



REPORT

Sivas Yağdonduran Solar Power Plant Project

Environmental and Social Impact Assessment - Scoping Report

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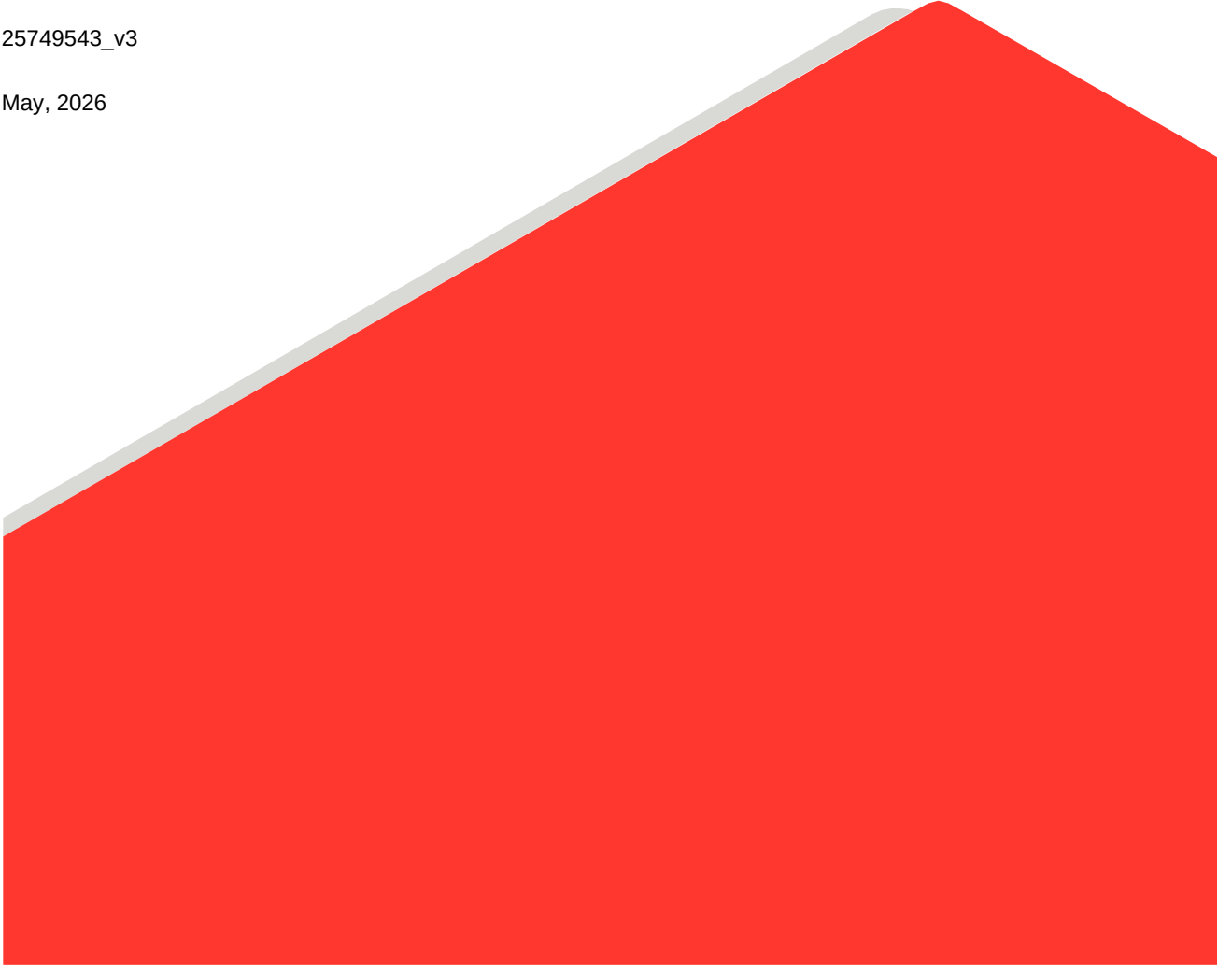
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APPENDICES

APPENDIX A
PROJECT STANDARDS

APPENDIX B
BIODIVERSITY SURVEY PLAN

APPENDIX C
SCOPING LEAFLET

Acronyms and Abbreviations

the Project or “Sivas SPP”	Sivas Yağdonduran Solar Power Plant Project
“ACWA” of “Client”	ACWA Power International
“WSP” or “WSP Türkiye”	WSP Danışmanlık ve Mühendislik Ltd. Şti.
AC	Alternating Current
ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
AoI	Area of Influence
BMP	Biodiversity Management Plan
CCRA	Climate Change Risk Assessment
CHMP	Cultural Heritage Management Plan
CIHA	Cultural Heritage Impact Assessment
CİMER	Presidential Communication Centre (Cumhurbaşkanlığı İletişim Merkezi)
CLC	Corine Land Cover
CLO	Community Liaison Officers
CSP	Concentrated Solar Power
DC	Direct Current
E&S	Environmental and Social
EBRD	European Bank for Reconstruction and Development
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EIA-AF	EIA Application File
EN	Endangered
EPFIs	Equator Principles Financial Institutions
EPs	Equator Principles
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
ESMP	Environmental and Social Management Plans
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System

ESR	Environmental and Social Requirements
ESSs	Environmental and Social Standards
ETL	Energy Transmission Line
EU	European Union
GAP	Gender Action Plan
GBVH	Gender-Based Violence and Harassment
GHG	Greenhouse Gas
IBA	Important Bird and Biodiversity Area
IBAT	Integrated Biodiversity Assessment Tool
IFC	International Finance Corporation
IPA	Important Plant Areas
KBA	Key Biodiversity Area
LRP	Livelihood Restoration Plan
LSA	Local Study Area
MENR	Ministry of Energy and Natural Resources
MoEUCC	Ministry of Environment, Urbanization and Climate Change
NGO	Non-Governmental Organization
NT	Near Threatened
NTS	Non-Technical Summary
PAPs	Project Affected Persons
PBL	Planetary Boundary Layer
PDoeUCC	Provincial Directorate of Environment, Urbanization and Climate Change
PG	Pasquill-Gifford
PRA	Preliminary Roost Assessment
PSs	Performance Standards
PV	Photovoltaic
RCIA	Rapid Cumulative Impact Assessment
REGIO	REGIO Cultural Heritage Management Consultancy
RSA	Regional Study Area
SEP	Stakeholder Engagement Plan
SPP	Solar Power Plant
SPS	Safeguard Policy Statement

TAA	Turkish Accreditation Agency ("TAA", TÜRKAK in Turkish)
TCDF	Task Force on Climate - Related Financial Disclosures
TEİAŞ	Turkish Electricity Transmission Corporation (Türkiye Elektrik İletim Anonim Şirketi)
THBMER	Research Centre for Turkish Folklore
ToC	Table of Contents
TOX	Total Organic Halogens
TPH	Total Petroleum Hydrocarbons
TÜİK	Turkish Statistical Institution
UNESCO	United Nations Educational, Scientific and Cultural Organization
VES	Visual Encounter Survey
VU	Vulnerable
WBG	World Bank Group
YEKA	Renewable Energy Resource Areas (Yenilenebilir Enerji Kaynak Alanları)

Assumptions and Limitations

IMPORTANT: This section should be read before reliance is placed on any of the opinions, advice, recommendations or conclusions herein set out.

- a) The purpose of this document is to present the Environmental and Social Impact Assessment (“ESIA”) Scoping Report pursuant to the appointment of WSP Danışmanlık ve Mühendislik Ltd. Şti. (“WSP” or “WSP Türkiye”) to act as consultant.
- b) Except for ACWA Power International (“ACWA” or “Client”), any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third parties. Should additional parties require reliance on this report, written authorization from WSP will be required. WSP disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No duty is undertaken, nor warranty nor representation made to any party in respect of the opinions, advice, recommendations or conclusions herein set out.
- c) The report is based on data and information provided to WSP by the Client and data and information collected up to issue date. It is based solely on a review of information and data obtained by the Client as described in this report, and discussion with representatives of the Client, as reported herein. Except as otherwise may be requested, WSP disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to WSP after the time during which WSP developed the ESIA Scoping Report.
- d) At this ESIA Scoping Report stage, no solid information has been provided to WSP regarding potential associated or temporary facilities, including the Energy Transmission Lines (“ETLs”). Accordingly, the physical, biological, and social (including archaeology) field studies completed to date, as well as those currently underway, do not encompass any associated or temporary facilities. The methodologies described in this report therefore limited solely to the Project Area and its Area of Influence. Should information on associated or temporary facilities become available during subsequent stages, such information will be managed through the Project’s management of change process by the Client, and additional field surveys or supplementary baseline data collection may be required once these facilities are confirmed.
- e) In evaluating the Project, WSP has relied in good faith on information provided by other individuals noted in this report. WSP has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the Client. WSP accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.
- f) WSP makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time; thus, the Client should review these issues with appropriate legal counsel.
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1.0 INTRODUCTION

ACWA Power International (hereinafter referred as “ACWA” or “Client”) retained WSP Danışmanlık ve Mühendislik Ltd. Şti. (herein after “WSP” or “WSP Türkiye”) to prepare the Environmental and Social Impact Assessment (“ESIA”) for the Sivas Yağdonduran Solar Power Plant (“SPP”) Project (hereinafter referred as “Sivas SPP” or “the Project”) in compliance with the national and international requirements.

ACWA is planning to construct and operate the Sivas SPP, a utility-scale, ground-mounted solar photovoltaic (“PV”) power plant located near the Mancılık, Havuz, Beyyurdu and Akpınar Villages of Kangal District of Sivas Province, central-eastern Türkiye. The Project will have an installed capacity of 1,000 MW and will be developed over a project footprint of about 2,000 hectares.

This document is the ESIA Scoping Report and has been prepared by WSP Türkiye to describe ESIA process to the Lenders, and to present the approaches and methodologies for the development of the ESIA for the Project.

This document presents the following sections: Introduction (Section 1), Objectives (Section 2), ESIA Process (Section 3), Project Description (Section 4), Project Alternatives (Section 5), Regulatory Framework (Section 6), Area of Influence (Section 7), Preliminary Environmental and Social Setting, Additional Studies Required (Section 8), Proposed Project Categorization (Section 9), Identification of the Project Impacts (Section 10), Proposed Table of Content of the ESIA (Section 11), Environmental and Social Management System (Section 12), Conclusions and Next Steps (Section 13) and References (Section 14).

2.0 OBJECTIVES

The scoping is an important part of the overall ESIA process since it allows an early understanding of a Project, its social and environmental settings, and defines the ESIA contents to ensure an appropriate development of the ESIA study. Accordingly, the present ESIA Scoping document will play a double role: (i) to guide the ESIA process and documents, and (ii) to present to Lenders the approaches and methodologies for the ESIA preparation.

The key objectives of this report are:

- To provide a preliminary description of the Project, based on the most recent documentation available;
- To outline the extent of the Project review;
- To review the existing baseline data and identify gaps to be further filled by the ESIA;
- To determine the environmental and social impacts to be scoped in an out of the ESIA;
- To perform a preliminary identification of the potential impacts;
- To describe the impact assessment methodology; and
- To define the Table of Contents (“ToC”) of the ESIA report.

3.0 ESIA PROCESS

3.1 Objectives of the ESIA

The ESIA will comply with both the national legislation and international standards. European Bank for Reconstruction and Development (“EBRD”) Environmental and Social Requirement (“ESR”) 1 - Assessment and Management of Environmental and Social Risks and Impacts, lists the overall objectives for an ESIA, including:

- to identify and assess environmental and social risks and impacts of and to the project;

- to adopt a mitigation hierarchy approach to address environmental and social risks and impacts from project activities on workers, affected communities and the environment;
- to integrate human rights risks and impacts into the assessment and management process;
- to implement an Environmental and Social Management System (“ESMS”) commensurate with the environmental and social risks and impacts of the project in a manner consistent with the relevant ESRs, including monitoring and reporting provisions;
- to require continuous improvement of the client’s environmental and social performance.

While, International Finance Corporation (“IFC”) Performance Standards (“PS”) 1 - Assessment and Management of Environmental and Social Risks and Impacts, lists the overall objectives for an ESIA, including:

- to identify and evaluate environmental and social risks and impacts of the project;
- to adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize, and, where residual impacts remain, compensate/offset for risks and impacts to workers, Affected Communities, and the environment;
- to promote improved environmental and social performance of clients through the effective use of management systems;
- to ensure that grievances from Affected Communities and external communications from other stakeholders are responded to and managed appropriately;
- to promote and provide means for adequate engagement with Affected Communities throughout the project cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.

On the other hand, Asian Development Bank (“ADB”) Environmental and Social Standard (“ESS”) 1 - Assessment and Management of Environmental and Social Risks and Impacts, lists the overall objectives for an ESIA, including:

- to screen and scope, assess, manage, and monitor the E&S risks and impacts of a project in a manner consistent with ESS1 and other applicable ESSs.
- to adopt a mitigation hierarchy approach to (i) anticipate and as a first priority, avoid E&S risks and impacts; (ii) where avoidance is not possible, minimize or reduce E&S risks and impacts to acceptable levels; and (iii) once E&S risks and impacts have been minimized or reduced, mitigate, restore, and/or compensate for adverse impacts on the environment and project-affected persons.
- to require that a project be environmentally and socially sound and sustainable, and support the integration of E&S considerations into the project decision-making process.
- to adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, considering gender-related risks, and ensure they are not disadvantaged in sharing development benefits and opportunities resulting from a project.
- to promote improved E&S performance, in ways which recognize and enhance borrower/client capacity.

For biodiversity-related impacts, the ESIA will apply the mitigation hierarchy in accordance with IFC PS6, EBRD ESR6 and ADB ESS6 requirements. Particular consideration will be given to the avoidance and minimisation of impacts arising from vegetation clearing, topsoil stripping, site levelling, construction activities and associated facilities. The biodiversity assessment will evaluate potential impacts on habitats, species of conservation

concern, ecosystem services, Natural Habitat, Critical Habitat and Priority Biodiversity Features (PBFs), where relevant. Where significant biodiversity impacts cannot be avoided, appropriate restoration, compensation and/or offset measures will be considered in accordance with applicable lender requirements. The assessment will examine potential pathways to achieve no net loss for Natural Habitat and PBFs, and net gain for Critical Habitat, where applicable, in accordance with lender requirements.

Accordingly, the main components of the assessment will include:

- the potential environmental and social impacts of the Project throughout the full development cycle – preconstruction, construction, operation, and decommissioning;
- a public consultation and disclosure plan to ensure that local communities and other key stakeholders are informed about the Project and have an opportunity to express their opinions concerning the Project;
- proposed mitigation activities to minimize adverse environmental impacts;
- the nature and significance of residual impacts (those adverse impacts that occur after mitigation has been applied) and ongoing monitoring and management plans to address them;
- the nature and significance of cumulative impacts; and
- a social management system to maximize benefits to the local community and promote sustainable development.

The following sections clarify the common approach to be used for the assessment across all disciplines, then provide an overview of the discipline-specific impact analyses to be applied.

3.2 Overall ESIA Approach

This chapter defines the ESIA process steps and the international standards to be considered during this process. Figure 1 illustrates the approach that is being adopted for the ESIA study, which reflects WSP Türkiye's ESIA methodology. A summary of the ESIA process is presented in Table 1.

