TOSÇELIK NIĞDE SOLAR POWER PLANT PROJECT, TÜRKIYE

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

Volume I: Non-Technical Summary



Non-Technical Summary (NTS)

Environmental and Social Impact Assessment (ESIA)

Tosçelik Niğde Solar Power Plant Project, Türkiye

INDEX

1. WHAT IS THE PROJECT? 3
2. WHERE IS THE PROJECT 12
3. WHAT ARE THE IMPACTS OF THE PROJECT? 16
4. HOW ARE IMPACTS MINIMIZED? 30
5. HOW WILL THE STAKEHOLDER ENGAGEMENT BE LIKE? 37
6. WHAT WILL ENVIRONMENTAL AND SOCIAL MANAGEMENT BE LIKE? 39
7. CONCLUSIONS 42

WHAT IS AN NTS ?

The NTS provides a concise and accessible summary of the key findings of the Environmental and Social Impact Assessment (ESIA). It is designed to support understanding and engagement of all stakeholders throughout the public consultation process.

WHAT ARE THE OBJECTIVES OF THE PROJECT?

The Solar Photovoltaic Power Plant (SPP) in Niğde, Türkiye aims to generate renewable electricity from solar energy, contributing to the national energy mix and supporting Türkiye's transition towards low-carbon and sustainable energy.

WHO IS DEVELOPING THE PROJECT?

Tosçelik Profil ve Sac Endüstrisi A.Ş.

WHICH AUTHORITY REGULATES THE ESIA?

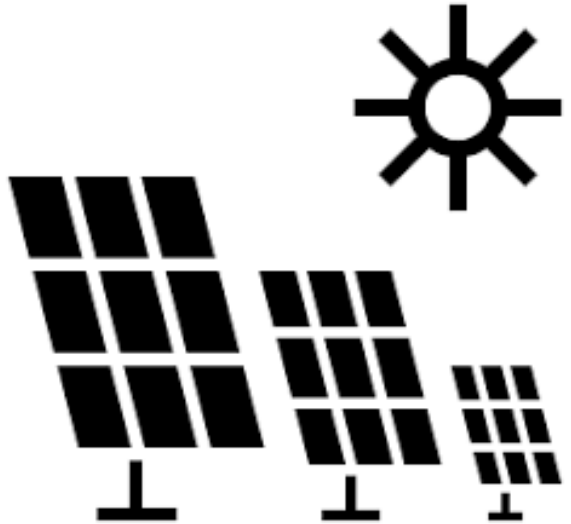
The ESIA has been prepared in accordance with the Turkish Environmental Law and the Environmental Impact Assessment (EIA) Regulation (Official Gazette No. 31907, dated 29 July 2022). The competent authority is the Ministry of Environment, Urbanization and Climate Change (MoEUCC).

01. WHAT IS THE PROJECT

The Tosçelik Niğde Solar Power Plant (SPP) Project involves the development, construction and operation of a 140 MWm / 100 MWe solar photovoltaic facility in Niğde Province, Türkiye.

The Project includes an on-site 154 kV substation and two associated 154 kV Energy Transmission Line (ETL) sections connecting the SPP to the national transmission network.

The Project is expected to generate approximately 482.5 GWh of renewable electricity annually. It will support Tosçelik's long-term energy self-sufficiency and contribute to Türkiye's renewable-energy capacity, energy-security and decarbonisation objectives. It is also expected to support local economic activity during construction and operation.



01. WHAT IS THE PROJECT

The main Project components are:

1. **Niğde SPP including:**
    - Solar PV arrays composed of approximately 193,000 bifacial photovoltaic modules;
    - Twenty-seven (27) containerised Solar Power Stations;
    - Supporting infrastructure, including auxiliary buildings, control facilities and security installation.
    - Underground medium-voltage cabling connecting the SPS units to the on-site substation.

The SPP will have an installed DC capacity of approximately 140 MWp and an approved AC export capacity of 100 MWe.

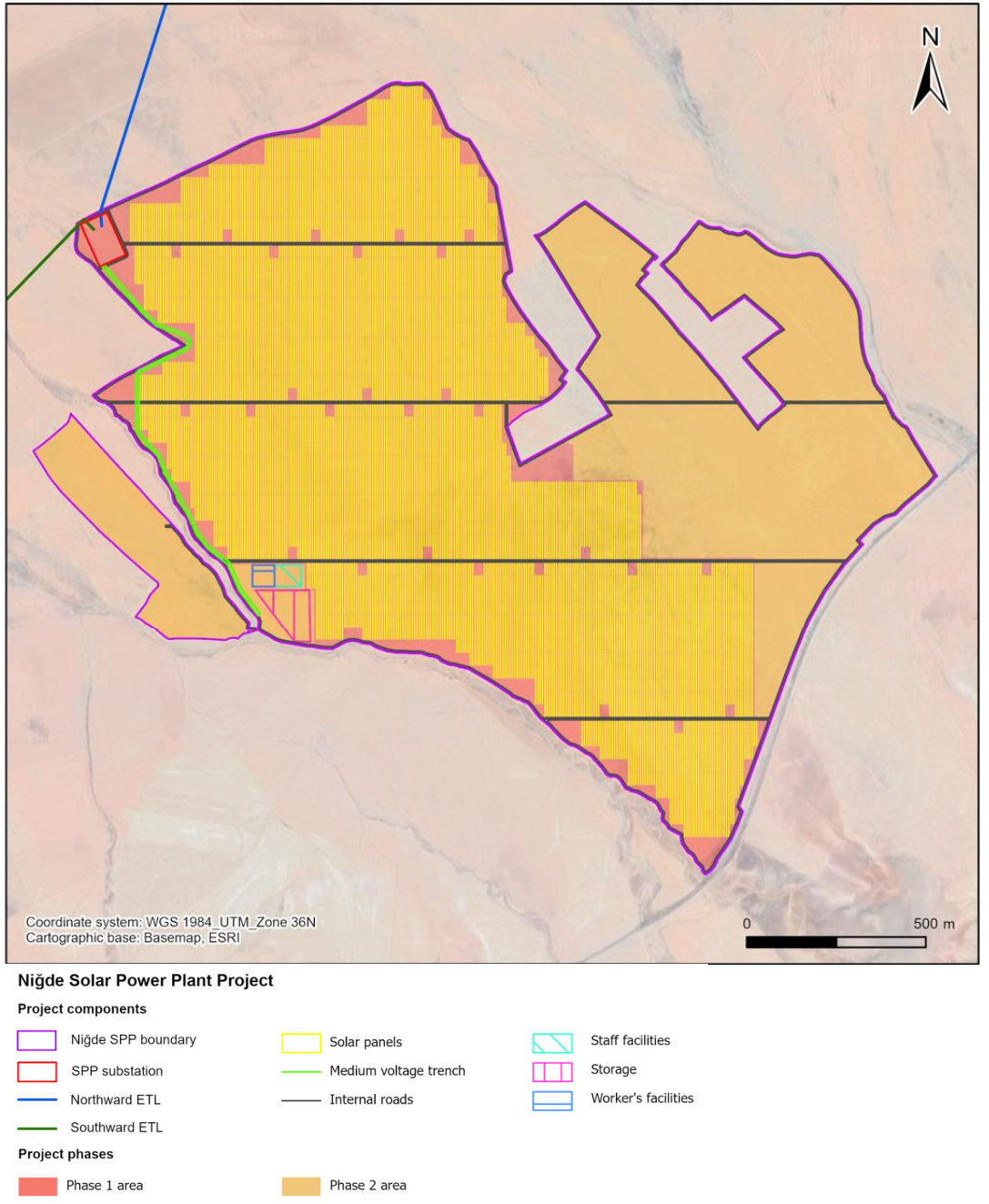


Figure 1 – Niğde SPP

01. WHAT IS THE PROJECT

The core components of the Project include:

2. Grid connection infrastructure

- An on-site 154 kV substation (approximately 1 ha), including main power transformers, protection systems, and a control building.
- A northern 154 kV ETL, approximately 10.48 km long, with 31 transmission towers, connecting the Niğde SPP substation to the Sönmez SPP substation; and
- A southern 154 kV ETL, approximately 20.77 km long, with 64 transmission towers, connecting the Niğde SPP substation to the existing Ulukışla–Ereğli 154 kV transmission line.

