title	Initial impact	Management Plan with the control measures	Residual impact
Impacts on social environment			
C10. Labor and working conditions	**Moderate**– Given the remoteness of the site where the camp (if used) may be located, and the prevailing gender dynamics in Tunisia. Specific steps must be taken to prevent GBVH from taking place amongst the workforces. Women must also feel empowered to apply for local employment positions, equally to men.	**Local recruitment plan** **Human Resources Management Plan and Human Resources Policies** **Worker Accommodation Plan (if required)** **Worker Code of Conduct and Security Personnel Code of Conduct** **Worker Grievance Mechanism**	**Minor**
C11. The presence of child and forced labour at the workplaces of supply chain companies.	**Major**– as the suppliers to be used are unknown.	**Supply Chain Management Plan**	**Minor**
C.12 The capital spends by the EPC Contractor on businesses supplying materials and services, leading to an increase in revenue to the owners of the businesses used and potentially an increase in their workforce.	**Minor to Moderate (+)**	**(none)**	**Minor to Moderate (+)**
C13. The use of an installation workforce from the generation or continuation of employment, and the provision of training opportunities, leading to a sustained or increase in household income	**Moderate –** as the continuation of employment will benefit the household and reduce their socio-economic vulnerability.	**Local recruitment plan**	**Moderate (+)**
C.14. The generation of a limited number of local employment opportunities, leading to intra- and inter- community tensions arising from high expectations of the number of local employment opportunities.	**Minor** – As the decision as to 'who' is offered a temporary position (and therefore 'who is not' provided with such an opportunity) could result in protests and frustration towards the Project.	**Local Recruitment Plan**	**Negligible**
C.15. The road transport of materials and personnel using the public road network, use of construction machinery, and the presence of excavations, leading to health impacts to pedestrians and other road users, and local people	**Major** – As Tunisia has a poor road safety record and adjacent land users may not be familiar with frequent large truck movements taking place along local roads.	**Traffic and Transport Management Plan**	**Minor**
C.16.The occupational health and safety risks to the workforce leading to injuries or fatalities.	**Major** – as mistakes made could have fatal consequences.	**Occupational Health and Safety Management Plan** **Emergency Response Plan**	**Minor**
C.17. The use of security personnel to guard equipment and other areas leading to a reduction in the wellbeing of local residents.	**Moderate**	**Security Management Plan (if required)** **Worker Code of Conduct and Security Personnel Code of Conduct** **Worker grievance mechanism**	**Minor**

Impact title	Initial impact	Management Plan with the control measures	Residual impact
C.18. The restriction to access land inside the solar PV plant from installation of the permitter fence.	**Negligible**- as the herder stated during the engagement that there are alternative areas of land that can be used	**None**	**Negligible**
C.19. The construction of the solar PV plant, installation of TL, and use of temporary access roads, leading to disturbance and damage of subsurface archaeological remains where present	**Moderate-** protected cultural heritage have been identified in the project area (at 2.25 km).	**Chance Find Procedure**	**Minor**

Table 6.2 - Assessment of residual impacts during operational phase

Impact title	Initial impact	Management Plan with the control measures	Residual impact
Impacts on physical environment			
O1. Water requirements	**Minor**	Water Management Plan	**Negligible**
O2. Solid and liquid waste.	**Minor**	Waste Management Plan	**Negligible**
Impacts on biological environment			
O3. Potential Impact on Flora and Fauna (excluding avifauna)	**Minor**	Biodiversity Management Plan	**Negligible**
O4. Potential impact on avifauna	**Minor**	Biodiversity Management Plan	**Negligible**
Impacts on social environment			
O5. .Local and regional economy	**Moderate (+)** – as the continuation of employment will benefit the household and reduce their socio-economic vulnerability.	Local Employment Plan Local Content Policy Community Development Plan	**Moderate (+)**
O6. Improving access to and reliability of electricity through the development of renewable energy production infrastructure.	**Major (+)** strengthening the national energy mix.	(none)	**Major (+)**
O7. Potential labor law violations within the supply chain	**Moderate** – If no preventive measures are put in place, the risk may materialize and affect the project's reputation and legal compliance	Supply Chain Management Plan	**Minor**
O8. The generation of occupational health and safety risks for staff, resulting in injury or death.	**Moderate**	Occupational Health and Safety Management Plan Emergency preparedness and response Plan	**Minor**
O9. Potential impacts on human health related Electromagnetic Fields (EMF)	**Negligible**	None	**Negligible**
O10. Fire risk	**Minor to moderate** – Technically low risk but requiring rigorous prevention, detection, and rapid response measures	Fire risk prevention and management plan Emergency preparedness and response plan	**Minor**