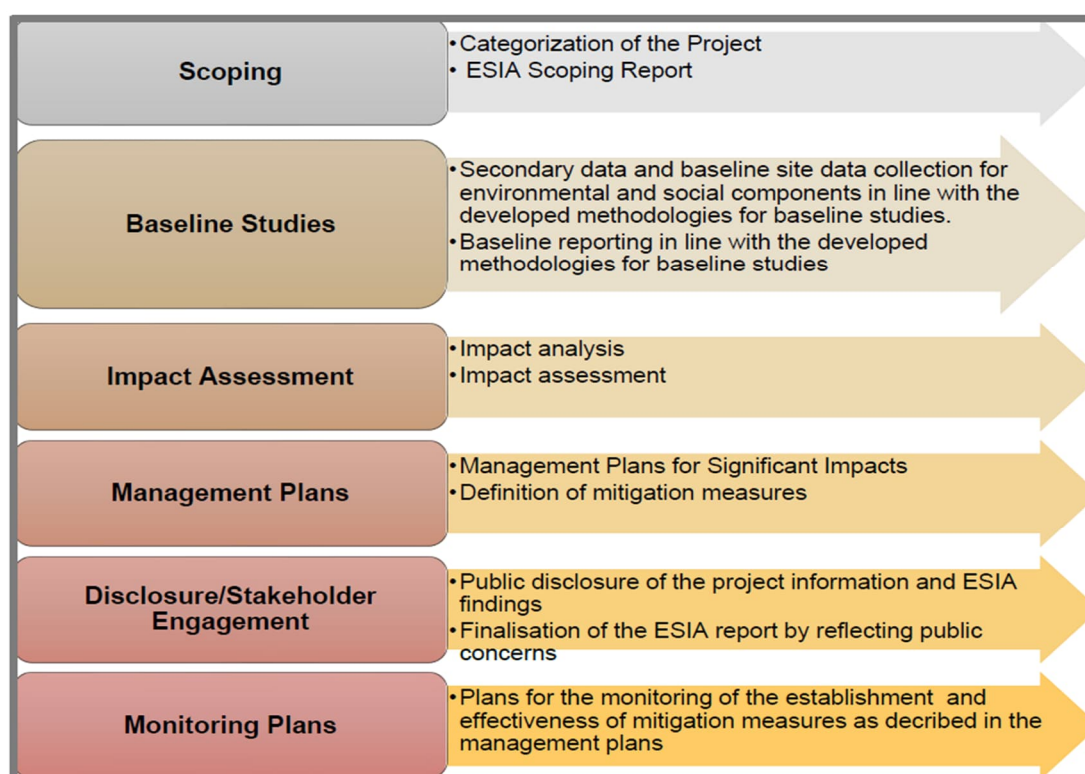


Figure 1: ESIA Process Steps

Table 1: Summary of the ESIA Process

Stage	Summary
Scoping	The aspects that will be included in the ESIA are defined and preliminarily assessed at the scoping stage. Potential Project's components, actions and impacts defined at this stage are verified and assessed during ESIA.
Baseline Studies	Available data on the current environmental and social conditions and main trends will be acquired for the components identified at the scoping stage. A bibliographic analysis and, where necessary, field surveys will be conducted for baseline data collection.
Stakeholder Engagement	Stakeholders will be involved in all stages of the ESIA process, to gather input on critical issues.
Impact assessment	Environmental and social impacts will be calculated, and mitigation measures will be defined for each environmental and social component. Residual environmental and social impacts of the Project will be presented in this stage, considering the effects of the mitigation measures.
Environmental and Social Management System and Plan (ESMS/ESMP)	ESMS/ESMP will describe the mitigation measures to be implemented according to the mitigation hierarchy to minimize the environmental and social impacts.
Disclosure	ESIA will be disclosed to the public and concerns will be collected. In the final ESIA, public concerns need to be addressed.

4.0 PROJECT DESCRIPTION

4.1 Project Background

ACWA is planning to construct and operate the Sivas SPP, a utility-scale, ground-mounted solar PV power plant located near the Mancılık, Havuz, Beyyurdu and Akpınar Villages of Kangal District of Sivas Province, central-eastern Türkiye. The Project will have an installed capacity of 1,000 MW and will be developed over a project footprint of about 2,000 hectares.

Within this regard, national Environmental Impact Assessment (“EIA”) process has been initiated on November 5th, 2025, in accordance with the requirements of Turkish EIA Regulation, and as of May 2026, the EIA process is finalized but EIA approval has not yet been issued.

The official land acquisition process has not been started for the Project yet.

4.2 Project Parties

The Project owner is ACWA, and it is anticipated that the routing, detailed design, construction, operation, maintenance and ownership of the Energy Transmission Lines (“ETLs”) will be the responsibility of the Turkish Electricity Transmission Corporation (Türkiye Elektrik İletim Anonim Şirketi, TEİAŞ).

The roles and the main responsibilities of the Project parties are summarized in Table 2 below.

Table 2: Project Parties

Parties	Responsible Party	Main Role & Responsibilities
Project Owner	Republic of Ministry of Energy and Natural Resources	- Owner of the Project - Assigning an “Appointed Company” for the Project - Carrying Expropriation and Land acquisition processes
Project Sponsor	ACWA	- Borrower of the Project finance - Contractor for Project execution - Overall responsibility for the development and implementation of the Project - Engagement and management of the EPC Contractor - Responsibility for the construction of the Project (through the EPC Contractor) - Operation of the Project (post-construction)
Engineering, Procurement, Construction (“EPC”) Contractor	<i>To be decided</i>	- Development of detailed Project design - Conducting early works and pre-construction activities - Execution of the construction works of the Project

Parties	Responsible Party	Main Role & Responsibilities
		Commissioning and handover support
ETLs' Owner	TEİAŞ	Design, construction, operation, maintenance and ownership of the ETLs
ESIA Consultant	WSP Türkiye (Independent national and international environmental and social consulting firm)	Preparation of: - ESIA Inception Report - ESIA Scoping Report - Preliminary Stakeholder Engagement Plan ("SEP") - ESIA Report - SEP - Non-Technical Summary ("NTS") - Biodiversity Management Plan ("BMP") - Livelihood Restoration Plan ("LRP") - Gender Action Plan ("GAP") / Gender-Based Violence and Harassment ("GBVH") Action Plan - Environmental and Social Management and Monitoring Plan ("ESMMP") - Environmental and Social Management Plans ("ESMPs") - Cultural Heritage Management Plan ("CHMP") including Chance Find Procedure - Public Consultation and Disclosure Report

*The ESIA will include a Critical Habitat Assessment within the Biodiversity Baseline Assessment (Section 6.2 of the ESIA Report). Accordingly, a standalone Critical Habitat Assessment report will not be prepared.

4.3 Project Overview

ACWA is planning to construct and operate the Sivas SPP, a utility-scale, ground-mounted solar PV power plant located near the Mancılık, Havuz, Beyyurdu and Akpınar Villages of Kangal District of Sivas Province, central-eastern Türkiye. The Project will have an installed capacity of 1,000 MW and will be developed over a project footprint of about 2,000 hectares, which is largely registered as pastureland according to the information provided by the ACWA.

The Project Area is situated within Renewable Energy Resource Areas (Yenilenebilir Enerji Kaynak Alanları, YEKA) declared by the Ministry of Energy and Natural Resources ("MENR") to promote the utilisation of domestic renewable energy resources. Within this framework, parts of Sivas Province, including Kangal District, have been designated as YEKA for solar energy development.

Although the Project is located within an area designated as YEKA, the Project itself is not a YEKA project. Instead, it is being developed under a separate legal and contractual framework based on an international agreement, granting the Project a special status distinct from standard YEKA tender-based developments.

The Sivas SPP is planned on specific parcels including 101/25, 101/30, 101/34, 115/42, 177/333 and 128/21 block/parcel located in Mancılık, Havuz, Beyyurdu and Akpınar Villages. Land use information is presented in Table 3, and the Land Parcels Overlapping with the Project Area map is presented in Figure 2.

Table 3: Land Use Status within the Sivas SPP Project Area

Province	District	Settlement	Plot / Parcel No.	Land Type	Ownership
Sivas	Kangal	Beyyurdu	128/21	Raw Soil	Treasury
Sivas	Kangal	Akpınar	115/42	Raw Soil	Treasury
Sivas	Kangal	Havuz	177/333	Raw Soil	Treasury
Sivas	Kangal	Mancılık	101/25	Agricultural land	Private
Sivas	Kangal	Mancılık	101/30	Agricultural land	Private
Sivas	Kangal	Mancılık	101/34	Raw Soil	Treasury

The Project's construction phase is planned to last approximately 2 years, followed by an estimated 25-year operational period. During these phases, it is anticipated that maximum 1,600 personnel will be employed during construction and 50 personnel during operation.

The Sivas SPP is designed to generate approximately 1,752 GWh of electricity per year. This level of generation is estimated to be sufficient to meet the annual electricity demand of roughly 500,000 people and is expected to make a significant contribution to Türkiye's renewable energy capacity and energy security by increasing the share of electricity produced from renewable resources and reducing external energy dependency.

Electricity generated by the Sivas SPP will be transmitted to the national grid via one or more high-voltage Energy Transmission Lines ("ETLs") and associated grid connection infrastructure. As of May 2026, the exact routes, length of the ETLs and the final grid connection points have not yet been determined. It is anticipated that the routing, detailed design, construction, operation, maintenance and ownership of the ETLs will be the responsibility of the TEİAŞ. Although the ETLs will be implemented by TEİAŞ, they are expected to be considered associated facilities for the purposes of the ESIA, and their environmental and social risks and impacts will be assessed to the extent information is available.

Within the scope of TEİAŞ's Investment Programme, route selection and Environmental Impact Assessment (EIA) studies are currently underway for the 400 kV, double-circuit, 1272 MCM, 15+15 km "Sivas SPP – Kangal Transmission Line" and the 400 kV, double-circuit, 1272 MCM, 230+230 km "Sivas SPP – Bozok Transmission Line". These transmission lines are not radial in nature. In addition to transmitting the generation output of the Sivas SPP to the interconnected grid, they are intended to serve multiple existing and future users and will constitute a critical component of the national east–west transmission corridor for integrating other planned renewable energy projects in the region into the transmission system. Furthermore, under the "Allocation of Renewable Energy Resource Areas and Grid Connection Capacities for Wind Energy" programme implemented by the Ministry of Energy and Natural Resources of the Republic of Türkiye, it is planned that one circuit of the aforementioned transmission line will be connected on an in-and-out basis to the R25–Sivas Wind Power Plant

(WPP) project, which was awarded connection capacity through the YEKA RES-2025 tenders held on 9 December 2025.

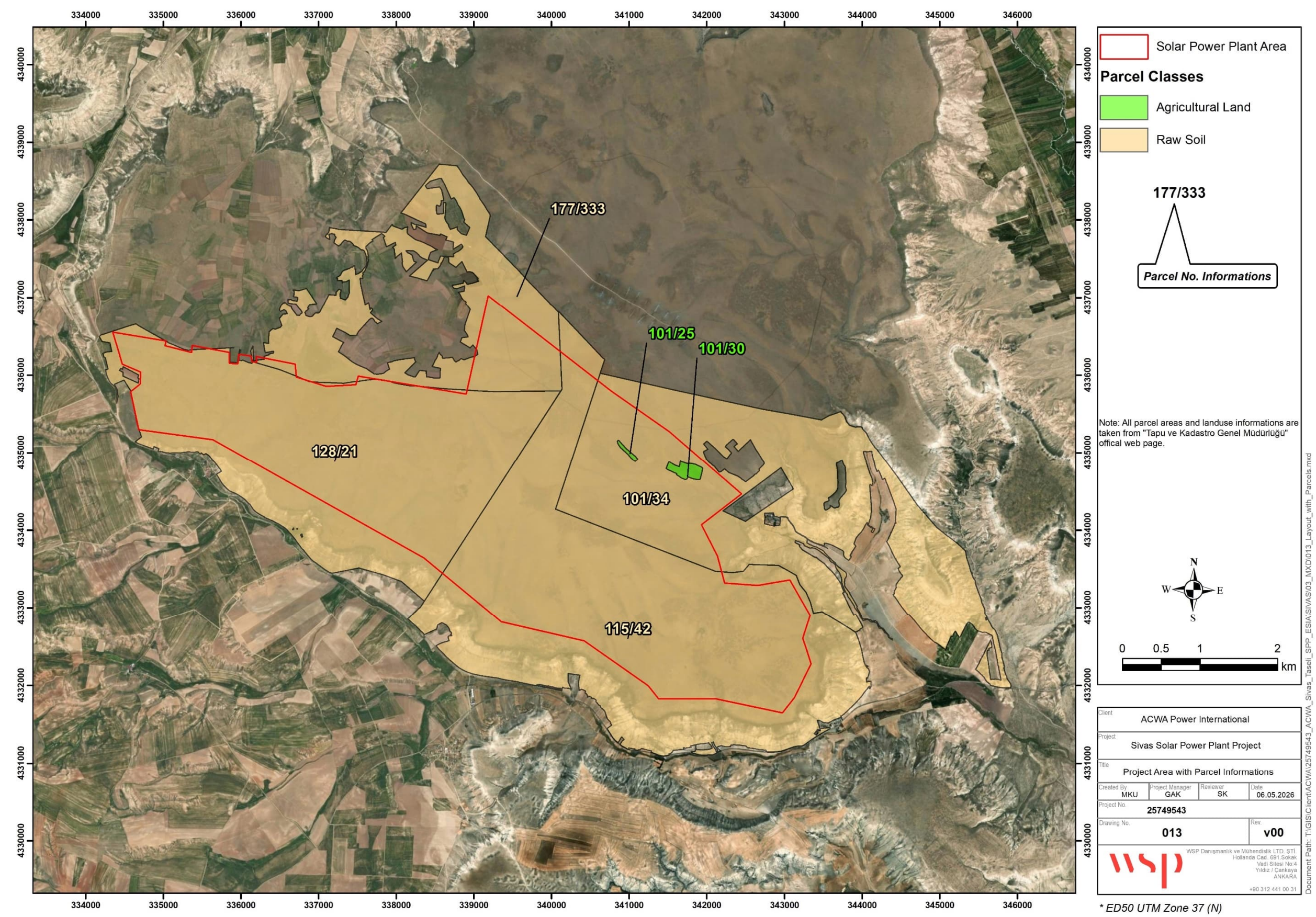


Figure 2: Land Parcels Overlapping with the Project Area

4.4 Project Location

The Project is located near the Mancılık, Havuz, Beyyurdu and Akpınar Villages of Kangal District of Sivas Province, central-eastern Türkiye.

The nearest settlements to the Project Area are presented in Table 4.

Table 4: Nearest Settlements to the Project

Province	District	Settlement	Distance to the Project Area from the Settlement Centre (km)
Sivas	Kangal	Beyyurdu	0.733
Sivas	Kangal	Akpınar	2,284
Sivas	Kangal	Mancılık	5,447
Sivas	Kangal	Humarlı	5,510
Sivas	Kangal	Havuz	5,600

Accordingly, the Project location map, the Project layout and the nearest settlements to the Project Area, are given in Figure 3, Figure 4 and Figure 5, respectively.