The transmission line alignments have been approved by TEİAŞ, ensuring compliance with national grid requirements.

01. WHAT IS THE PROJECT

Existing Infrastructure

The Project will use the existing regional and local road network for access. No new public access roads outside the Project area are planned.

The two Project ETL sections will connect to existing grid infrastructure at the Sönmez SPP substation and the Ulukışla–Ereğli 154 kV transmission line. These existing receiving facilities are not expected to be upgraded, expanded or structurally modified as part of the Project.

01. WHAT IS THE PROJECT

Technology Alternatives

Why solar PV was selected

- The Project area has suitable conditions for solar electricity generation
- Solar PV generates electricity without fuel combustion during operation and can be connected to the existing transmission network

Selected technology

- High-efficiency bifacial PV modules will be used to optimise electricity generation.
- The modules will be installed on single-axis tracker systems, which follow the sun's path during the day to optimise energy yield.
- The tracker foundations will use driven steel posts, avoiding concrete foundations under the current design and reducing excavation and material use.



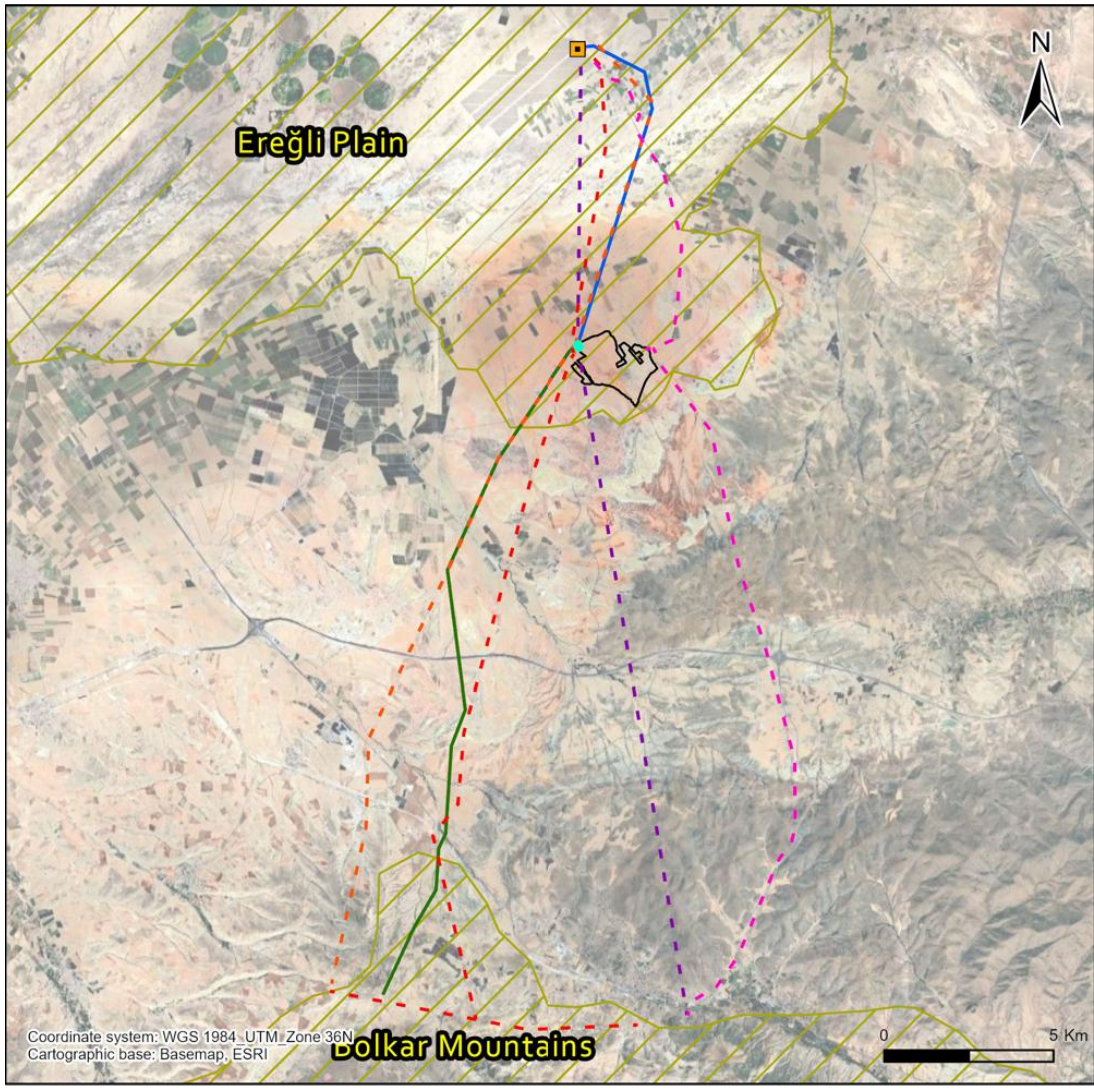
Why other alternatives were not selected

- Wind resources are below commercial viability thresholds
- Hydropower potential is absent due to lack of water bodies and elevation gradients
- Geothermal potential is low
- Thermal power, although technically feasible, was not considered suitable due to its higher carbon footprint and reliance on fossil fuels

01. WHAT IS THE PROJECT

Electric Transmission Lines

- **Alternative 1 -** Moderate corridor length with some route complexity and deviations to avoid settlements. Intersects ~22.60 ha of Natural Habitat.
- **Alternative 2 -** Shortest and most direct route, minimising construction complexity. Intersects the highest Natural Habitat area (~33.64 ha) and passes closest (~150 m) to Kızıl Höyük.
- **Alternative 3 -** Avoids settlements and reduces social impacts. It is the longest route, increasing costs and potential transmission losses, despite relatively lower habitat impact (~20.60 ha).
- **Alternative 4 -** Balanced option in terms of length, constructability, and limited interaction with receptors. Intersects ~28.77 ha of Natural Habitat
- **Alternative 5 -** Optimised south-western alignment incorporating regulatory and land-use constraints. Results in the lowest Natural Habitat intersection (~19.56 ha) and maintains adequate distance from sensitive receptors. - Selected



01. WHAT IS THE PROJECT

The **Construction Schedule** will be composed of:

- Permitting**:** EIA Positive Decision issued (Apr–May 2025); zoning approval completed (Jan 2026); Building Permit expected (Mar–Apr 2026); TEİAŞ licensed area change scheduled (Jun–Jul 2026).
- Procurement**:** March–August 2026.
- Construction (SPP): April–November 2026, including civil works, electrical infrastructure, and PV installation.
- Substation & ETL: Substation (Apr–Oct 2026) and ETL (May–Oct 2026).
- Commissioning**:** November–December 2026.
- Grid Acceptance: Partial (Nov 2026); final (Dec 2026), marking full commercial operation.

Regarding **Employment and Workforce**, in the **construction**, the workforce will peak at around 400 workers, with numbers varying by activity, prioritising local employment and supported by a temporary on-site camp, under labour management procedures aligned with Turkish legislation and IFC PS2.

During the **operation**, a **small permanent team** will manage facility, with no on-site accommodation required.