6.2 *Impacts that expected to occur for the existing 150 kV transmission line Bouchama – Mdhilla (140 km)*

- Occupational Health and safety: The planned work along the existing TL Bouchama – Mdhilla (replacement of insulators and upgrading of the line from 150 kV to 225 kV presents specific risks for workers, mainly related to working at height and the use of lifting equipment.
- Land impact: The planned interventions (in particular the replacement of insulators using aerial platforms) will be carried out without any new permanent encroachment and using only existing access tracks. The interventions along the transmission line will follow the same approach as the routine maintenance works carried out by STEG on a six-monthly basis. Consequently, no adverse impacts on agricultural land are anticipated.
  It is recommended to work closely with STEG on the technical planning of interventions, particularly with regard to the use of existing access tracks already used by STEG for its maintenance operations.
- Existing infrastructures within the RoW: 4 infrastructures are identified (2 mosques and 2 dwellings). STEG will assess compliance with safety and minimum distance requirements. The governor must also be involved in the management of social aspects. If the structures are deemed incompatible with public safety, appropriate measures will be decided in coordination with the local authorities. The Developer will perform an assessment of potential HSE risks related to structures (2 mosques and 2 dwellings), including electrocution and potential pylon collapse.

6.3 *Cumulative Impact Assessment Summary*

The cumulative risks and impacts assessment for the Menzel Habib solar PV plant emphasizes evaluating its effects alongside existing and planned projects to adjust mitigation measures and engage stakeholders effectively. The site's proximity to a railway line, set for an upgrade (2026–2028) that may overlap with the plant's construction (2026–2027), poses temporary impacts like noise, dust, vibrations, and traffic disruptions, requiring coordinated mitigation (dust control, noise reduction, complaint mechanisms) with Voltalia, STEG, SNCFT, and local authorities.

Nearby solar projects, Sidi Bouzid 1 (60 MW, 19 km away) and Khobna (198 MW, 19.6 km away), offer socio-economic benefits like employment but risk labor competition, necessitating harmonized employment plans to optimize local benefits and reduce tensions.

Road doubling projects (RN15 and RN16–RN3), 12 km from the site, will enhance accessibility and economic growth but may increase environmental disturbances and service strain, requiring aligned construction schedules. Effective stakeholder engagement, rigorous monitoring, and coordination with lenders (e.g., EBRD, IFC) are critical to maximize benefits and minimize impacts.

7 MANAGEMENT OF IMPACTS AND ISSUES

An essential step in the ESIA is the identification of measures that can be taken to ensure that impacts are mitigated and hence removed or reduced to acceptable levels. The measures are described under the title of a management plan.

7.1 Voltalia's Existing ESMS and Internal Organisational Capacity

Voltalia have an established corporate Quality, Risk, Health, Safety, Security & Environmental ESMS which includes the following elements:

The ESMP aims to provide high-level mitigation measures and requirements for the management of environmental and social risks anticipated by the project. Throughout the construction and operation phase of the project, an ESMS must be implemented by all parties involved (i.e. the Developer, the EPC contractor and the project operator). The ESMS must be specific to the project and site and must be based on and consider the requirements of the ESMP The development and implementation of an ESMS is considered a key requirement of the EBRD's EES1 and the IFC's PS1 and the ESMS.