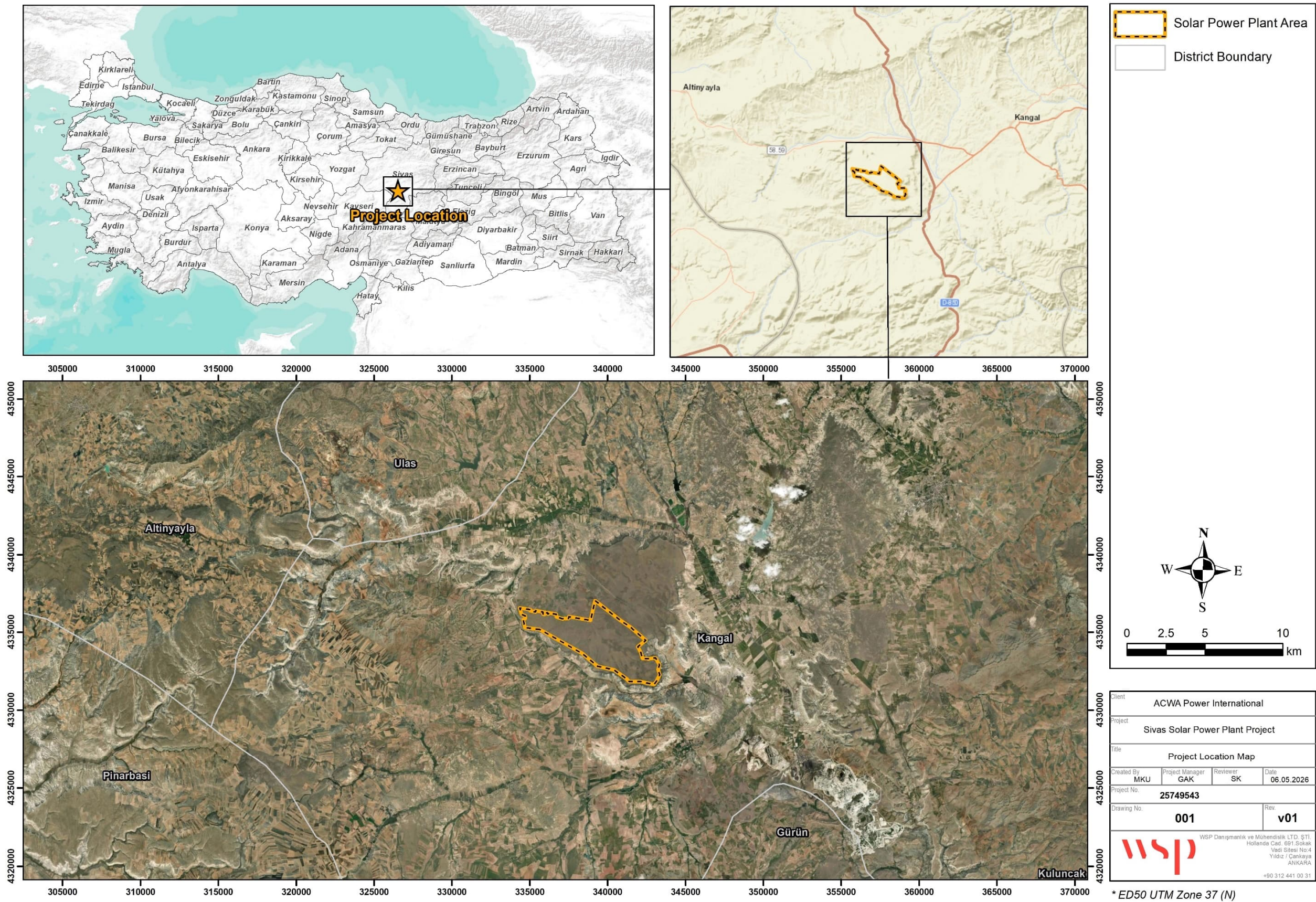


Figure 3: Project Location

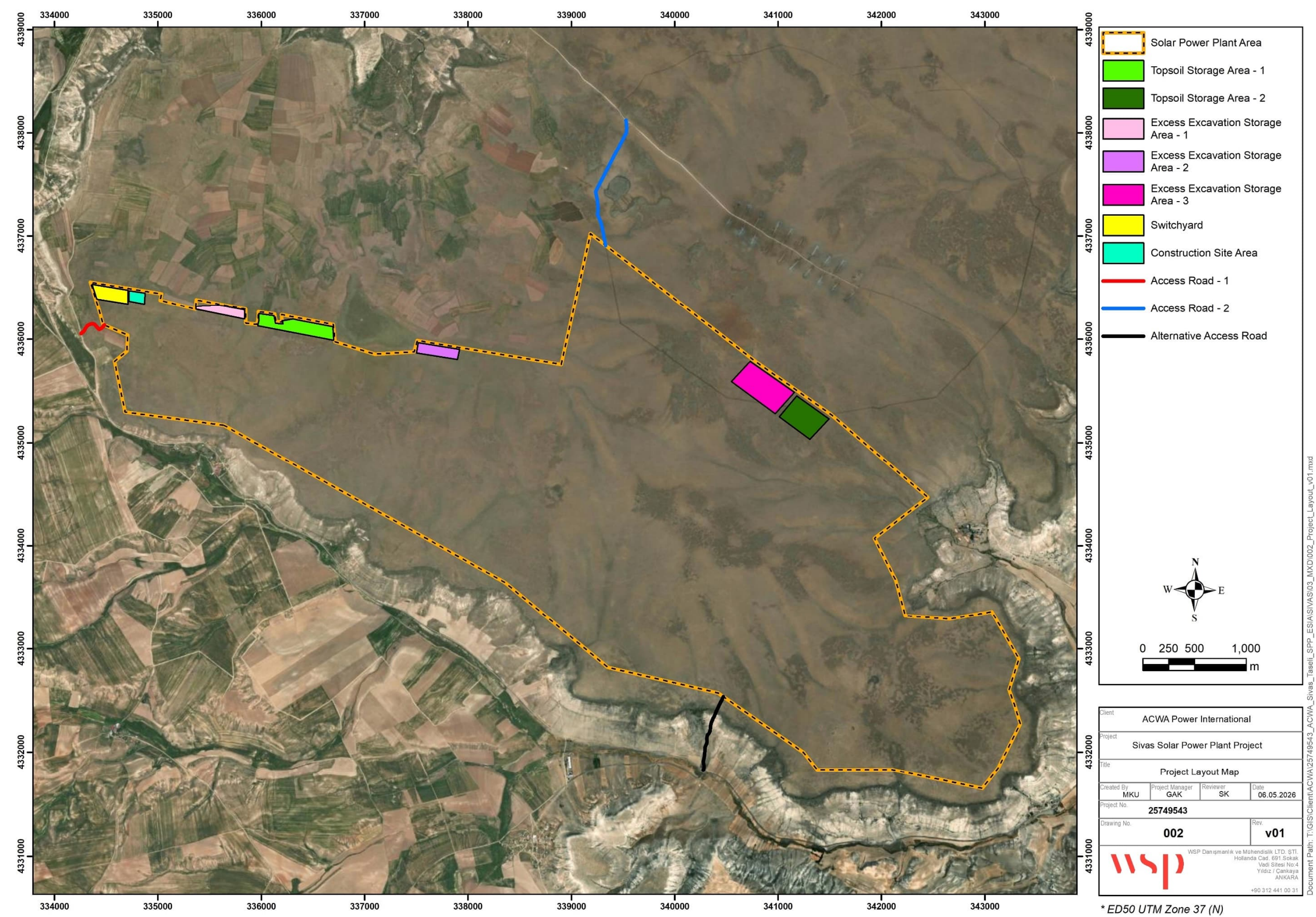


Figure 4: General Project Layout



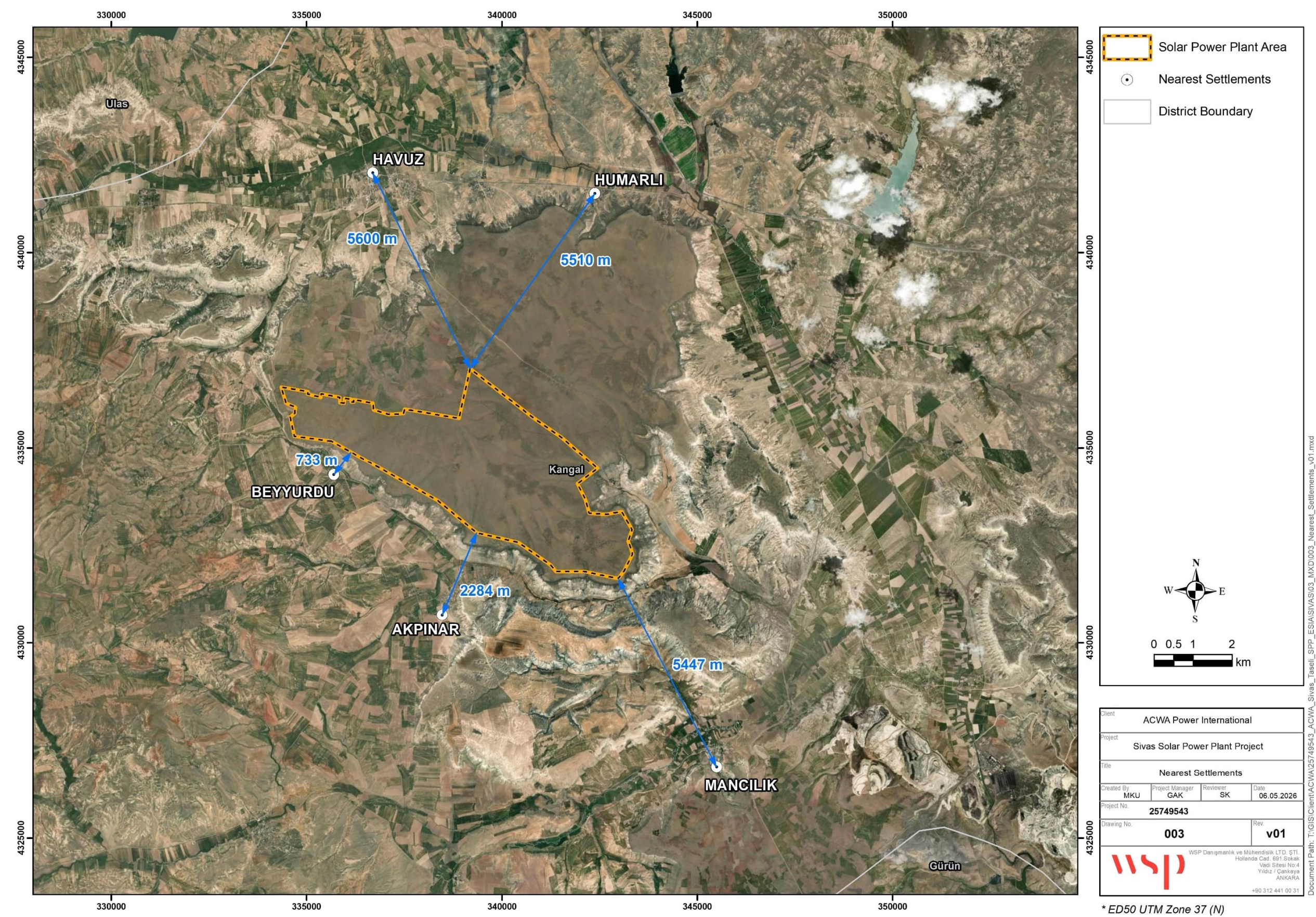


Figure 5: Nearest Settlements to the Project Area

4.5 Project Components

To perform the impact assessment of the Project, for each Project phase (construction, operation and decommissioning), the main “Project components” will be identified based on specific features (e.g. physical, characteristics of construction, and functionality).

Project components will include the followings:

- PV panels
- Switchyards
- Access roads
- Temporary facilities¹
- Associated facilities

The Project concept foresees the installation of approximately 2,000,000 PV modules with a nominal capacity of about 500 Wp per panel. The PV modules will be mounted on single-axis tracker systems. The tracker axis height is expected to be approximately 1.5 m above ground level. Depending on the module dimensions and tracker tilt angle, the clearance between the ground and the lowest edge of the PV modules may be approximately 0.5 m under maximum tilt conditions. The range of movement for the tracker typically varies by supplier but is generally expected to be around $\pm 60^\circ$. Accordingly, the PV array layout is given in the Figure 6.

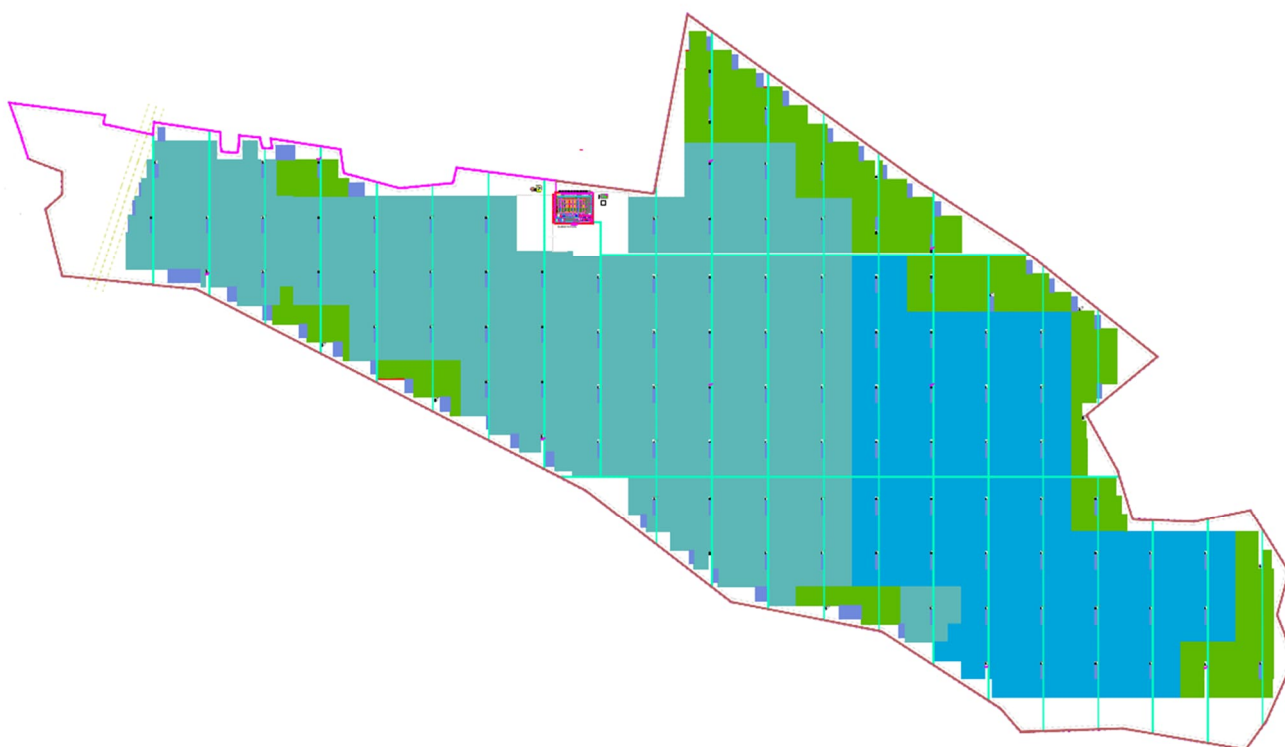


Figure 6: PV Array Layout

¹ Temporary facilities will include construction site areas, laydown areas, contractor compounds, and other temporary infrastructure required during the construction phase, as described further in Chapter 3 (Project Description).

The tracker structures are expected to be installed on pile foundations. Other project components may require concrete foundations, with excavation depths of up to approximately 3 m depending on the final structural design. Both Direct Current ("DC") and Alternating Current ("AC") cables are currently planned to be routed underground. The electrical system will connect the PV arrays to associated equipment such as inverters, medium-voltage power stations, transformers, and the switchyard.

The preliminary design indicates a pitch of approximately 7.5 m. Based on a module length of 2.382 m, the indicative row-to-row spacing is approximately 5.118 m for the Project.

The Project Area will be fully fenced. The fence is expected to consist of permanent hot-dip galvanized wire mesh with PE UV-resistant coating, supported by galvanized poles and installed on a concrete base. The minimum fence height will be 2.5 m. Additional security measures may include anti-intrusion protection, perimeter lighting, controlled access gates, and earthing where required.

Lighting will be installed within the Project Area for safety, security, and maintenance purposes. Outdoor lighting will generally operate during night-time hours through photocell control, while indoor lighting will include manual switches and motion-activated sensors. Permanent lighting is expected at buildings, perimeter fences, gates, access points, roads, power blocks, medium-voltage power stations, and switchyard areas. Portable industrial lighting may also be used for maintenance activities during night-time works.