01. WHAT IS THE PROJECT

TIME SCHEDULE

	NİĞDE SPP	START	FINISH	TIME(M)	2025												2026											
	ITEM				1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	**TEIAS Licenced Area Change**	**June 2026**	**July 2026**	**2**																								
2	**Approval of Zoning Plans**	**December 2025**	**January 2026**	**2**																								
3	**Positive Environmental Impact Assessment Certificate**	**April 2025**	**Mayıs 2025**	**2**																								
4	**Building Permit**	**March 2026**	**April 2026**	**2**																								
5	**SPP Construction and Installation Process**	**April 2026**	**Nowember 2026**	**7**																								
5a	Excavation Works, Highway and Drenaige Works and Mobilization works	April 2026	April 2026	1																								
5b	POT tests	February 2026	March 2026	2																								
5c	Electrical Underground Works (DC Cable and High Voltage Channel Works)	May 2026	August 2026	4																								
5d	Post Nailing	June 2026	September 2026	4																								
5e	Tracker Construction Installation	July 2026	October 2026	4																								
5f	PV Module Installation	August 2026	Nowember 2026	4																								
5g	Commissioning Works	Nowember 2026	December 2026	2																								
6	**Procurement**	**March 2026**	**August 2026**	**6**																								
6a	DC and High Voltage Cables	March 2026	June 2026	4																								
6b	Posts (Poles)	May 2026	August 2026	4																								
6c	Torque Tubes, Bolts, Clamps, Struts, etc.	May 2026	August 2026	4																								
6d	SPS (Inverter, Transformer, RMU)	July 2026	August 2026	2																								
6e	Scada	March 2026	June 2026	4																								
6f	PV Modules	July 2026	October 2026	4																								
7	**Substation Process**	**April 2026**	**October 2026**	**7**																								
7a	Delivery at Substation Level	April 2026	April 2026	1																								
7b	Construction Works	April 2026	July 2026	4																								
7c	Primary Installation	July 2026	August 2026	3																								
7d	Secondary Installation	August 2026	September 2026	2																								
7e	Tests	August 2026	October 2026	3																								
7f	TEİAŞ Acceptances	October 2026	October 2026	1																								
8	**Energy Transmission Line Process**	**Mayıs 2026**	**October 2026**	**6**																								
8a	Foundation Excavation	May 2026	June 2026	2																								
8b	Lower Installation	Jun 2026	July 2026	2																								
8c	Upper Installation	July 2026	August 2026	2																								
8d	Conductor Pulling	August 2026	September 2026	2																								
8e	TEİAŞ Acceptances	September 2026	October 2026	1																								
9	**Acceptances and Commissioning**	**Nowember 2026**	**December 2026**	**2**																								
9a	Partial Acceptance (100 MWp)	Nowember 2026	November 2026	1																								
9b	Partial Acceptance (40 MWp)	December 2026	December 2026	1																								

01. WHAT IS THE PROJECT

The Project classification has been defined in accordance with national legislation and international standards.

National Framework

Under Turkish Environmental Law (No. 2872) and the EIA Regulation (2022), the Niğde SPP and associated transmission infrastructure fall under Annex I, requiring a full Environmental Impact Assessment (EIA). While a full EIA is required, the Project's impacts are considered site-specific and manageable through standard mitigation measures and environmental management planning.

International Standards

The Project is located within the Ereğli Plain Key Biodiversity Area (KBA), with the southern transmission line corridor extending toward the Bolkar Mountains KBA. Although the Project is not located within protected areas, its presence in internationally recognised biodiversity areas requires assessment in line with IFC Performance Standard 6 (PS6).

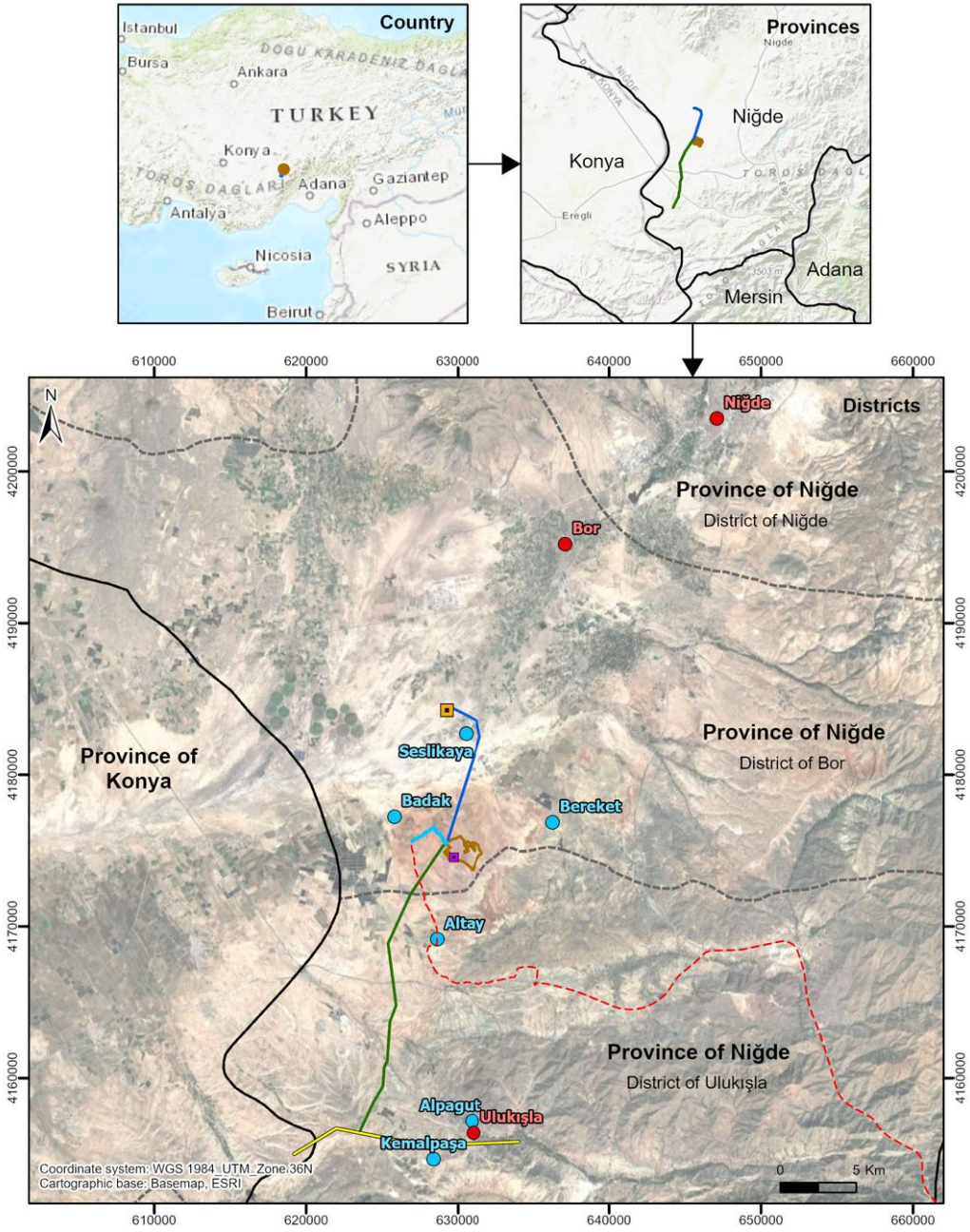
Applying a precautionary approach consistent with international lender practice, the Project is classified as IFC Category A.

02. WHERE IS THE PROJECT

The **Niğde Solar Power Project** is located in Niğde Province, within the administrative boundaries of Bor and Ulukışla Districts, in Türkiye. The SPP site is located within the administrative boundary of Badak Village (Bor District). Nearby settlements include Badak, Seslikaya, Bereket, Altay, Alpağut, Kemalpaşa and Ulukışla (district centre).

All permanent SPP components are located within the defined SPP boundary. The two ETL sections extend outside this boundary through Bor and Ulukışla Districts:

- The **northward ETL** is entirely located within Bor District.
- In the **southward ETL,** between the Niğde SPP substation and Transmission Tower No. 15 lies within Bor District, while the segment from Transmission Tower No. 16 to the connection point lies within Ulukışla District .