During construction phase, the following management plans will be developed by the EPC contractor:

Project Developer

The following will be developed by the Developer:

- HR policies and procedures that reflect the combined requirements from Tunisian legislation and PS2/ESR2, including a Worker Grievance Mechanism
- Permit and Consents Register which reflects the need to obtain (or renew as required) permits for the execution of the project to comply with all legal requirements and relevant authorizations
- Stakeholder Engagement Plan and Project Grievance Mechanism
- An Environmental and Social Management Plan (ESMP) that will be inserted into the EPC contractor's tender documentation which reflects legally binding commitments to achieve sound E&S performance during the construction, in accordance with national legislation and EBRD's Environmental and Social Policy. This ESMP will also reflect the ESMS requirements of the EPC contractor (see below)
- Contractor Management Plan
- Emergency Preparedness and Response Plan (EPRP)
- Biodiversity Management Plan (BMP)

EPC contractor

The following management plans will be developed by the EPC contractor:

- HR policies and procedures
- Local Recruitment Plan
- Utilities Management Plan
- Worker Code of Conduct and Security Personnel Code of Conduct
- Worker Grievance Mechanism
- Human Resources Management Plan and human resources policies
- Worker Accommodation Plan (if required)
- Security Management Plan (if required)
- Emergency Preparedness and Response Plan
- Occupational Health and Safety Management Plan
- Traffic and Transport Management Plan
- Pollution Prevention Management Plan
- Waste Management Plan

- Chance Find Procedure
- Training Plan
- Supply Chain Management Plan
- Change Management Procedure
- Community Health and Safety Plan

Project operator

- HSE manual (in agreement with the Developer) which must include: (i) HSE policy; (ii) human resources policy and procedures; (iii) organisational structure and HSE responsibilities; (iv) HSE training, monitoring and reporting plan;
- Water management plan;
- Worker management plan;
- Waste management plan;
- Occupational health and safety plan;
- Emergency preparedness and response plan;
- Safety management plan;
- Local employment plan;
- Community development plan;
- Decommissioning framework plan.

During operation of the Project the management of impacts identified shall be integrated into an Operations ESMS, using the Construction ESMS as a basis.

During decommissioning phase, it is recommended that Voltalia develops and adopts a comprehensive decommissioning plan in advance of handover to STEG (if it is the case). This measure will ensure that environmental and social requirements associated with the end-of-life phase of the Project are adequately addressed, in line with international good practice and lenders (IFC/EBRD) requirements.

7.2 Environmental and social Monitoring

7.2.1 During Construction phase

During the construction phase, the Developer and the EPC contractor will carry out their own E&S monitoring activities, which are described in this section. Periodic checks may also be carried out by the *Regional Environment Directorate* or the ANPE as the national environmental regulator.

The Developer will carry out the following monitoring and control activities:

- Review and approval of the EPC contractor's ESMP prior to any mobilisation of equipment and personnel.
- E&S audit prior to the mobilisation of the EPC contractor before its departure for the site, to ensure that it has the adequate E&S resources necessary to implement the mitigation measures provided for in the ESMP.
- Quarterly E&S audit and inspection of the EPC contractor, from the start of construction work until completion.
- A pre-demobilisation audit to verify that disturbed areas have been effectively restored and rehabilitated.

The E&S monitoring report from the EPC contractor shall include the following:

- Daily HSE observation report indicating any corrective action taken in relation to safety breaches, hazardous acts and conditions observed.
- Weekly site inspections must be carried out using a checklist template, based on the requirements of the ESMS.
- Monthly submission to the Developer of the latest risk register, waste inventory register and results of audits undertaken (within the month) of any waste management infrastructure used by

third parties;

- Compilation of a monthly E&S performance report covering the following topics:
  - E&S training activities undertaken, including driver training;
  - OHS incidents and community health and safety incidents (see below);
  - Details of fencing and protective measures installed to prevent unauthorised entry;
  - Number of commitments made to raise awareness among local communities of the risks associated with approaching construction works;
  - Results of ongoing vehicle inspections required by the traffic and transport management plan;
  - Number of supply chain companies audited in accordance with the supply chain management plan;
  - Water use and water sources used (including their authorised status);
  - Fuel consumption;
  - Production of hazardous and non-hazardous waste by type and treatment/disposal facility used, including details of any third-party companies used for waste transfer;
  - Number of workers on site, broken down by gender and locally recruited personnel, or part of the EPC contractor's core workforce;
  - The number of third-party security personnel used to monitor equipment warehouses and field camps, details of their screening and training on the security code of conduct.
  - The number of grievances submitted to the Developer per month;
  - The number of grievances raised by EPC contractor workers;
  - The number of operational camps and the date of their last internal inspection by the EPC contractor;
  - Details of any incidents requiring the implementation of the emergency response plan and emergency scenario exercises carried out;
  - Records of any disturbance to wildlife (including avifauna) and flora (whether accidental or not), including road accidents, irreparable damage to dens, burrows and nests;
  - Record of evidence of poaching, illegal hunting of wildlife (including avifauna);
  - Number of people employed and number of local recruits.