The final design of the Project will be confirmed during the detailed engineering stage. Therefore, the information provided in this section reflects the current design basis available for the ESIA Scoping stage and may be updated as the EPC design progresses.

Within the scope of TEİAŞ's Investment Programme, route selection and Environmental Impact Assessment (EIA) studies are currently underway for the 400 kV, double-circuit, 1272 MCM, 15+15 km "Sivas SPP – Kangal Transmission Line" and the 400 kV, double-circuit, 1272 MCM, 230+230 km "Sivas SPP – Bozok Transmission Line". These transmission lines are not radial in nature. In addition to transmitting the generation output of the Sivas SPP to the interconnected grid, they are intended to serve multiple existing and future users and will constitute a critical component of the national east–west transmission corridor for integrating other planned renewable energy projects in the region into the transmission system. Furthermore, under the "Allocation of Renewable Energy Resource Areas and Grid Connection Capacities for Wind Energy" programme implemented by the Ministry of Energy and Natural Resources of the Republic of Türkiye, it is planned that one circuit of the aforementioned transmission line will be connected on an in-and-out basis to the R25–Sivas Wind Power Plant (WPP) project, which was awarded connection capacity through the YEKA RES-2025 tenders held on 9 December 2025.

Further detailed information about the technical specification of the Project components will be provided in the ESIA Report. The number of temporary facilities to be used and/or constructed within the scope of the Project are also summarized in Table 5.

Table 5: Number of Temporary Facilities within the Scope of the Project

Facility	Number
Excess Excavation Material Storage Areas	3
Topsoil Storage Areas	2
Construction Site Area	1
Camp Site Area	1

- **Excess Excavation Material Storage Areas** will be used for the temporary storage of excavated materials generated during site preparation and construction works. These areas will be managed to prevent erosion, dust emissions, and potential contamination of surrounding soils and water resources.
- **Topsoil Storage Areas** will be designated for the separate storage of stripped topsoil. This topsoil will be preserved for later use in site rehabilitation and landscaping, ensuring the restoration of soil productivity and vegetation cover after construction.
- **Construction Site Area** will accommodate site offices, worker facilities, equipment storage, and material laydown areas. This area will serve as the main coordination and operational area during the construction phase, providing the necessary space for daily site management, workforce organization, material handling, and equipment use.
- **Camp Site Area** will be designed as a hybrid accommodation system (on-site camp supported by local commuter buses) with an estimated peak capacity of approximately 1,000–1,200 beds, located about 5–15 km from the site and fully self-sufficient in terms of medical, catering, sanitation, and recreational facilities. The camp units will be fully insulated to withstand winter conditions (down to -15°C to -20°C). The final location and design of the construction worker accommodation have not yet been confirmed and will be assessed as part of the ESIA once additional project information becomes available.

According to the EBRD's Environmental and Social Policy, associated facilities are defined as facilities or activities that are not financed by the EBRD as part of the project but which, in the view of the EBRD, are significant in determining the success of the project or in producing agreed project outcomes. These are new facilities or activities: (i) without which the project would not be viable, and (ii) which would not be planned, constructed, expanded or carried out if the project did not exist².

Similarly, the IFC PS 1 defines associated facilities as facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable³.

Additionally, the ADB ESS 1 defines associated facilities as new facilities or activities that are not funded as part of a project and, in the judgment of ADB, are (i) directly and significantly related to the project; (ii) developed, or contemporaneously planned to be developed, with the project; and (iii) necessary for the project to be viable and would not have been developed if the project did not exist.

Accordingly, associated facilities will be defined and assessed in the ESIA Report.

4.6 Project Schedule

The Project's construction phase is planned to last approximately 2 years, followed by an estimated 25-year operational period. The Project schedule and identification of the main Project activities are presented in Table 6.

² EBRD's Environmental and Social Policy, October 2024

³ IFC's Performance Standards on Environmental and Social Sustainability, January 2012

Table 6: Project Schedule

Main Benchmarks	2026				2027				2028			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1. Planning Phase												
1.1 EIA Studies												
2. Construction Phase												
2.1. Road and Land Preparation Works												
2.2. Construction and Electrical Works												
2.3. Installation of the Panels												
2.4. Acceptance by the Relevant Authority												
3. Commissioning Phase												
3.1. Commissioning Activities												

4.7 Project Phases

4.7.1 Construction Phase

The construction phase of the Project will consist of the following activities:

- Land preparation and construction activities
 - Vegetation clearing
 - Topsoil/soil removal and storage
 - Surface levelling and grading
 - Material transportation (transportation of construction materials)
 - Construction and operation of temporary and associated facilities
 - Installation of PV panels
- Electromechanical works

During construction, it is anticipated that maximum 1,600 personnel will be employed.

To the extent available at the time of assessment, the ESIA Report will provide further details regarding construction methodologies, equipment requirements, workforce estimates and construction sequencing.

4.7.2 Operation Phase

The operation phase of the Project will consist of the following activity:

- Plant/infrastructure operation

The operation of the Project will be conducted by ACWA. During operation, it is anticipated that 50 personnel will be employed.

The operation phase will include routine operation and maintenance of the solar facility, vegetation management, inspection and maintenance of electrical infrastructure, security activities and ancillary support functions. Further details will be presented in the ESIA Report.

4.7.3 Decommissioning Phase

To date there is no information available regarding the decommissioning of the Project. The ESIA Report will, where feasible and based on available information, present preliminary assumptions regarding the decommissioning approach.

5.0 PROJECT ALTERNATIVES

At the earlier stages of the Project, many alternatives for location, technology, size etc. are being considered. EBRD ESR 1 and IFC PS 1 require full and detailed justification for any proposed alternatives through the environmental and social risks and impacts identification and assessment process. Based on that, no-project alternative and the alternatives of the Project Area and technology alternatives will be elaborated in more detail in the ESIA report.

5.1 No – Project Alternative

“No - project alternative” implies that Project will not be realized, no construction activities will occur and therefore there will be no positive and adverse environmental and social impacts or risks connected to the Project, nor socio-economic benefits would accrue to the nearby communities and the country in general.

The implementation of the Project, with an installed capacity capable of meeting the annual electricity demand of approximately 500,000 people, is expected to make a significant contribution to increasing Türkiye's share of renewable energy generation. By supporting a diversified and sustainable energy mix, the Project will help reduce dependence on imported energy resources, enhance national energy security, and contribute to the Türkiye's long-term sustainable development objectives.

In contrast, under the no-project alternative, the planned renewable energy generation capacity would not be realized. This would result in continued reliance on conventional and imported energy sources to meet growing electricity demand, thereby maintaining external energy dependency and potentially increasing risks to energy supply security.

5.2 Site Alternatives

Potential locations for the Project were evaluated during the site selection phase based on a preliminary assessment of technical, environmental, and socio-economic considerations. The objective of the site alternatives analysis was to identify a location suitable for efficient solar energy generation while avoiding or minimizing potential environmental and social impacts. The site selection criteria considered include, but are not limited to, the following:

- Meeting the Project criteria
- Adequate distance from residential areas
- Land characteristics
- Archaeological and biological important areas
- Proximity to legally protected areas
- Interaction with surface water bodies and flood-prone areas
- Proximity to existing road networks

It should also be noted that the Project Area was not selected by ACWA through an independent site selection process. The Project Area had already been designated by the MENR as a Renewable Energy Resource Area (Yenilenebilir Enerji Kaynak Alanları, YEKA), and this designation was a key determining factor for the location of the Project which was chosen by MENR. Accordingly, ACWA's ability to influence or modify the overall site location was limited, and the alternatives assessment was therefore focused on reviewing the suitability of the designated area and identifying potential measures to avoid or minimize environmental and social impacts within the given site boundaries.

Notwithstanding the fact that the Project Area was predetermined through the MENR designation process, the ESIA will consider opportunities to further avoid and minimise environmental and social impacts within the designated Project Area. This will include consideration of the Project layout and micro-siting arrangements in relation to identified biodiversity sensitivities, habitats, species of conservation concern, cultural heritage features, water resources, and other sensitive receptors. Where relevant and based on readily available information, alternative layout configurations and design refinements will be evaluated as part of the application of the mitigation hierarchy.

5.3 Technology Alternatives

During the technology selection phase of the Project, different solar energy generation technologies were considered, namely PV Solar Technology and Solar Thermal Technologies, also known as Concentrated Solar Power ("CSP"). Both technologies are based on the utilization of solar energy; however, they differ in terms of energy conversion principles, technical requirements, and environmental and operational characteristics.

PV solar technology directly converts sunlight into electricity through semiconductor materials known as PV cells. These systems are modular in nature, relatively simple to install, and well established for large-scale power generation. In contrast, solar thermal technologies first convert solar energy into heat, which is then used either directly or to generate electricity through additional mechanical systems. CSP systems generally require more complex infrastructure, including mirrors, receivers, and thermal storage units, and are typically associated with higher land, water, and operational requirements.

The main considerations supporting the selection of PV technology for the Project are summarized below:

- Direct conversion of solar radiation into electricity, resulting in simpler system design and reduced energy losses
- Wide applicability and proven performance under a range of climatic and site conditions
- Relatively high energy conversion efficiency, typically ranging between 5% and 30% depending on panel type and configuration
- Modular structure, allowing flexible layout design, ease of installation, and phased construction if required
- Lower operational complexity and maintenance requirements compared to solar thermal systems
- No requirement for water during electricity generation, unlike some solar thermal technologies
- Reduced environmental footprint, due to the absence of combustion processes and limited use of moving mechanical components

Based on the considerations outlined above, PV solar technology was selected as the preferred option for the Project. This technology is considered technically feasible, environmentally sound, and well aligned with the Project objectives, while enabling efficient electricity generation with comparatively lower environmental and operational impacts when compared to alternative solar thermal technologies.

In addition to technical feasibility and environmental considerations, the ESIA will consider opportunities to improve resource efficiency throughout the Project lifecycle. This will include consideration of measures to minimise raw material consumption, optimise water and energy use, reduce waste generation and, where appropriate, support the application of circular economy principles. Further opportunities for design optimisation may be identified and assessed as engineering design progresses and additional Project information becomes available.

6.0 REGULATORY FRAMEWORK

This chapter describes the legal framework to be considered in the ESIA Report and other related documents while describing the management of environmental and social impacts and risks related to the Project. In this context, the Turkish laws and requirements, EBRD ESRs, IFC PSs, ADB ESSs, Asian Infrastructure Investment Bank (“AIIB”) Environmental and Social Framework (“ESF”), Equator Principles (“EPs”) IV and relevant European Union (“EU”) Directives will be taken into consideration.

The Project will comply with the most stringent requirement between national legal requirements and international requirements.

6.1 National Legal and Regulatory Framework

6.1.1 Environmental Legal and Regulatory Framework

The Turkish legal framework for environmental protection was developed in line with national and international initiatives and standards, and some of them have been revised recently to be harmonized with the EU Directives in the scope of pre-accession efforts of Türkiye to the EU.

The Turkish Environment Law No. 2872, which came into force in 1983, deals with environmental issues on a very broad scope. According to the basic principles that govern the application of the Environment Law, and as stated in the Constitution, citizens as well as the state bear responsibility for the protection of environment. Complementary to the Environment Law and its regulations, other laws also govern the protection and conservation of the environment, the prevention and control of pollution, and the implementation of measures for the prevention of pollution.

The Environment Law of 1983 has a comprehensive structure that has a holistic and integrated vision for the environment. “Polluter pays” and “user pays” principles and carrying capacity concepts form the basis of regulatory tools in the Environmental Law. The Law is supported by numerous Regulations and decrees prepared or updated in the process of alignment with EU legislation, thus contributing significantly to compensating the gaps within the former legislative system of Türkiye.

The EU legal instruments, interest approximately 300 directives covering environmental protection, polluting and other activities, production processes, procedures, and procedural rights as well as products, and cross-cutting issues (e.g., EIAs, access to information on the environment and combating climate change). Quality and related emissions standards are set for air, waste management, water, nature protection, industrial pollution control, chemicals and genetically modified organisms, noise and nuclear safety and radiation protection. The EIA Directive of 1985 has been amended three times, in 1997, in 2003 and in 2009. The initial Directive of 1985 and its three amendments have been codified by Directive 2011/92/EU of December 13th, 2011. Directive 2011/92/EU has been amended in 2014 by Directive 2014/52/EU.

The EIA Regulation, which dates originally from 1998, has had several revisions and was most recently amended on July 29th, 2022. Although the EIA Regulation has been derived from the EU EIA Directive, the integration of various Turkish conventions, sub-laws and governmental decrees makes the EIA Regulation distinctive in certain respects.

The lead government agency, responsible for environmental protection in Türkiye is the Ministry of Environment, Urbanization and Climate Change (“MoEUCC”). MoEUCC is the responsible organization for the issuing and implementation of policies and legislation adopted for protection and conservation of the environment, and for sustainable development and management of natural resources.

6.1.2 Environmental Impact Assessment Procedure in Türkiye

The “EIA Regulation” was published in the Official Gazette on July 29th, 2022. According to the regulation, the industries or facilities listed in Annex 1 and Annex 2 of the regulation must obtain an EIA permit. The EIA process is carried out by companies licensed by the MoEUCC. The report submission and official correspondence process is carried out online.

The projects with high production capacity are listed in Annex 1 and the EIA submission and approval process is more detailed and longer. It includes scoping and public participation steps, and is directed by the MoEUCC, the central authority. During the process, an application report and an EIA Report are prepared by a licensed company. The “EIA Positive” or “EIA Negative” decision is obtained at the end of the process.

The projects listed in Annex 2 have shorter EIA processes and comprise of smaller industries. The EIA submission and approval process does not include the scoping and public participation steps and is directed by the MoEUCC. During the process, a PDF (Pre-EIA Report) is prepared by authorized licensed company. If the “EIA Positive” decision is obtained, the Project can be implemented. However, if “EIA Report need to be prepared” decision is obtained, the same process for the Annex I project, needs to be initiated.

The Turkish EIA procedure follows a process of selection and elimination criteria, with the final decision of the MoEUCC. The MoEUCC, establishes a “EIA Commission”, which has considerable influence on the review and supervision of the EIA report. The EIA commission comprises representatives from relevant institutions and

establishments, Ministry authorities and Project representatives. This commission is responsible for defining all required studies for the EIA report.

The MoEUCC, when deciding regarding the EIA Report, takes into consideration the studies and decisions made by the EIA Commission.

As so required, the Ministry may invite research and specialist organizations, professional associations/chambers, trade unions, associations and Non-Governmental Organization (“NGO”) representatives to the commission meetings. Main steps in the Turkish EIA Process to be followed are as follows:

- Firstly, site visit by informing the Provincial Directorate of Environment, Urbanization and Climate Change (“PDoEUCC”) before the EIA Application File (“EIA-AF”) studies;
- Submission of the EIA-AF to the MoEUCC;
- Public Participation Meeting (announcements in one national and one local newspaper need to be given and other notifications need to be made before the meeting);
- Issuing of the special EIA format by the MoEUCC for the Project (the special EIA format defines baseline and impact assessment studies required specifically for the Project) based on the comments of the EIA commission and outcomes from the Public Participation meeting;
- Submission of the EIA Report to the MoEUCC;
- Commission meetings during the EIA process;
- Revision and finalization of the EIA Report;
- Public disclosure of the Final EIA Report by MoEUCC or PDoEUCC;
- Obtaining final decision from the MoEUCC (EIA Positive or EIA Negative).