Niğde Solar Power Plant Project

Project components
- Niğde SPP
- Northward ETL
- Southward ETL
- Temporary workers accommodation

Communities considered for Socioeconomic Environment
- Nearby villages
- District capitals

Source: Google Earth (2025)

Local roads
- Existing unpaved road
- Existing paved road leading to Mersin port

Existing project facilities
- Sönmez substation
- Ulukışla–Ereğli ETL (154 kV)

Administrative limits
- Provinces
- Districts

Source: Harita Genel Müdürlüğü (2025)

Figure 5 – Project's administrative location

02. WHERE IS THE PROJECT

WHAT EXISTS IN THE AREA TODAY?

Land use within the Project area and surrounding landscape is predominantly agricultural, with areas of grassland and sparsely vegetated land.

In the northern part of the Project area, agricultural land is the dominant land-use type. Further south, along the southern ETL corridor, the landscape becomes more heterogeneous, with a greater presence of grassland and sparsely vegetated areas.

This variation in land use and landscape character has been considered in the environmental and social assessment of the SPP and ETL components.

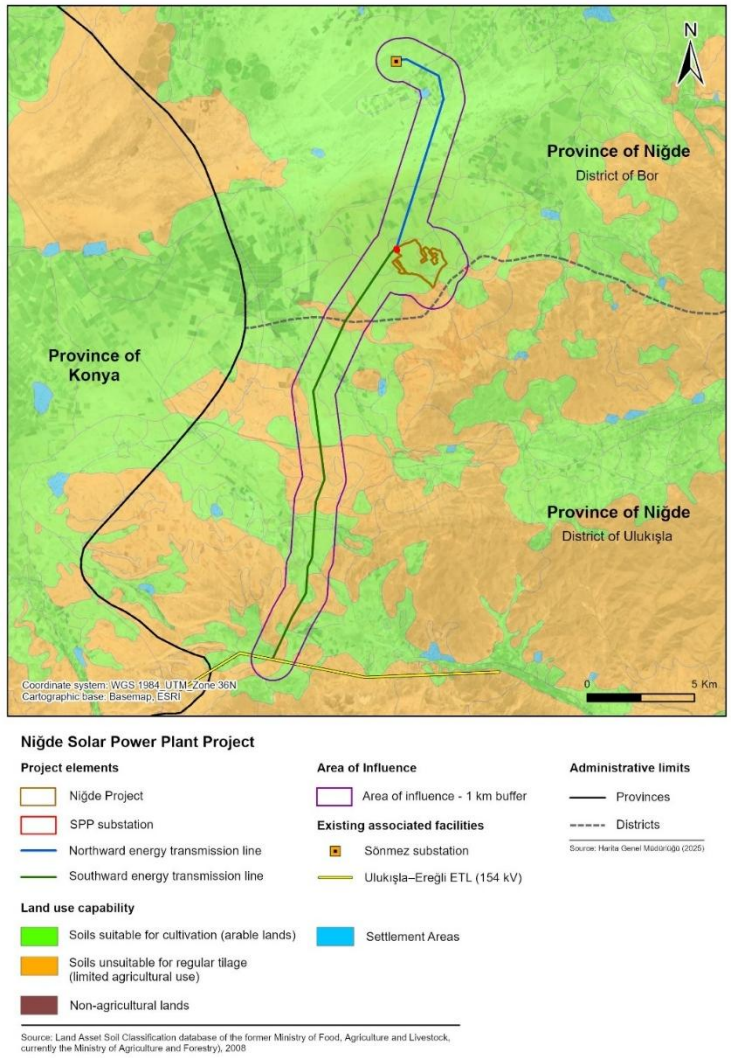


Figure 6 – Land Use the study area

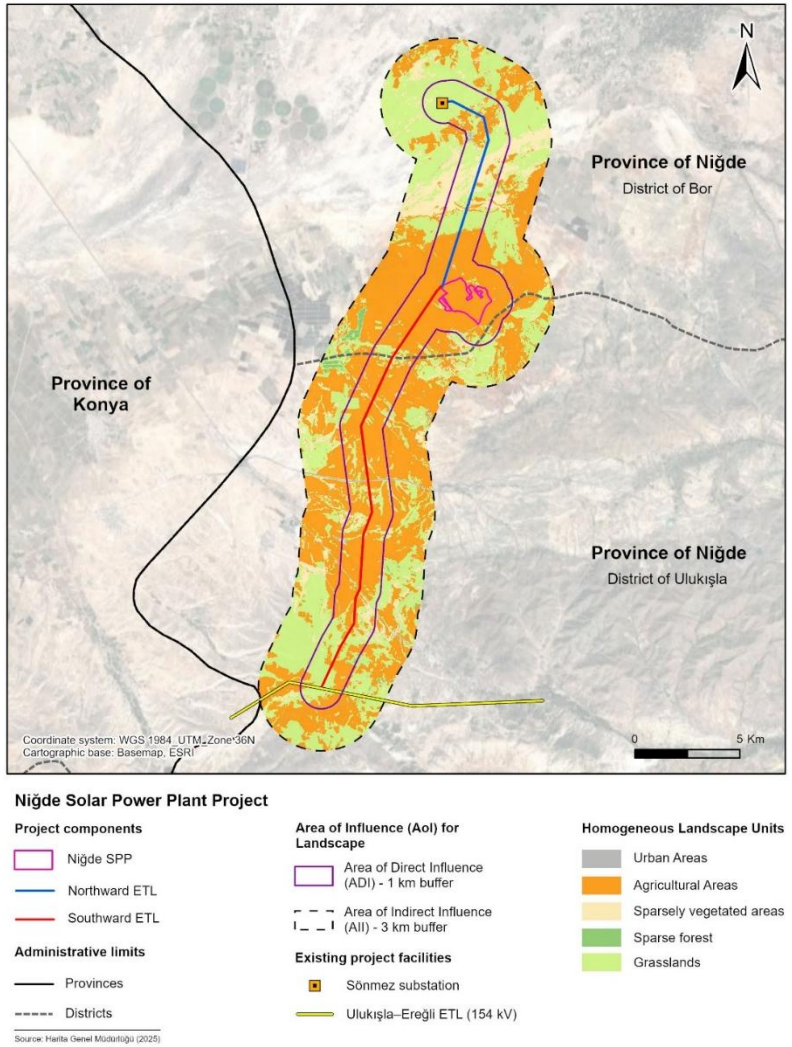


Figure 7 – Homogeneous Landscape Units

02. WHERE IS THE PROJECT

WHAT MAIN RESOURCES AND RISKS AFFECT THE AREA?

The Project overlaps two internationally recognised biodiversity areas:

- **Ereğli Plain**, which includes the SPP and relevant ETL sections, and
- **Bolkar Mountains**, which is crossed by approximately 4.2 km of the southern ETL.

These areas are important for biodiversity conservation. Potential Project effects on biodiversity within and around these areas have been assessed in the ESIA and are addressed through the Project's biodiversity mitigation and monitoring measures.