Monitoring and reporting on occupational health and safety

With regard to occupational health and safety reporting, the following leading and lagging indicators will be reported by the EPC contractor to the Developer on a monthly basis:

Lagging indicators:

- The lost time injury frequency rate (LTIFR), which measures serious injuries occurring in the workplace and resulting in employee absenteeism
- The lost time injury frequency rate (LTIFR), which includes all recordable incidents, such as cases requiring medical treatment, work restrictions and accidents resulting in lost time.
- Severity rate: Reflects the average impact of injuries in terms of lost working days Fatal accident rate: Number of fatal accidents in the workplace relative to the total number of hours worked or relative to the number of employees.

Leading indicators:

- The hazard reporting rate, which indicates how many hazards are identified and reported by workers.
- Safety training completion rate, which corresponds to the percentage of employees who have completed mandatory occupational health and safety training programmes.

- Inspection and audit compliance, which is the percentage of scheduled safety inspections and audits completed on time.
- The corrective action closure rate, which measures the percentage of identified issues that are resolved within a defined timeframe.
- Near miss reporting rate, which measures the number of reported and followed up near misses.
- Personal protective equipment (PPE) compliance: percentage of workers observed complying with PPE requirements during audits.
- Behaviour and engagement indicators, which aim to ensure that a safety culture is maintained.
- Safety briefing attendance rate, which is the percentage of workers who regularly attend safety briefings.
- Employee engagement in safety programmes, which measures participation in OHS initiatives, such as volunteering on safety committees.
- Feedback utilisation rate, which indicates how often workers' safety suggestions are implemented.

Health and well-being measures

- Occupational disease rate (ODR), which measures the number of diseases directly related to the work environment.
- The health check-up participation rate, which measures the percentage of workers participating in regular health check-ups.

7.2.2 During the operational phase

During the operational phase, the operator will collect the following information on a monthly basis and report it to the EBRD and the IFC:

- E&S/HSE training activities undertaken;
- Occupational safety and health incidents;
- Community health and safety incidents;
- Any details on damage to biodiversity (flora and fauna (including avifauna)), including affected species and their life stage (juvenile, etc.);
- Number of bird collisions with the solar PV plant infrastructure and the high-voltage transmission line, including species and life stages;
- Bird mortality and injury rates;
- Record of any disturbance to fauna (including avifauna) and flora (accidental or otherwise) associated with maintenance activities.

8 COMMUNICATIONS

In accordance with the **IFC's** environmental and social project categorisation, the solar PV plant project could be classified as **Category B**, which corresponds to commercial activities with limited potential environmental and/or social risks and/or impacts that are few in number, generally site-specific, largely reversible and easily addressed by mitigation measures.

In accordance with the **EBRD's** Environmental and Social Policy (2024), the solar PV plant project could be classified as **Category B**, which corresponds to projects that may cause environmental and/or social impacts that are generally limited to a specific site and/or can be readily identified and mitigated by appropriate and effective measures.

The ESIA and its associated documentation (ESMP, SEP and NTS) for Category B projects will be disclosed for 30 calendar days prior to the project's review by the Board of Directors.

Voltalia intends to disclose, as a minimum, the following Project disclosure package:

- The Non-technical Summary (this report);
- The Stakeholder Engagement Plan;
- The Environmental and Social Management Plan (ESMP)

Voltalia has implemented a grievance mechanism that can be used by any person or group who wishes to raise a concern or request additional information. A complaint can be received in several forms and through different channels:

A QR Code for all grievances is available to all internal (labour) and external (all other interested and affected parties not part of the labour force). The QR code is publicized in on site and off site awareness and training campaigns as well as GRM and GBV-H poster notifications.

QR CODE FOR DIRECT ACCESS TO THE GRM