6.1.3 Land Acquisition Legislation

Fundamental provisions regarding land ownership in Türkiye are set out under the Land Registry Law (Law No. 2644). Cadastral arrangements are subject to the Cadastral Law (Law No. 3402). Nevertheless, both Land Registry and Cadastral Laws have provisions concerning miscellaneous laws. Some of the laws concerning the land acquisition and registry are as follows:

- Expropriation Law (No.2942, 1983, amended in 2022)
- Pasture Law (No. 4342, 1998, amended in 2018)
- Cadastral Law (No. 3402, 1987, amended in 2020)
- Land Registry Law (No. 2644, 1934, amended in 2021)
- Agricultural Reform Law on Land Arrangement in Irrigated Areas (No. 3083, 1984, amended in 2018)
- Law on Soil Protection and Land Use (No. 5403, 2005, amended in 2020)
- Land Registry Code (No. 28738, 2013, amended in 2016)

Turkish National Regulations that are applicable to the Project are provided in APPENDIX A.

6.1.4 Current National Labour and H&S Legislation

Labour and occupational health & safety issues in Türkiye are governed by the Ministry of Labour and Social Security. Turkish law and the major regulations relevant to labour and working conditions are given in APPENDIX A.

6.2 International Agreements

Türkiye is a signatory to several key international environmental agreements for the protection of environmental and natural resources the protection of social and cultural resources, labour relations and workers' rights and has incorporated their provisions into national legislation. The key international agreements are listed in APPENDIX A.

Türkiye has not signed the Convention on the Protection and Promotion of the Diversity of Cultural Expressions, Paris, 2005.

6.3 International Environmental and Social Standards

6.3.1 European Union Environmental Legislation

The EU Directives considered during the preparation of this report are listed in APPENDIX A.

6.3.2 EBRD Environmental and Social Policy (2024)

The EBRD's ESRs constitute a set of mandatory provisions designed to ensure that projects are managed in accordance with international good practice in environmental and social performance. These requirements set out the fundamental principles that must be applied to identify, prevent, and manage potential impacts of investment projects on the environment, communities, occupational health and safety, working conditions, and stakeholder engagement. These requirements are outlined below:

- ESR 1: Assessment and Management of Environmental and Social Risks and Impacts
- ESR 2: Labour and Working Conditions
- ESR 3: Resource Efficiency and Pollution Prevention and Control
- ESR 4: Health, Safety and Security
- ESR 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- ESR 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESR 7: Indigenous Peoples
- ESR 8: Cultural Heritage
- ESR 9: Financial Intermediaries
- ESR 10: Stakeholder Engagement

6.3.3 IFC Performance Standards (2012)

The eight PSs establish the standards that a project is to meet throughout the life of an investment by the IFC or any other relevant financial institution. These are the following:

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
- Performance Standard 2: Labor and Working Conditions
- Performance Standard 3: Resource Efficiency and Pollution Prevention

- Performance Standard 4: Community Health, Safety, and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- Performance Standard 7: Indigenous Peoples
- Performance Standard 8: Cultural Heritage

6.3.3.1 IFC General Environmental, Health, and Safety (“EHS”) Guidelines

The General EHS Guidelines (dated April 30th, 2007) provide guidance to users on common EHS issues potentially applicable to all industry sectors. During the design, construction, operation and decommissioning of a project (the project lifecycle) the project owner will consider ambient conditions and apply pollution prevention and control technologies and practices (techniques) that are best suited to avoid or, where avoidance is not feasible, minimize or reduce adverse impacts on human health and the environment while remaining technically and financially feasible and cost-effective.

The General EHS Guidelines are listed below:

1. Environmental

- 1.1. Air Emissions and Ambient Air Quality
- 1.2. Energy Conservation
- 1.3. Wastewater and Ambient Water Quality
- 1.4. Water Conservation
- 1.5. Hazardous Materials Management
- 1.6. Waste Management
- 1.7. Noise
- 1.8. Contaminated Land

2. Occupational Health and Safety

- 2.1. General Facility Design and Operation
- 2.2. Communication and Training
- 2.3. Physical Hazards
- 2.4. Chemical Hazards
- 2.5. Biological Hazards
- 2.6. Radiological Hazards
- 2.7. Personal Protective Equipment (PPE)
- 2.8. Special Hazard Environments
- 2.9. Monitoring

3. Community Health and Safety

- 3.1. Water Quality and Availability
- 3.2. Structural Safety of Project Infrastructure
- 3.3. Life and Fire Safety (L&FS)
- 3.4. Traffic Safety
- 3.5. Transport of Hazardous Materials
- 3.6. Disease Prevention
- 3.7. Emergency Preparedness and Response

4. Construction and Decommissioning

- 4.1. Environment
- 4.2. Occupational Health & Safety
- 4.3. Community Health & Safety

6.3.3.2 IFC EHS Guidelines for Electric Power Transmission and Distribution

Published on April 30th, 2007, the EHS Guidelines for Electric Power Transmission and Distribution include information relevant to power transmission between a generation facility and a substation located within an electricity grid, in addition to power distribution from a substation to consumers located in residential, commercial, and industrial areas. The document addresses the following issues:

1. Environmental

- 1.1. Terrestrial habitat alteration
- 1.2. Aquatic habitat alteration
- 1.3. Electric and magnetic fields
- 1.4. Hazardous materials

2. Occupational Health and Safety

3. Community Health and Safety

6.3.4 ADB Environmental and Social Framework (2026)

ADB ESF which will replace the old Safeguard Policy Statement ("SPS") and take effect in January 2026. This updated framework modernizes safeguard requirements to be more aligned with other multilateral development banks and to better address climate change, biodiversity, labour conditions, and stakeholder engagement in ADB-financed projects. The ESF consists of a new Environmental and Social ("E&S") Policy and 10 mandatory ESSs that borrowers and clients must implement throughout a project cycle to manage environmental and social risks and impacts, promote responsible labour practices, conserve natural resources, protect cultural heritage, and ensure meaningful stakeholder engagement and disclosure of information. These standards are outlined below:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts
- ESS2: Labor and Working Conditions

- ESS3: Resource Conservation and Pollution Prevention
- ESS4: Health, Safety, and Security
- ESS5: Land Acquisition and Land Use Restriction
- ESS6: Biodiversity Conservation and Sustainable Natural Resources Management
- ESS7: Indigenous Peoples
- ESS8: Cultural Heritage
- ESS9: Climate Change
- ESS10: Stakeholder Engagement and Information Disclosure

6.3.5 AIIB Environmental and Social Framework (2024)

The AIIB ESF provides the Bank's system for ensuring that all financed projects are environmentally and socially sustainable. It incorporates international good practices into project planning and implementation, guiding both AIIB and its clients in assessing and managing environmental and social risks. The ESF consists of an Environmental and Social Policy, three ESSs (ESS1: Environmental and Social Assessment and Management, ESS2: Land Acquisition and Involuntary Resettlement, ESS3: Indigenous Peoples), and an Exclusion List. It establishes requirements for risk management, stakeholder engagement, information disclosure, and mitigation of impacts, and is periodically updated (most recently in June 2024) to strengthen alignment with emerging sustainability practices and financing instruments.

6.3.6 Equator Principles IV (2020)

The EPs are a set of voluntary environmental and social guidelines that have been adopted by a significant number of financial institutions influential in the project finance market (collectively the Equator Principles Financial Institutions, EPFIs). The EPs comprise a set of ten broad principles that are underpinned by the environmental and social policies, standards, and guidelines.

The EPFIs emphasize that they will not provide loans to projects where the Borrower will not or is unable to comply with the EPFIs social and environmental policies and procedures that implement the EPs.

The EPFIs have ten (10) principles:

- Equator Principle 1: Review and Categorization
- Equator Principle 2: Environmental and Social Assessment
- Equator Principle 3: Applicable Environmental and Social Standards
- Equator Principle 4: Environmental and Social Management System and Equator Principles Action Plan
- Equator Principle 5: Stakeholder Engagement
- Equator Principle 6: Grievance Mechanism
- Equator Principle 7: Independent Review
- Equator Principle 8: Covenants
- Equator Principle 9: Independent Monitoring and Reporting
- Equator Principle 10: Reporting and Transparency

6.4 Requirements of Environmental Limits in Turkish Regulations, EBRD Environmental and Social Policy, and IFC Guidelines

A review of National Legislation, European Regulations and applicable IFC Guidelines for air quality, water quality, soil quality, noise and vibration were performed and is presented in APPENDIX A.

According to the recommendations of the EBRD Environmental and Social Policy and IFC guidelines, when national regulations differ from levels and measures presented in the international standards, the Project is expected to achieve whichever is more stringent where possible.

Project Standards are presented in APPENDIX A. The criteria used to define Project Standards are as follows:

- In the presence of different limits in national and international standards (national, EU and IFC) the most stringent one is adopted as Project Standard.
- In the absence of the EU or IFC limits, national limits are adopted as Project Standards.

7.0 AREA OF INFLUENCE

While determining the areas to be studied in the ESIA, the definition of area of influence ("Aol") in IFC PS1 is taken into consideration. Based on that, the Area of Influence encompasses:

- The area likely to be affected by: (i) the project⁴ and the client's activities and facilities that are directly owned, operated or managed (including by contractors) and that are a component of the project;⁵ (ii) impacts from unplanned but predictable developments caused by the project that may occur later or at a different location; or (iii) indirect project impacts on biodiversity or on ecosystem services upon which Affected Communities' livelihoods are dependent.
- Associated facilities, which are facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable.⁶
- Cumulative impacts⁷ that result from the incremental impact, on areas or resources used or directly impacted by the project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted.

The baseline conditions represent the environmental (i.e., physical and biological components) and social context prior the realisation of the Project (i.e. before any possible disturbance from Project activities may occur). The definition of the baseline conditions represents the starting point upon which the impact assessment is built. The goal is to assign a sensitivity value to each environmental and social component expected to be affected by the Project.

The Aol includes also areas affected by cumulative impacts. This area is generated by the overlap of impacts from other existing and/or approved Projects. This area accounts for eventual environmental and/or social

⁴ Examples include the project's sites, the immediate airshed and watershed, or transport corridors.

⁵ Examples include power transmission corridors, pipelines, canals, tunnels, relocation and access roads, borrow and disposal areas, construction camps, and contaminated land (e.g., soil, groundwater, surface water, and sediments).

⁶ Associated facilities may include railways, roads, captive power plants or transmission lines, pipelines, utilities, warehouses, and logistics terminals.

⁷ Cumulative impacts are limited to those impacts generally recognized as important on the basis of scientific concerns and/or concerns from Affected Communities. Examples of cumulative impacts include: incremental contribution of gaseous emissions to an airshed; reduction of water flows in a watershed due to multiple withdrawals; increases in sediment loads to a watershed; interference with migratory routes or wildlife movement; or more traffic congestion and accidents due to increases in vehicular traffic on community roadways.

critical factors deriving from the natural resources' exploitation and/or highly sensitive areas subject to the Project's impacts.

In the context of this ESIA Scoping Report, the AoI for each component will be defined to include potential impacts from the following facilities as per the IFC PS1 definition:

- Project footprint including the Project components
- Temporary facilities
- ETLs⁸
- Access roads (if any new will be built and used only by this Project)

The identification of the Project's AoI varies according to the environmental and social component assessed and is hence clearly defined separately for physical, biological and social components.

Table 7: Area of Influence - Physical Components⁹

ESIA Component	AoI
Soil and Subsoil	AoI includes the Project footprint and temporary and associated facilities
Hydrology and Surface Water Quality	AoI includes the Project footprint and temporary and associated facilities ¹⁰
Hydrogeology and Groundwater Quality	AoI includes the Project footprint and temporary and associated facilities
Air Quality	AoI includes a buffer of minimum 2 km from the Project footprint, temporary and associated facilities
Noise and Vibration	AoI includes a buffer of minimum 2 km from the Project footprint, temporary and associated facilities

Table 8: Area of Influence – Biological Components

ESIA Component	AoI
Terrestrial AoI	AoI includes entire Project footprint—covering all Project components associated facilities, both permanent and temporary—as well as a surrounding

⁸ As of May 2026, the exact routes, length and technical specifications of the ETLs and the final grid connection points have not yet been determined. Within the scope of TEİAŞ's Investment Programme, route selection and Environmental Impact Assessment (EIA) studies are currently underway for the 400 kV, double-circuit, 1272 MCM, 15+15 km "Sivas SPP – Kangal Transmission Line" and the 400 kV, double-circuit, 1272 MCM, 230+230 km "Sivas SPP – Bozok Transmission Line". These transmission lines are not radial in nature. In addition to transmitting the generation output of the Sivas SPP to the interconnected grid, they are intended to serve multiple existing and future users and will constitute a critical component of the national east–west transmission corridor for integrating other planned renewable energy projects in the region into the transmission system. Furthermore, under the "Allocation of Renewable Energy Resource Areas and Grid Connection Capacities for Wind Energy" programme implemented by the Ministry of Energy and Natural Resources of the Republic of Türkiye, it is planned that one circuit of the aforementioned transmission line will be connected on an in-and-out basis to the R25–Sivas Wind Power Plant (WPP) project, which was awarded connection capacity through the YEKA RES-2025 tenders held on 9 December 2025.

⁹ The preliminary 2 km AoI has been defined for scoping purposes to encompass, based on the information currently available, nearby settlements, identified sensitive receptors, construction areas, access roads, temporary facilities and associated facilities. The adequacy of the AoI will be reviewed and, if necessary, refined during the ESIA based on the results of detailed air quality and noise modelling, traffic assessments, topography, meteorological conditions, receptor locations and any additional information available regarding access roads, temporary facilities and associated facilities.

¹⁰ AoI includes the Project footprint, temporary and associated facilities, and any connected surface water features, drainage pathways, springs, streams and downstream receptors that may be affected by Project-related runoff, sediment transport or accidental releases.

ESIA Component	Aol
	buffer zone extending up to 1 Km from the Project boundaries.
Freshwater Aol	Aol includes entire Project footprint—covering all Project components associated facilities, both permanent and temporary—as well as a surrounding buffer zone extending up to 1 Km from the Project boundaries.

Table 9: Area of Influence – Social Components

ESIA Component	Aol
Social Components	The settlements and affected lands around Project footprint, temporary and associated facilities
Cultural Heritage	Designed as a 250 m buffer from the Project footprint, temporary and associated facilities ¹¹

¹¹ A 250 m buffer has been adopted to assess potential direct and immediate indirect impacts associated with Project activities, including ground disturbance, vibration and construction-related activities. Cultural heritage baseline studies are undertaken over a wider study area, including field surveys extending beyond the Project footprint and a broader desk-based review of cultural heritage resources within approximately 10 km of the Project Area.