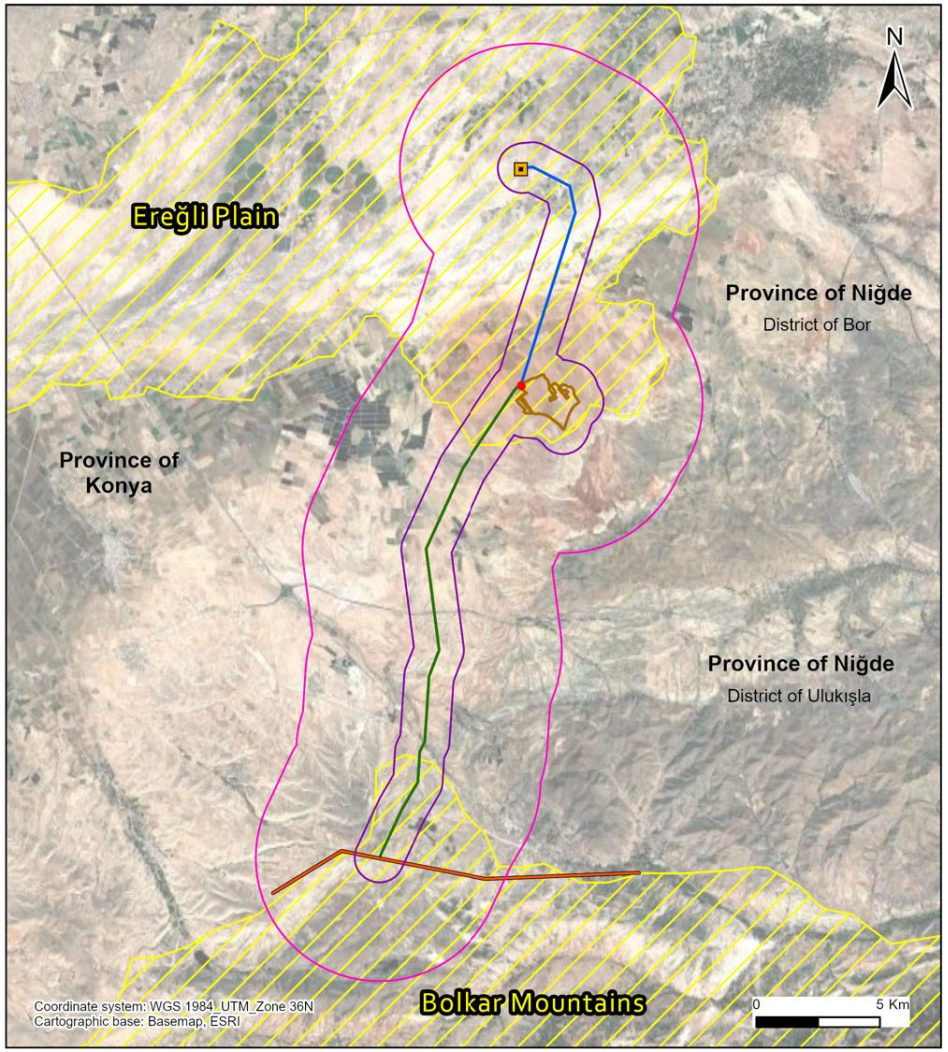


Figure 8 – Key Biodiversity Areas

02. WHERE IS THE PROJECT

WHAT MAIN RESOURCES AND RISKS AFFECT THE AREA?

The Project's Area of Influence includes rural settlements, agricultural land, grazing areas and local access routes that may experience Project-related effects during construction, such as increased traffic, dust and noise.

- **Area of Direct Influence (ADI) – 1 km:** includes the settlements and land uses closest to the Project components. Seslikaya is located approximately 0.9 km from the ETL alignment and may experience localised construction-related effects;
- **Area of Indirect Influence (AII) – 10 km:** includes Badak, Bereket, Altay, Alpağut, Kemalpaşa and Ulukışla. Communities within this area may experience indirect effects associated with construction traffic, workforce presence and temporary demand for local goods and services.

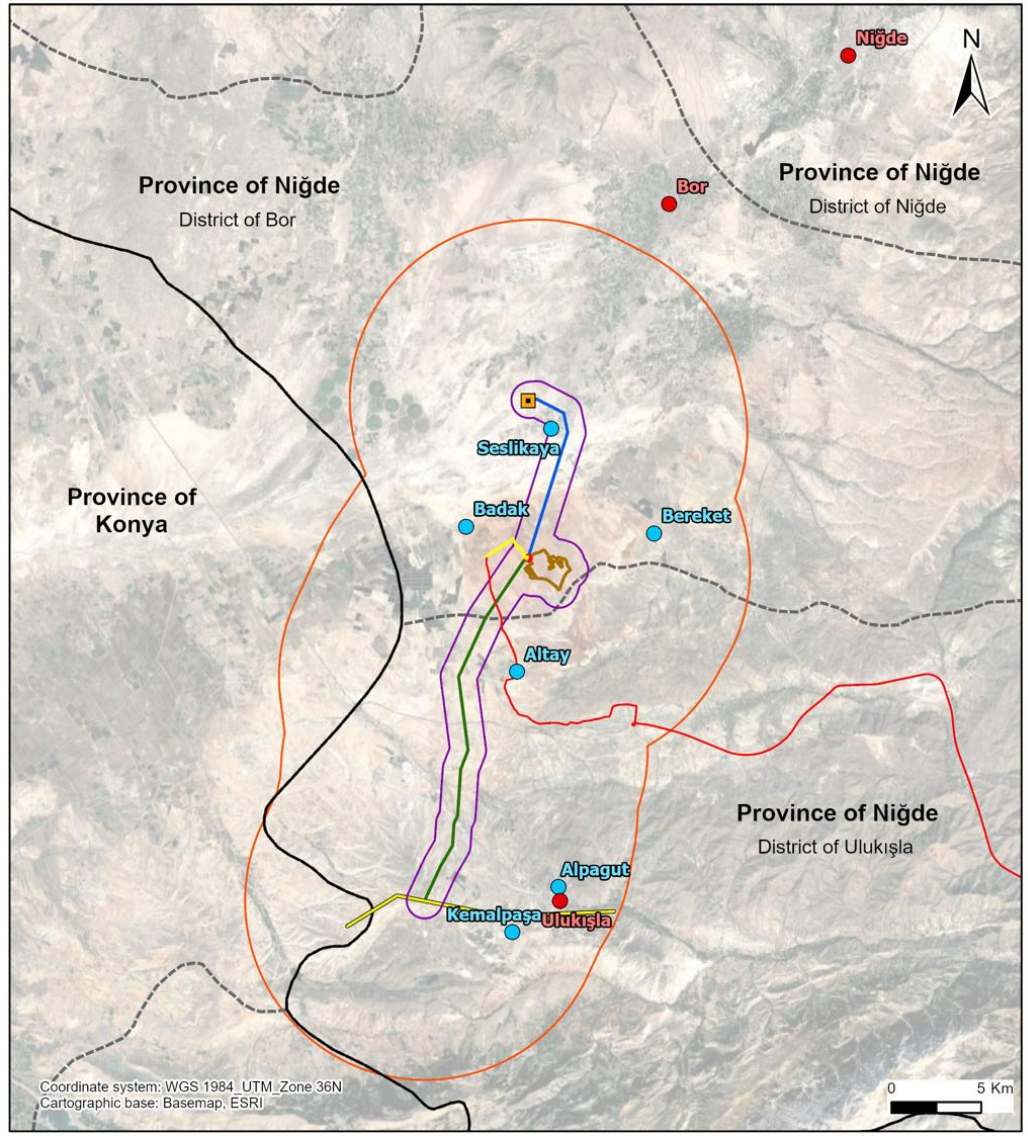


Figure 8 – Project Location and Socio-economic Area of Influence

03. WHAT ARE THE IMPACTS OF THE PROJECT

KEY ACTIVITIES DURING THE PRE-CONSTRUCTION PHASE

During the pre-construction phase, the Project focuses on finalising design, securing approvals and preparing the site for construction.

Key activities include:

- Finalisation of detailed engineering design, incorporating findings from technical studies and environmental requirements;
- Securing land access rights and necessary permits;
- Procurement planning and mobilisation of the construction contractor;
- Establishment of site management systems and construction planning;
- Preparation of temporary facilities required for construction, such as site offices, material storage areas and worker facilities.

03. WHAT ARE THE IMPACTS OF THE PROJECT

KEY ACTIVITIES DURING THE CONSTRUCTION PHASE

Construction is planned to take place between April and November 2026, with commissioning extending to December 2026.