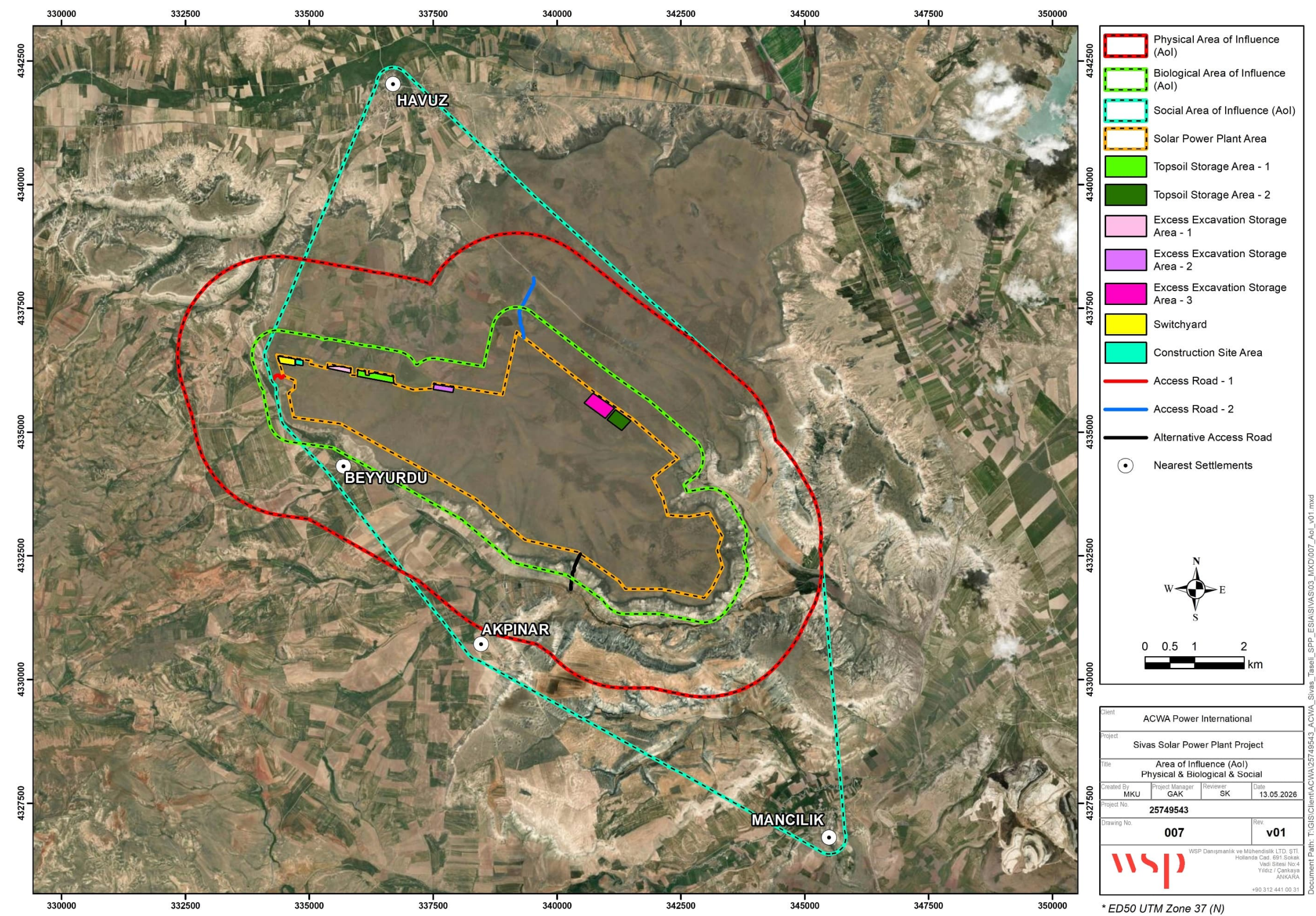


Figure 7: Area of Influence of the Project

8.0 PRELIMINARY ENVIRONMENTAL AND SOCIAL SETTING, ADDITIONAL STUDIES REQUIRED

Each component considered is briefly described based on a preliminary review of the available information and the additional studies planned during the ESIA are described in the following paragraphs.

8.1 Methodology

Each environmental and social component is analysed and assessed under three aspects:

1) Component brief description

Environmental and social information is summarized to provide an overview and background for each component.

2) Gap Analysis for the ESIA based on two criteria:

- Available information and sources. This section describes all the available information on environmental and social data derived by the desktop studies.
- Deficiency/GAP Analysis and Required Studies for the ESIA. Available information is evaluated by typology and analysed according to the international standards in order to identify what additional information (further data, details and studies) is required for the full scale ESIA study.

3) Additional studies planned for ESIA

Then, the identified gaps are classified with the following rating system associated to a potential risk gap, to assess the most significant gaps that need to be filled (Table 10). Where no gap is present the classification is not carried out.

Table 10: Classification of Gaps

Type of Gap	Gap Classification
Very significant – must be filled to meet basic requirements of international standards	▲ LARGE GAP
Moderately significant – recommend to be filled to reduce risk in a shortfall on international standards	▶ MEDIUM GAP
Low significant – a gap that may not be important in this context, and likely is not critical for project completion	▼ MINOR GAP

8.2 Physical Components

8.2.1 Physical Aoi

The Aoi for physical components is presented in Section 7.0.

8.2.2 Meteorology and Climatology

The meteorological data is available for Sivas Province for the years between 1959 – 2025, within the Project EIA Report.

Meteorological and Climatic Characteristics of Sivas Province

The Kangal District of Sivas Province is influenced by a continental climate characteristic of the Central Anatolia Region. Summers are typically hot and dry, while winters are cold and snowy. Due to high sunshine duration, the region is highly suitable for the development of SPP projects.

Sivas has a unique climate character compared to surrounding provinces. It is located in a microclimate zone relative to its surroundings. The main factors contributing to this characteristic are:

- Its higher altitude compared to surrounding provinces.
- Its exposure to northerly winds.
- Its rugged topography.
- Varying pressure differences throughout the year.
- The location of the province's territory in different geographical regions.

According to meteorological data, the average temperatures in December, January, and February drop below 0 °C. During spring, average temperatures rise above 0.8 °C, and a similar temperature pattern is observed in autumn, while summer temperatures consistently exceed 15 °C on average.

8.2.2.1 Gap Analysis

Table 11: Gap Analysis for Meteorology and Climatology

Meteorology and Climatology	Description
Available Information Typology and Sources	■ Project EIA Report, 2026 The meteorological data is available for Sivas Province for the years between 1959 – 2025
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3, TCFD ADB ESS1, ESS3 and ESS9 AIIB ESS1
Deficiency/Gap Analysis and Required Studies for the ESIA	Air quality modelling studies for construction phase of the Project, need to be performed and these studies need to include the impacts to be caused by all components of the Project. Within this regard, specific data on climate and meteorology are needed to assess the impact on air quality through a simulation model. In particular 1-year hourly meteorological data on wind direction and velocity, temperatures, Pasquill-Gifford (“PG”) stability classes and Planetary Boundary Layer (“PBL”) mixing height need to be collected to conduct an air dispersion modelling. A project specific climate change risk assessment (“CCRA”) was not conducted for the Project. Based on that, a climate change risk assessment study to identify the likelihood of future climate hazards and their potential impacts for the Project needs to be conducted in accordance with the Equator Principles IV and ADB ESS9. The CCRA study needs to define the physical climate risks Task Force on Climate - Related Financial Disclosures (“TCDF”) of the Project. There is no GHG emission calculation and assessment since the Project is not subject to the relevant national regulation on greenhouse gases declaration. The GHG emission estimates for Scope 1 (direct GHG emissions) and Scope 2 (indirect GHG emissions) emissions and assessment need to be performed considering the Equator Principles and

Meteorology and Climatology	Description
	IFIs requirements. The assessment should also include the description of proposed mitigation measures for the GHG emission, resource efficiency and energy management including monitoring.
Gap Classification	▲ Large Gap

8.2.2.2 Additional Studies

During the ESIA process, in order to establish baseline conditions for meteorology and climatology, long term meteorological data recorded by the closest meteorological stations acquired from Turkish State Meteorology General Directorate will be used.

For the construction phase air quality modelling study, in particular 1-year hourly meteorological data on wind direction and velocity, temperatures, PG stability classes and PBL mixing height are required to conduct an air dispersion modelling. Accordingly, during the evaluation of representative meteorological station and year for the Project, General Directorate of Meteorology will be verbally consulted for the determination of the meteorological stations and the meteorological data year that is representative of the long-term meteorological conditions in the region.

A project specific CCRA will be conducted for the Project. Within this regard, a CCRA study to identify the likelihood of future climate hazards and their potential impacts for the Project will be conducted in accordance with the Equator Principles IV and ADB ESS9. The assessment will evaluate future climate hazards, physical climate risks, Project vulnerabilities and adaptive capacity over a timeframe representative of the Project's anticipated lifetime. Within the scope of the CCRA study, focus will be given to the main Project components and critical infrastructure. The assessment will consider relevant climate hazards and associated risks that may affect the Project and its associated facilities, taking into account the Project location and characteristics, as appropriate. The CCRA will also identify and evaluate climate adaptation and resilience measures, as appropriate, to support the Project's long-term climate resilience.

GHG emissions calculation for Scope 1 and Scope 2 will be done and included in the ESIA.

8.2.3 Geology and Geomorphology

The Karaseki locality, situated at the centre of the Project Area, constitutes the most prominent topographic high of the Kangal Basin. While elevations across the basin generally range between 1,500 and 1,550 m, the Karaseki Plateau reaches an average elevation of 1,650 to 1,700 m above mean sea level. The Project Area itself is located at elevations between 1,250 and 1,400 m and is characterized by gently undulating topography. (National EIA, 2026).

The general geology of the Sivas-Kangal region is characterized by a complex stratigraphic framework dominated by Neogene and Quaternary sedimentary units together with Plio-Quaternary volcanic rocks. Owing to the intracratonic nature of the Sivas Basin, the region hosts rock assemblages formed under both sedimentary processes and neotectonic regimes.

Stratigraphically, four formations are dominant in the Project Area and its vicinity:

- The Kangal Formation is of Late Miocene–Pliocene age and has an approximate thickness of 200 m. The formation consists of sandstone, siltstone, claystone, and locally lignite bands. These lithologies were deposited in lacustrine and fluvial environments and include levels enriched in organic matter. The Kangal Formation is of particular significance in terms of the region's energy and natural resource potential. Stratigraphically, it shows conformable transitions with the overlying Uzunyayla Formation.

- The Uzunyayla Formation is of Upper Pliocene age and conformably overlies the Kangal Formation. This formation is composed of marl and lacustrine limestones, reflecting the typical characteristics of a lake depositional environment. Its thinly bedded structure indicates that sedimentation took place under relatively calm lacustrine conditions. The Uzunyayla Formation occupies an important position within the regional stratigraphic column and forms the basis for the overlying volcanic units.
- The Göbekören Volcanics are of Plio-Quaternary age and unconformably overlie the Uzunyayla Formation. These volcanic units consist of basaltic and andesitic lava flows together with pyroclastic materials. Developed under the regional neotectonic regime, the volcanic sequence contributes additional complexity to the stratigraphic framework. In places, the Göbekören Volcanics are covered by Quaternary alluvium.
- Quaternary units consist of alluvium and slope debris. These units occur in stream beds and low-lying areas as loose deposits of sand, gravel, and silt.

8.2.3.1 Gap Analysis

Table 12: Gap Analysis for Geology and Geomorphology

Geohazard and Seismology	Description
Available information typology and sources	Available information is provided in: Project EIA Report, 2026, and related geological studies SRTM digital elevation data set
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3 ADB ESS1, ESS3 AIIB ESS1
Deficiency/Gap and Required Studies for the ESIA	The national EIA includes a description of the geological units within the Project area; however, no geotechnical investigation or assessment was conducted. Consequently, site-specific geotechnical parameters required for risk evaluation have not been established.
Gap Classification	► Medium Gap

8.2.3.2 Additional Studies

Additional studies will be based on a literature desktop review and reports of the additional studies which will be conducted by ACWA (such as geotechnical investigation) and no additional field studies such as sampling, measurement, modelling is planned for this component in the scope of ESIA.

8.2.4 Geohazard and Seismicity

The Anatolian Peninsula is like a mosaic, composed of continental tectonic units and the faults that divide them. The convergence of the Eurasian plates, which began in the Late Cretaceous period, led to the closure of the oceanic basins (Tethys) and the deposition of continental fragments. This process resulted in the formation of the present-day Anatolian crust, shaped by the positioning of subduction and accretionary prisms, and ophiolites

contributing to its structure^{12,13}. As per Okay and Tüysüz (1999)¹⁴, the tectonic units of Türkiye include the Rhodope-Istranca Zone, Istanbul Zone, Sakarya Zone, Kırşehir Massif, Tauride-Anatolide Block (comprising the Tavşanlı Zone, Afyon Zone, Bornava Flysch Zone, Menderes Massif) and the Arabian Platform.

Türkiye is located in the Alpine-Himalaya (Mediterranean Periphery) Earthquake Belt, on one of the active tectonic sections of the earth's crust, where there are frequent and large earthquakes with shallow focus. The main elements of Türkiye 's tectonics are the North Anatolian Fault, the East Anatolian Fault and the Aegean Graben System. In addition, Kırıkkale-Erbaa Fault, Tuz Gölü Fault Zone and Eskişehir Fault Zone can be included in these main elements.

Although the Karasekidüzü area is not located directly on a first-degree active fault line, the Kangal district is generally situated close to the southern branch of the North Anatolian Fault Zone. This fault zone is one of the major active fault systems in Türkiye.

The Project Area is located within a low seismic risk zone according to the Türkiye Earthquake Hazard Map (Figure 8). Based on historical records, major destructive earthquakes have rarely been reported in the vicinity of Kangal. One of the most recent significant events was the magnitude 3.1 earthquake that occurred in the Ulaş district of Sivas on 22 September 2025. However, the energy accumulation and transfer dynamics of the North Anatolian Fault Zone indicate that the area may still be indirectly affected. In this context, the possibility of moderate-magnitude earthquakes in the range of 5.0 to 6.0 under future scenarios should not be disregarded.

¹² Şengör, A.M.C., & Yılmaz, Y. (1981). Tethyan Evolution of Turkey: A Plate Tectonic Approach. *Tectonophysics*, 181-241.

¹³ Yiğitbaş, E., Elmas, A., & Yılmaz, Y. (1999). Pre-Cenozoic Tectono-Stratigraphic Components of the Western Pontides and Their Geological Evolution. *Geological Journal*, 55-74.

¹⁴ Okay, A., & Tüysüz, O. (1999). Tethyan Sutures of Northern Turkey. *Geological Society, London, Special Publications*, 475-515.

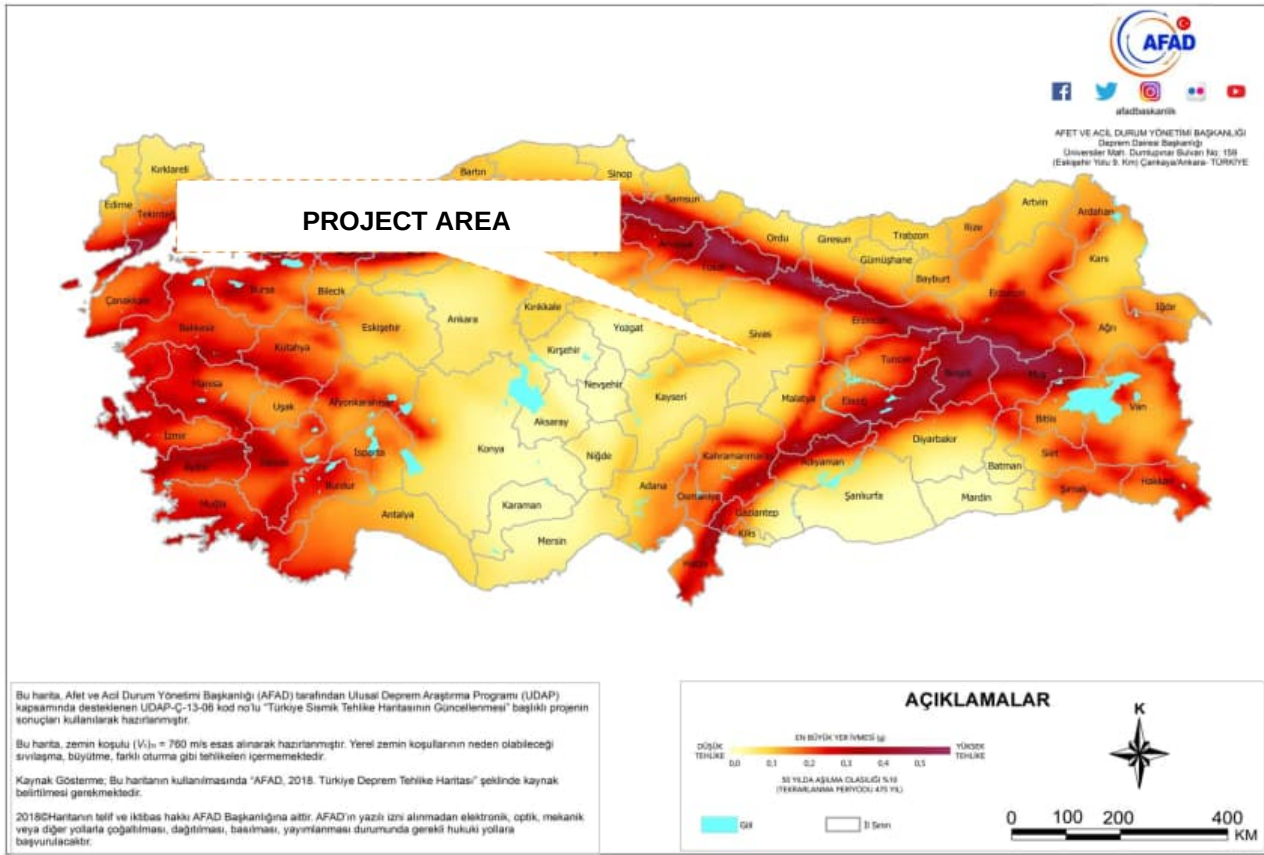


Figure 8: Location of the Project's Aol on the Earthquake Hazard Map (AFAD Interactive Web Application, 2020)

According to the MTA (Maden Tetkik ve Arama - Mineral Research and Exploration) GeoScience Map Viewer an active landslide area was identified within the area (Figure 9).