Construction activities will include:

- Development of the Niğde Solar Power Plant (SPP), including site preparation, earthworks, internal roads, installation of mounting structures and solar panels, and underground electrical works;
- Construction of the on-site 154 kV substation;
- Installation of two 154 kV high-voltage transmission lines (ETLs), including site preparation, tower installation and connection to the national grid;
- Testing and commissioning of all Project components.

03. WHAT ARE THE IMPACTS OF THE PROJECT

KEY ACTIVITIES DURING THE OPERATION PHASE

During the operation phase, the Niğde SPP and associated electrical infrastructure will operate continuously to generate and export electricity to the national grid.

Solar Power Plant:

- Electricity generation: Continuous operation of solar panels and associated equipment to produce and export electricity;
- Performance monitoring: Ongoing monitoring of energy production and equipment performance using digital control systems;
- Module cleaning and vegetation management: Periodic dry cleaning of solar panels and control of vegetation to maintain efficiency and reduce fire risk;
- Operation and maintenance: Routine inspection, servicing, and repair of plant components to ensure safe and efficient operation;
- Waste generation: Handling and disposal of operational waste, including damaged equipment and maintenance-related materials;
- Site security: Operation of fencing, access control systems and security monitoring

03. WHAT ARE THE IMPACTS OF THE PROJECT

KEY ACTIVITIES DURING THE OPERATION PHASE

Following commissioning, the Project ETLs will be transferred to TEİAŞ, which will own, operate and maintain them in accordance with the applicable national electricity-market arrangements.

Key operational activities include:

- Routine inspection and maintenance of ETL infrastructure;
- Vegetation management, where required, to maintain electrical safety clearances and reduce fire risk;
- Cleaning and replacement of equipment, as required; and
- Safe management and disposal of wastes generated during maintenance activities.

03. WHAT ARE THE IMPACTS OF THE PROJECT

KEY ACTIVITIES DURING THE DECOMMISSIONING PHASE

At the end of the project's life, the decommissioning phase takes place, which involves:

- Mobilisation of workers, machinery and equipment;
- Safe dismantling and removal of the SPP infrastructure and equipment;
- Segregation, reuse or recycling of materials where feasible, and disposal of non-recyclable waste at authorised facilities;
- Safe handling and management of hazardous materials and wastes, and
- Restoration of affected areas, where applicable.

03. WHAT ARE THE IMPACTS OF THE PROJECT

HOW LONG?

Construction is expected to take approximately nine months, from mobilisation to commissioning, subject to the final construction programme.

HOW WILL THE AREA EVOLVE WITHOUT THE PROJECT?

If the Project is not developed, the existing land uses and environmental and socio-economic conditions in the area would be expected to continue. The renewable electricity generation, temporary construction employment, local procurement opportunities and long-term operational benefits associated with the Project would not be realised.

The no-project alternative would avoid the Project's direct environmental and social impacts, but it would not address existing pressures in the wider area, including those associated with agricultural land use, water scarcity and climate variability.

03. WHAT ARE THE IMPACTS OF THE PROJECT

ENVIRONMENTAL LOADS GENERATED BY THE PROJECT

	CONSTRUCTION PHASE	OPERATION PHASE
Noise and Vibrations	During construction, noise will be generated by heavy machinery and equipment associated with site preparation and civil works, mainly during daytime. Temporary generators may be used for on-site power supply.	During operation, noise levels will be low and mainly associated with electrical equipment, with occasional use of backup generators. Any issues will be managed through monitoring and mitigation measures.
Water Supply and Consumption	During construction, water will be required for domestic use and dust suppression. Water will be supplied by tanker from Kemerhisar Municipality and managed on site to minimise pressure on local water resources.	During operation, water demand will be minimal and limited to domestic use by operational staff. Panel cleaning will generally use dry methods, with only occasional and limited water use if required.

03. WHAT ARE THE IMPACTS OF THE PROJECT

ENVIRONMENTAL LOADS GENERATED BY THE PROJECT

	CONSTRUCTION PHASE	OPERATION PHASE
Energy and Fuel Supply	Temporary power during construction will be supplied by 4–5 diesel generators (~100 kVA each), operating around 8–12 hours per day depending on activity levels. Total diesel consumption for generator use is estimated at approximately 75,000 litres over the construction period, with fuel use for machinery and transport addressed separately.	During operation, auxiliary energy needs will be largely met by the SPP itself, with only minimal electricity imported from the grid (around 15 MWh/year). Backup power will be provided by a diesel generator used only for emergencies and periodic testing, resulting in very low fuel consumption (~250 litres/year) and negligible impact on energy resources.
Effluents Management	During construction, wastewater will consist only of domestic effluent from site facilities, estimated at up to 79 m^3/day, and will be collected in sealed tanks and transported by licensed contractors to an authorised treatment facility, with no on-site discharge planned.	During operation, wastewater will be limited to domestic effluent from employees and will be collected and transported to an authorised treatment facility, with no on-site discharge.

03. WHAT ARE THE IMPACTS OF THE PROJECT

ENVIRONMENTAL LOADS GENERATED BY THE PROJECT

	CONSTRUCTION PHASE	OPERATION PHASE
Transportation and Traffic	Construction will generate temporary movements of workers, materials, equipment and waste vehicles on local and regional roads. Traffic-management measures will be implemented to manage road-safety and access risks.	During operation, traffic movements will be minimal and limited to routine inspection, maintenance activities, and occasional equipment replacement. No significant heavy vehicle movements are anticipated during normal operations.
Atmospheric Emissions	During construction, atmospheric emissions will mainly result from earthworks, vehicle movements, and diesel equipment, generating dust (PM) and exhaust pollutants such as NOx, SO_2, CO, and VOCs. These impacts are temporary, localised, and limited to the construction period.	During operation, atmospheric emissions will be minimal, limited to occasional vehicle use and periodic testing of the emergency generator, with no continuous emissions from power generation

03. WHAT ARE THE IMPACTS OF THE PROJECT

ENVIRONMENTAL LOADS GENERATED BY THE PROJECT

	CONSTRUCTION PHASE	OPERATION PHASE
Waste Handling and Disposal	During construction, both non-hazardous and hazardous waste will be generated, including packaging, scrap materials, domestic waste, and small quantities of hazardous substances such as oils and chemicals. Waste will be segregated, temporarily stored on-site, and transported by licensed contractors to authorised facilities, with management aligned with the waste hierarchy and applicable regulations.	During operation, waste generation will be significantly reduced and mainly consist of small amounts of non-hazardous office and maintenance waste, along with occasional hazardous waste such as oils and electronic components. End-of-life PV modules will be recycled through licensed facilities, and domestic waste from the small workforce will remain minimal (around 8–10 kg/day).

03. WHAT ARE THE IMPACTS OF THE PROJECT

ELEMENTS OF THE ENVIRONMENT AND SOCIO-ECONOMIC ENVIRONMENT SIGNIFICANTLY AFFECTED

During the **construction phase,** impacts are primarily temporary and localised, arising from site preparation, civil works, and the installation of infrastructure. Activities such as excavation, vegetation clearance, and equipment operation are expected to generate noise, dust, and atmospheric emissions, while also increasing traffic on local and regional roads. These effects may temporarily influence **air quality, ambient noise levels, and road safety** in the surrounding area.

In addition, ground disturbance associated with construction works may lead to short-term impacts on soil conditions, including compaction and erosion, as well as disturbance to vegetation, habitats and fauna. Permanent land occupation and habitat modification will occur within the SPP footprint and at ETL tower locations. Agricultural land use and grazing activities may also be temporarily disrupted, and access to certain areas may be restricted during specific phases of the works.

Many construction impacts will be temporary, localised and managed through appropriate mitigation measures. However, some effects, including permanent land occupation, habitat modification and loss of topsoil, will extend beyond the construction period. The Project will implement mitigation, restoration and monitoring measures to reduce and manage these residual impacts.