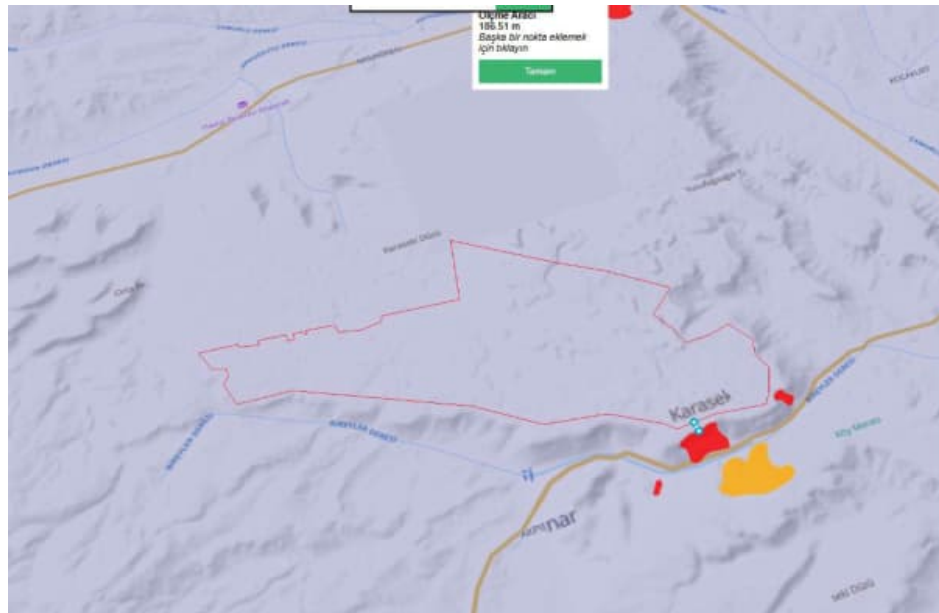


Figure 9: Landslide Areas Around the Project Area (National EIA, 2026)

8.2.4.1 Gap Analysis

Table 13: Gap Analysis for Geohazard and Seismicity

Geohazard and Seismology	Description
Available information typology and sources	Available information is provided in: Project EIA Report, 2026 AFAD Interactive Web Application, 2020 AFAD, Türkiye Earthquake Hazard Map
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3 ADB ESS1, ESS3 AIIB ESS1
Deficiency/Gap and Required Studies for the ESIA	The national EIA includes a description of the geological units within the Project area; however, no geotechnical investigation or assessment was conducted. Consequently, site-specific geotechnical parameters required for risk evaluation have not been established. Also, considering the close distance between the Project Area and active landslide areas, a geohazard study should be conducted by ACWA.
Gap Classification	► Medium Gap

8.2.4.2 Additional Studies

Additional studies will be based on a literature desktop review and any other reports of the additional studies which will be conducted by ACWA, covering geohazard including landslide and seismicity, no additional field studies such as sampling, measurement, modelling is planned for this component in the scope of ESIA.

8.2.5 Soil and Sub-Soil

According to the EIA report, the Project Area situated within the "natural meadows" and "agricultural areas located together with natural vegetation". The entire planned Project Area is classified as "Brown Soils," one of the major soil groups.

8.2.5.1 Gap Analysis

Table 14: Gap Analysis for Soil and Sub-soil

Soil	Description
Available information typology and sources	Project EIA Report, 2026 No previous soil quality study has been conducted for the Project. The EIA report includes literature data and Corine assessment by GIS. It should be noted that there is no publicly available contaminated site database in Türkiye.
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3 ADB ESS1, ESS3 AIIB ESS1

Soil	Description
Deficiency/Gap and Required Studies for the ESIA	Soil quality assessment in line the Regulation on Control of Soil Pollution and Contaminated Lands by Point Sources and corresponding project activities (i.e. electricity generation, electricity transmission and electricity distribution) is required to be carried out multiple locations for the Project to obtain a general idea about the possible contamination of the soil (i.e. potential soil pollution). Results of the soil quality samplings will be assessed in the ESIA Report according to both Turkish and international requirements.
Gap Classification	▲ Large Gap

8.2.5.2 Additional Studies

Within the scope of the Project ESIA, soil samples will be collected at 4 locations that are presented in Figure 10, for chemical analysis to establish baseline soil quality and determine the potential contamination.

The samples will be analysed according to the Regulation on Control of Soil Pollution and Contaminated Lands by Point Sources based on the "NACE Codes 3511, 3512 and 3513: electricity generation, electricity transmission and electricity distribution" for the parameters that are listed below:

- Total Organic Halogens ("TOX"),
- Total Petroleum Hydrocarbons ("TPH"), and
- Arsenic (As), Boron (B), Barium (Ba), Cadmium (Cd), Chromium (Cr), Copper (Cu), Mercury (Hg), Molybdenum (Mo), Lead (Pb), Antimony (Sb), Selenium (Se) and Zinc (Zn).

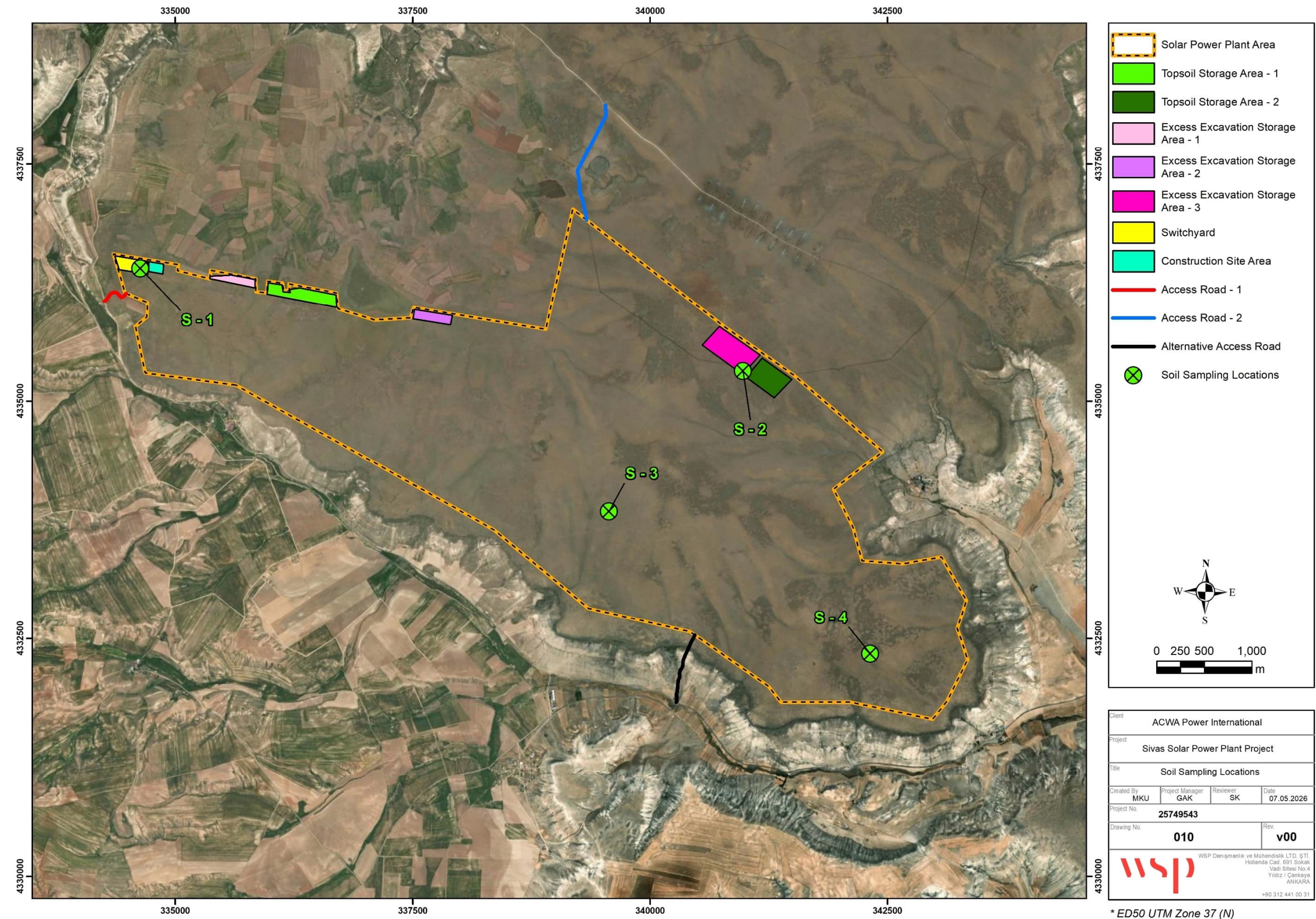


Figure 10: Soil Sampling Locations

8.2.6 Hydrology and Surface Water Quality

Kangal, in which the Project Area is located, is morphologically situated within the Kangal Basin developed in the eastern part of the Uzunyayla Plateau, and the region exhibits upper catchment characteristics draining into the Fırat (Euphrates) River system. The Kangal Basin has the character of an intermontane basin developed between structural highs to the north and south, where surface runoff is conveyed through small tributary streams into larger drainage channels, ultimately contributing to the Upper Fırat River system. In this context, the drainage network surrounding the Project Area consists primarily of local stream systems controlled by topography and seasonal precipitation conditions rather than large perennial rivers; surface water features such as Çulluközü Stream, the Mühürkulak River, and subsequently Kazıklı Stream reflect the upper catchment drainage pattern of the basin.

The Project Area is located within the administrative boundaries of Kangal District, Sivas Province, and is situated hydrologically near the headwaters of the Euphrates Basin. Çulluközü Stream originates to the south of the Project area and follows its southern boundary before discharging into the Mühürkulak River. Approximately 7 km to the north of the Project area, Çamurlusu Stream flows through the region. This stream also joins the Mühürkulak River, together forming Kazıklı Stream.

Based on the current Project design, no surface water abstraction is planned during either the construction or operation phases. Notwithstanding this, potential surface water-related risks, such as accidental spillages and sediment runoff during construction activities, will be assessed within the ESIA, and relevant mitigation measures will be developed.

8.2.6.1 Gap Analysis

Table 15: Gap Analysis for Hydrology and Surface Water Quality

Hydrology and Water Quality	Description
Available information typology and sources	Description of local hydrology from specific studies and technical papers: ■ Project EIA Report, 2026 ■ Fırat River Basin Master Plan.
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3 ADB ESS1, ESS3 AIIB ESS1
Deficiency/GAP Analysis and Required Studies for the ESIA	Hydrological investigations are limited in extent. Identification of the hydrological features within the Project's Aol will need to be conducted to assess any possible impacts arising from construction and operation. During biodiversity baseline studies in April 2026, a field study was carried out to assess whether the surface waters in and around the Project Area had sufficient flow to conduct the sampling. Therefore, surface water quality will be assessed from six locations as a result of this study. Flooding risk and the mitigation measures defined by relevant design engineers should be addressed in the ESIA.

Hydrology and Water Quality	Description
	Drainage system should be designed by ACWA and the design should be completed before the construction.
Gap Classification	► Medium Gap

8.2.6.2 Additional Studies

Available data (including locations and usage information) will be collected on surface waters, including streams, lakes, ponds and dam reservoirs. A preliminary literature study was conducted and during biodiversity baseline studies, a field study was carried out to assess whether the surface waters in and around the Project Area had sufficient flow to conduct the sampling. Accordingly, surface water quality will be assessed from six locations, which are listed below (Table 16). As part of the baseline studies within the ESIA process, surface water sampling studies will be conducted to assess the existing quality of surface water in the Project Area. Accordingly, surface water sampling locations are presented in Figure 11.

The samples will be analysed for hydrogeochemical parameters and the parameters listed in the Surface Water Quality Regulation, of which are listed in Table 17.

The flood risk assessment needed to be conducted by the ACWA in the following stages of the Project. Drainage system should be designed by ACWA and the design should be completed before the construction.