03. WHAT ARE THE IMPACTS OF THE PROJECT

ELEMENTS OF THE ENVIRONMENT AND SOCIO-ECONOMIC ENVIRONMENT SIGNIFICANTLY AFFECTED

During operation, most routine environmental and social impacts will be lower than during construction. Solar electricity generation does not involve fuel combustion, and operational traffic, water use, waste generation and workforce requirements will be limited compared with the construction phase.

Some longer-term effects will remain, including permanent land occupation and habitat modification within the SPP footprint, the presence of infrastructure in the rural landscape, and potential bird collision and electrocution risks associated with the ETLs. These effects will be managed through the relevant operational management measures and biodiversity monitoring.

Overall, most operational impacts are expected to be low following mitigation. The Project will continue to monitor the effectiveness of management measures and implement corrective actions where required.

03. WHAT ARE THE IMPACTS OF THE PROJECT

ELEMENTS OF THE ENVIRONMENT AND SOCIO-ECONOMIC ENVIRONMENT SIGNIFICANTLY AFFECTED

Key Positive Impacts

During construction, the Project is expected to create approximately 300–400 jobs and provide training opportunities. It will also generate temporary demand for local goods and services, supporting local businesses and economic activity.

During operation, the Project will create a smaller number of long-term jobs and generate continued demand for local services. By generating renewable electricity, the Project is expected to contribute to reduced greenhouse-gas emissions, Türkiye’s renewable-energy capacity and long-term energy-security objectives.

The ESIA identifies job creation and training, renewable electricity generation and strengthening of the national electricity grid as the Project’s principal positive impacts. These benefits will be complemented by local economic activity during construction and operation.

04. HOW ARE IMPACTS MINIMIZED?

WHAT IS PROPOSED TO MINIMIZE THE IMPACTS?

The Project integrates mitigation and management measures throughout all phases — including design, construction, operation, and decommissioning — to ensure that potential environmental and social impacts are avoided, minimised, and effectively managed, in line with international good practice.

PRE-CONSTRUCTION PHASE

- Avoid ecologically sensitive habitats, wetlands, grazing corridors, and high-value agricultural lands where possible.
- Optimize transmission line routing to follow existing infrastructure corridors.
- Conduct pre-construction surveys for flora, fauna (especially birds), and cultural heritage.
- Apply fair compensation and livelihood restoration measures where agricultural land is affected.
- Coordination with Farmers and Infrastructure Adjustment: Coordinate construction scheduling with agricultural cycles to avoid critical cultivation or harvesting periods. Identify and map existing irrigation systems, drainage networks, and farm access routes, ensuring their protection, relocation, or technical adjustment where necessary to prevent soil waterlogging, erosion, or productivity loss.
- Conduct detailed geotechnical investigations along the SPP footprint and ETL tower locations to characterize lithology, weathering profiles, slope gradients, bearing capacity, and seismic response.
- Integrate slope stability and drainage considerations into the final layout and foundation design.

04. HOW ARE IMPACTS MINIMIZED?

WHAT IS PROPOSED TO MINIMIZE THE IMPACTS?

PRE-CONSTRUCTION PHASE

Key measures are integrated into the design phase to avoid or minimise potential impacts:

- **Stakeholder Engagement and local employment.** Prior to construction, coordination will be established with local authorities and, where relevant, agricultural cooperatives. Recruitment processes will be conducted transparently and in coordination with local authorities to ensure that information reaches affected communities. Priority will be given to local labour where skills are available, and equal opportunity principles will be applied, promoting fair access to employment, including for women, youth, and vulnerable groups.
- **Micro-Siting Optimization of Tower Locations.** During detailed design, tower locations will be optimised, where technically feasible, to minimise impacts on high-productivity agricultural land, irrigation infrastructure, orchards, and grazing areas..
- **Protection of cultural heritage:** Identified archaeological sensitive areas, including unregistered sites and the corridor surrounding the Katıran Dede Tomb (türbe), will be clearly marked and integrated into project drawings and site plans to ensure their protection during construction and communication to all relevant parties.
- **Fauna-sensitive fencing design:** Perimeter fencing will incorporate wildlife-permeable design features, where compatible with safety requirements, to reduce habitat fragmentation and maintain ecological connectivity. Fully impermeable fencing will be avoided unless technically necessary.

04. HOW ARE IMPACTS MINIMIZED?

WHAT IS PROPOSED TO MINIMIZE THE IMPACTS?

CONSTRUCTION PHASE

- **Soil management and reinstatement:** Topsoil will be carefully removed, stored, and reinstated following works to preserve soil quality and support site restoration
- **Erosion control:** Works will be scheduled, where possible, during dry periods to reduce erosion risks
- **Dust control:** Regular water spraying will be applied on exposed surfaces, excavation areas, and unpaved access roads to minimise dust generation
- **Waste management:** Uncontrolled burning of vegetation and waste will be prohibited, and all waste will be managed and disposed of at authorised facilities in accordance with applicable regulations

04. HOW ARE IMPACTS MINIMIZED?

WHAT IS PROPOSED TO MINIMIZE THE IMPACTS?

CONSTRUCTION PHASE

- **Labour standards:** Measures will be in place to prevent child labour, forced labour, and discrimination, ensuring fair and safe working conditions
- **Worker grievance mechanism:** A confidential and accessible system will be established for workers to raise concerns
- **Local Procurement:** Preference will be given to local suppliers and services, where feasible, to support the local economy
- **Equality and Inclusion:** Recruitment and employment practices will promote equal opportunities and fair access to jobs.

04. HOW ARE IMPACTS MINIMIZED?

WHAT IS PROPOSED TO MINIMIZE THE IMPACTS?

OPERATION PHASE

Measures implemented during operation to minimise impacts and maintain environmental and social performance include:

- **Infrastructure maintenance:** Regular inspection and maintenance of panels, structures, and fencing to prevent corrosion, damage, and debris accumulation, maintaining safe and visually acceptable conditions
- **Right-of-way and land use management:** Agricultural and grazing activities may continue beneath transmission lines, subject to safety requirements. Vegetation management will be coordinated with land users and avoid unnecessary removal of productive crops
- **Restoration and monitoring:** Temporarily disturbed areas will be rehabilitated prioritising natural regeneration, with supplementary planting of native species where required, and monitored to ensure effective vegetation recovery and restoration outcomes.
- **Labour oversight:** Periodic audits of working conditions, including contractors and suppliers
- **Training and awareness:** Regular refresher training on labour rights, non-discrimination, occupational health and safety, and respectful workplace behaviour

04. HOW ARE IMPACTS MINIMIZED?

WHAT IS PROPOSED TO MINIMIZE THE IMPACTS?

DECOMMISSIONING PHASE

- A Decommissioning Plan will be prepared prior to the end of the project life.
- Solar panels, electrical equipment, and associated infrastructure will be dismantled and removed in accordance with applicable regulations and good international practice.
- Hazardous materials (e.g., oils, electronic components) will be safely handled and disposed of through authorised facilities.
- Land will be restored, where applicable, in accordance with future regulatory requirements and land-use agreements.
- Temporarily affected areas will be rehabilitated using native species, with monitoring of vegetation recovery and restoration performance.
- Where feasible, local labour may be used during dismantling and restoration activities

05. HOW WILL THE STAKEHOLDER ENGAGEMENT BE LIKE?

Stakeholder engagement will be carried out throughout all Project phases, including planning, construction, and operation.

Who was engaged

- Local communities (Badak, Seslikaya, Bereket, Altay, Kemalpaşa, Alpağut)
- Local leaders (muhtars)
- Institutional stakeholders at district and provincial level
- Municipalities, cooperatives, professional chambers and civil society organisations

How engagement was conducted

- Community meetings and consultations
- Household interviews
- Focus group discussions
- Meetings with public authorities and institutions

Key outcomes

The Project is generally **perceived positively** by stakeholders.

Stakeholder support is primarily linked to:

- Effective management of environmental impacts
- Prioritisation of local employment
- Delivery of tangible local benefits

Ongoing engagement

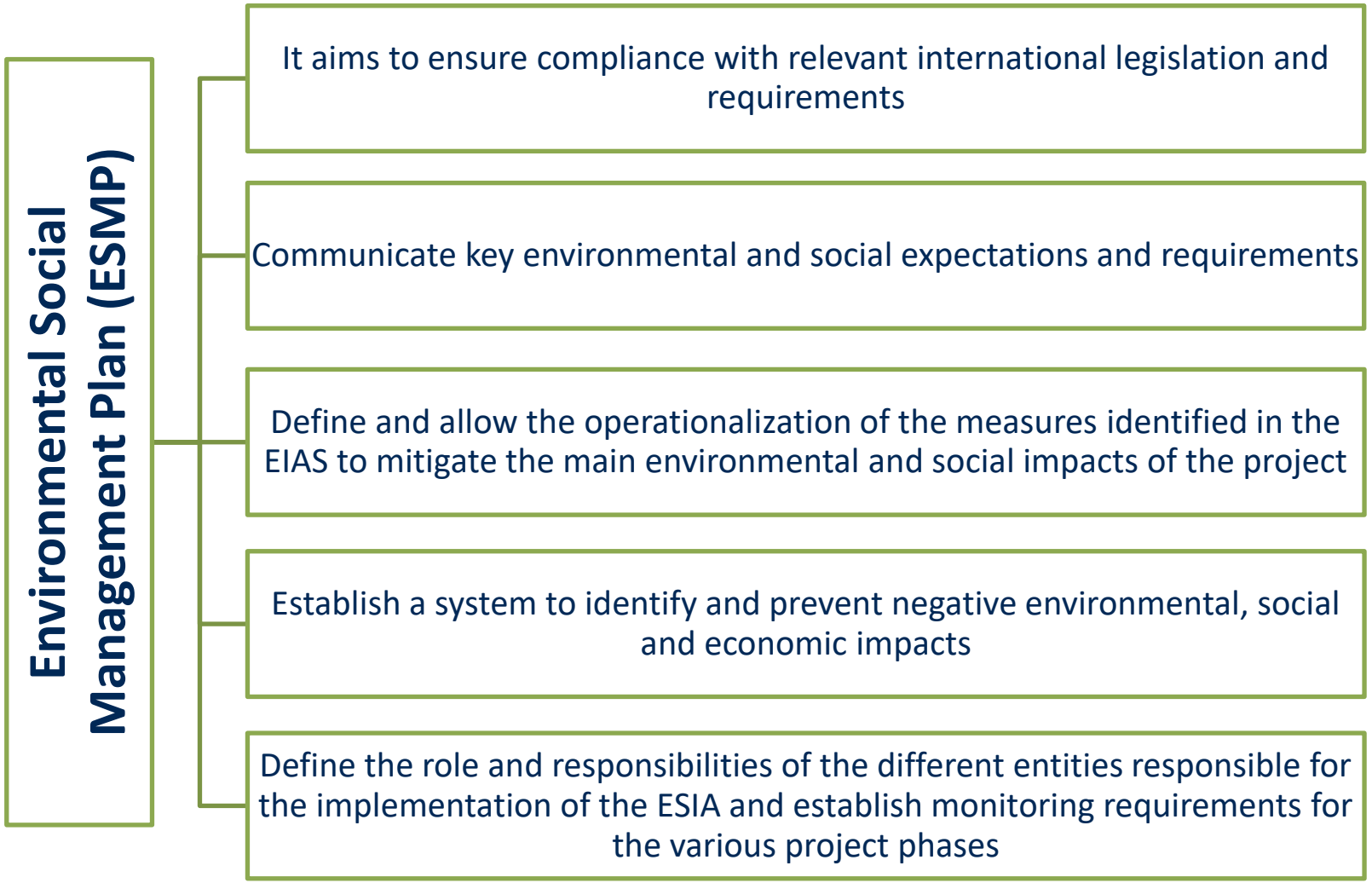
Engagement will continue throughout the Project, supported by a Stakeholder Engagement Plan and accessible grievance mechanisms.

05. HOW WILL THE STAKEHOLDER ENGAGEMENT BE LIKE?

Key stakeholder expectations and recommendations include:

- Prioritising local employment, particularly for young people and local residents;
- Effective management of environmental and social impacts, particularly the protection of agricultural land, farming activities, and livestock practices;
- Maintaining clear and regular information disclosure, supported by accessible feedback and grievance mechanisms;
- Supporting local capacity-building initiatives where feasible; and
- Ensuring inclusive communication so that vulnerable groups have access to Project information.

06. WHAT WILL ENVIRONMENTAL AND SOCIAL MANAGEMENT BE LIKE?



06. WHAT WILL ENVIRONMENTAL AND SOCIAL MANAGEMENT BE LIKE?

The Environmental and Social Management Plan covers the entire lifecycle from planning through decommissioning. **It also specifies the governance structure, review cycle, and the resources and budget required to implement the Plan.**

The ESMP ensures compliance, communicates E&S expectations, operationalizes ESIA measures, prevents adverse impacts, defines roles, and sets monitoring requirements. It also **consolidates general and specific measures and sets the framework for mitigation, management, and monitoring** across all phases.

The ESMP relies on a suite of thematic management plans and monitoring plans to be developed during pre-construction.

06. WHAT WILL ENVIRONMENTAL AND SOCIAL MANAGEMENT BE LIKE?

The following Management Plans should be elaborated and be part of the ESMP:

- Waste Management Plan – WMP
- Cultural Heritage Management Plan, including Chance Find Procedure – CHMP (including CFP)
- Employment and Workforce Management Plan – EWMP
- Traffic and Transportation Management Plan - TTMP
- Environmental and Social Training and Awareness Plan – ESTAP
- Community Health and Safety Management Plan - CHSMP
- Livelihood Restoration Framework – LFR
- Stakeholder Engagement Plan – SEP
- Occupational Health and Safety Plan – OHSMP
- Biodiversity Management Plan – BMP
- Emergency Preparedness and Response Plan – EPRP

The following Monitoring Plans should be elaborated and be part of the ESMP:

- Air Quality Monitoring Plan;
- Noise Monitoring Plan;
- Soil Monitoring Plan;
- Water Quality Monitoring Plan,
- Biodiversity Monitoring Plan;
- Social Monitoring Plan

07. CONCLUSIONS

The Project is expected to generate approximately 482.5 GWh of renewable electricity per year, contributing to Tosçelik's energy needs and Türkiye's renewable-energy and decarbonisation objectives.

The ESIA identifies potential environmental and social impacts, primarily during construction. These include land disturbance, vegetation clearance, dust, noise, traffic, waste generation and temporary disturbance to nearby communities and biodiversity. The Project will implement mitigation and monitoring measures through the Environmental and Social Management Plan and associated management plans.

Permanent habitat loss within the SPP footprint and potential effects on biodiversity associated with the ETLs, including the Bolkar Mountains Key Biodiversity Area crossing, will be managed through the Project's biodiversity mitigation and monitoring measures.

No physical resettlement is anticipated. Any potential economic displacement will be managed in line with applicable standards.

07. CONCLUSIONS

NEGATIVE IMPACTS	POSITIVE IMPACTS
• Loss of topsoil and reduction of agricultural functionality • Permanent land occupation and habitat modification • Temporary traffic, access and community-health impacts during construction	• Reduction in greenhouse-gas emissions through renewable electricity generation • Job Creation and Training during construction • Stimulation of local economy and economic development • Strengthening of the National Electrical Grid

The implementation of mitigation measures and environmental and social management plans will reduce and manage the Project's potential adverse impacts. Monitoring will be undertaken to verify the effectiveness of these measures and identify any need for corrective action.

Overall, the Project is expected to deliver renewable-energy, employment and economic benefits while managing residual environmental and social impacts through the mitigation and monitoring measures described in the ESIA and associated management plans.