Table 16: Coordinates of the Proposed Surface Water Monitoring Points

Groundwater Point	X (WGS 1984, Decimal Degree)	Y (WGS 1984, Decimal Degree)
SSW1	37.0740375	39.1640597
SSW2	37.1126981	39.1590375
SSW3	37.1860284	39.1380179
SSW4	37.1980943	39.1184207
SSW5	37.0859449	39.147583
SSW6	37.1368511	39.1206708

Table 17: Surface Water Sampling and Monitoring Parameters

Parameter (dissolved and total)	Purpose
Dissolved Oxygen	In-Situ Parameter, SWQR
Electrical Conductivity	In-Situ Parameter, SWQR
pH	In-Situ Parameter, SWQR
Temperature	In-Situ Parameter
Bicarbonate Alkalinity	Hydrogeochemistry
Calcium (Ca)	Hydrogeochemistry
Carbonate Alkalinity	Hydrogeochemistry

Parameter (dissolved and total)	Purpose
Chloride	Hydrogeochemistry
Magnesium (Mg)	Hydrogeochemistry
Potassium (K)	Hydrogeochemistry
Sodium (Na)	Hydrogeochemistry
Sulphate (SO ₄)	Hydrogeochemistry
1,2-dichloroethane	SWQR
Aluminum (Al)	SWQR
Ammonium as N (mg NH ₄ ⁺ -N/L)	SWQR
Antimony (Sb)	SWQR
Arsenic (As)	SWQR
Barium (Ba)	SWQR
Benzene	SWQR
Benzo(a)pyrene	SWQR
Beryllium (Be)	SWQR
Biochemical Oxygen Demand (BOD ₅)	SWQR
Boron (B)	SWQR
Cadmium (Cd)	SWQR
Chemical Oxygen Demand (COD)	SWQR
Chromium (Cr)	SWQR
Cobalt (Co)	SWQR
Color (436 nm) (RES) , mg/L	SWQR
Color (525 nm) (RES) , mg/L	SWQR
Color (620 nm) (RES) , mg/L	SWQR
Copper (Cu)	SWQR
Fluoride (F ⁻)	SWQR
Iron (Fe)	SWQR
Lead (Pb)	SWQR
Manganese (Mn)	SWQR
Mercury (Hg)	SWQR
Nickel (Ni)	SWQR
Nitrate as N (mg NO ₃ ⁻ -N/L)	SWQR
Oil and Grease	SWQR
Orthophosphate Phosphorus (mg o-PO ₄ -P/L)	SWQR

Parameter (dissolved and total)	Purpose
PAH Benzo(b)fluoranthene	SWQR
PAH Benzo(g,h,i)fluoranthene	SWQR
PAH Benzo(k)fluoranthene	SWQR
Selenium (Se)	SWQR
Silicon (Si)	SWQR
Silver (Ag)	SWQR
Sulphur	SWQR
Tin (Sn)	SWQR
Titanium (Ti)	SWQR
Total Kjeldahl as N (mg N/L) *	SWQR
Total Nitrogen as N (mg N/L) **	SWQR
Total Phosphorus (mg P/L)	SWQR
Total Suspended Solids	SWQR
Vanadium (V)	SWQR
Zinc (Zn)	SWQR

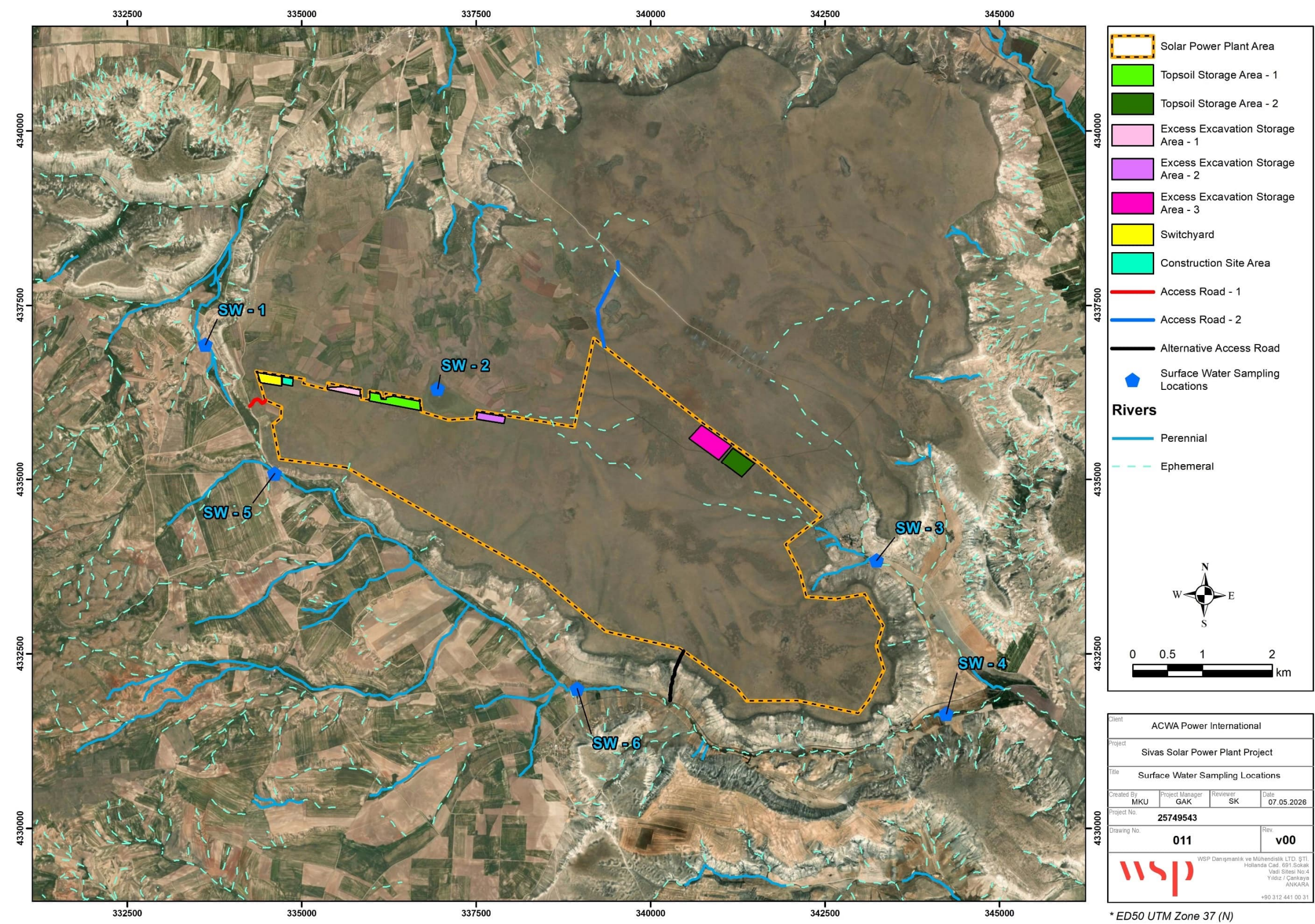


Figure 11: Surface Water Sampling Locations

8.2.7 Hydrogeology and Groundwater Quality

The Project Area, similar to its surface water setting, is located within the Kangal Sub-basin of the Fırat (Euphrates) Basin in terms of groundwater. According to the “Official Water Resources Statistics” published by State Hydraulic Works (“DSİ”) in 2019, 4,994.8 hm³/year of Türkiye’s total 23,032.3 hm³/year groundwater recharge comes from the Euphrates-Tigris Basin.

The region where the Project Area is located consists of Neogene and Quaternary sedimentary units together with Plio-Quaternary volcanic rocks, which have the feature of semi-permeable – permeable rocks in terms of hydrogeologic properties.

8.2.7.1 Gap Analysis

Table 18: Gap Analysis for Hydrogeology and Groundwater Quality

Hydrogeology and Groundwater Quality	Description
Available information typology and sources	Description of local hydrogeology from specific studies and technical papers: ■ Project EIA Report, 2026; and related hydrogeological studies ■ Fırat River Basin Master Plan.
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3 ADB ESS1, ESS3 AIIB ESS1
Deficiency/GAP Analysis and Required Studies for the ESIA	Hydrogeological investigations are limited in extent. Identification of the hydrogeological features within the Project's Aol will need to be conducted to assess any possible impacts arising from construction and operation phase activities. Quantitative groundwater information is not available since no aquifer test or groundwater level observation were conducted. Should groundwater abstraction be proposed during construction or operation, the need for additional hydrogeological investigations will be assessed based on the Project water requirements, available hydrogeological information and applicable regulatory requirements. Any necessary investigations and assessments will be undertaken, as appropriate. During biodiversity baseline studies in April 2026, a field study was carried out to assess whether the springs and wells in and around the Project Area had sufficient flow to conduct the sampling. Groundwater quality will be assessed from three locations as a result of this study.
Gap Classification	► Medium Gap

8.2.7.2 Additional Studies

Available data (including locations and usage information) will be collected on groundwater wells, springs and developed springs or fountains. A preliminary literature study was conducted and during biodiversity baseline studies, a field study was carried out to assess whether the groundwater points in and around the Project Area had sufficient flow to conduct the sampling. Accordingly, groundwater quality will be assessed from three locations, which are listed below (Table 16). As part of the baseline studies within the ESIA process, groundwater sampling studies will be conducted to assess the existing quality of groundwater in the Project Area. Groundwater sampling locations are presented in Figure 12.

The samples will be analysed for hydrogeochemical parameters and the parameters listed in the Regulation on Protection of Groundwater Protecting Against Pollution and Deterioration, as well as Regulation on Water Intended for Human Consumption, both of which are listed in Table 20.

Table 19: Coordinates of the Proposed Groundwater Monitoring Points

Groundwater Point	X (WGS 1984, Decimal Degree)	Y (WGS 1984, Decimal Degree)
SGW1	37.1318311	39.1108916
SGW2	37.0943353	39.1460117
SGW3	37.1801774	39.1409226

Table 20: Groundwater Sampling and Monitoring Parameters

Chemical Parameters	In-Situ Measurement	Hydrogeochemical Analysis	Groundwater Quality Regulation	Regulation on Drinking Water Quality
Electrical Conductivity @ 25°C	✓		✓	✓
pH	✓			✓
Dissolved Oxygen	✓			
Temperature	✓			
Bicarbonate Alkalinity		✓		
Calcium		✓		
Carbonate Alkalinity		✓		
Chloride		✓	✓	✓
Magnesium		✓		
Potassium		✓		
Sodium		✓		
Sulphate		✓	✓	✓
Arsenic			✓	✓
Cadmium			✓	✓

Chemical Parameters	In-Situ Measurement	Hydrogeochemical Analysis	Groundwater Quality Regulation	Regulation on Drinking Water Quality
Tetrachloroethylene			✓	✓
Lead			✓	✓
Mercury			✓	✓
Electrical Conductivity			✓	✓
Ammonium			✓	✓
Nitrite			✓	✓
Trichloroethylene			✓	✓
Total Phosphorus / Phosphates			✓	
1,2-Dichloroethane				✓
Acrylamide				✓
Ammonia				✓
Antimony				✓
Atrazine				✓
Barium				✓
Benzene				✓
Benzo(a)pyrene				✓
Bisphenol A				✓
Boron				✓
Bromate				✓
Chlorate				✓
Chloride				✓
Chromium				✓
Copper				✓
Cyanide				✓
Epichlorohydrin				✓
Fluoride				✓
Haloacetic Acids (HAAs)				✓
Isoproturon				✓
Molybdenum				✓
Nickel				✓

Chemical Parameters	In-Situ Measurement	Hydrogeochemical Analysis	Groundwater Quality Regulation	Regulation on Drinking Water Quality
Nitrate (as NO_3^-)				✓
Nitrite (as NO_2^-)				✓
Pesticides				✓
Pesticides Total				✓
PFAS Total				✓
Polycyclic aromatic hydrocarbons				✓
Selenium				✓
Simazine				✓
Sum of PFAS				✓
Trihalomethanes Total				✓
Uranium				✓
Vinyl Chloride				✓
Aluminum				✓
Colour				✓
Iron				✓
Manganese				✓
Odour				✓
Oxidizability				✓
Sulphate				✓
Sodium				✓
Taste				✓
Total organic carbon (TOC)				✓
Turbidity				✓
Colony count at 22 °C				✓
Colony count at 37 °C				✓
E.coli				✓
Enterococcus				✓
P. Aeruginosa				✓
Pathogenic Staphylococcus				✓
Sulphite-reducing bacteria with anaerobic spores				✓

Chemical Parameters	In-Situ Measurement	Hydrogeochemical Analysis	Groundwater Quality Regulation	Regulation on Drinking Water Quality
Total Coliform Bacteria				✓
Fecal Coliform Bacteria				✓
C. perfringens (including spores)				✓
Tritium				✓
Total Indicative Dose – alpha activity				✓
Total Indicative Dose – beta activity				✓

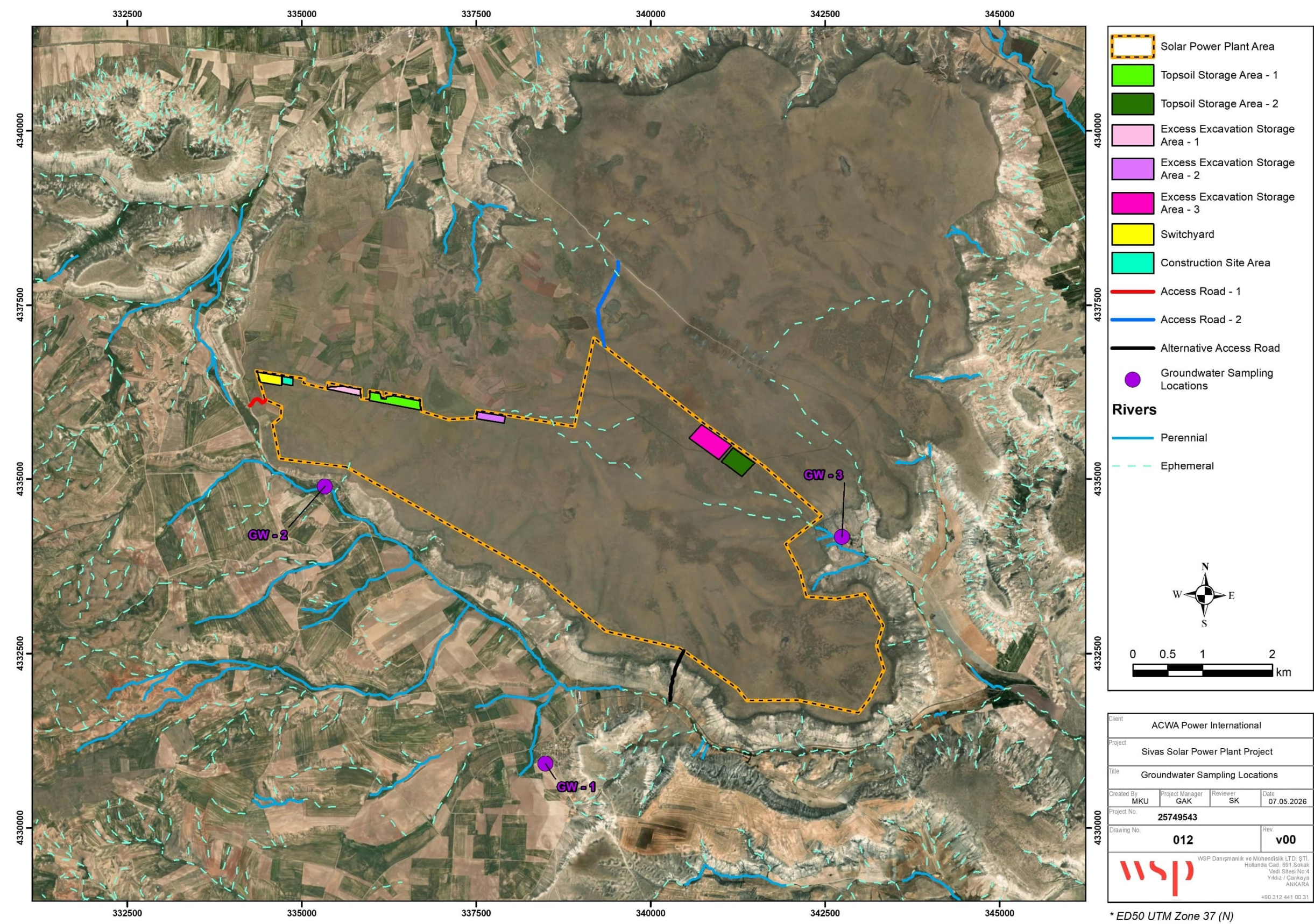


Figure 12: Groundwater Sampling Locations

8.2.8 Air Quality

Regarding the layout of the proposed Project, some parts of the Project Area are close to the residential areas (sensitive locations). Based on that, it is important to establish the baseline air quality of the Project Area prior to commencement of construction activities.

8.2.8.1 Gap Analysis

Table 21: Gap Analysis for Air Quality

Air Quality	Description
Available Information Typology and Sources	■ Project EIA Report, 2026 No previous air quality measurement study has been conducted for the Project. As part of the Project EIA studies, air emissions resulting from the construction activities were evaluated considering the excavation, loading, transportation, unloading and storage. Based on the assumptions and calculations, the amount of controlled and uncontrolled dust emissions generated during the topsoil stripping were determined as 0.73 kg/hr and 1.47 kg/hr, respectively, while the amount of controlled and uncontrolled dust emissions generated during the septic tank foundation excavation were determined as 0.82 kg/hr and 1.64 kg/hr, respectively. As a result, no air quality modelling study for the construction phase was carried out.
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3 ADB ESS1, ESS3 AIIB ESS1
Deficiency/Gap Analysis and Required Studies for the ESIA	No air quality measurements have been carried out for the Project. There are no previous studies regarding to GHG emission calculation and assessment since the Project including the Project is not subject to the Regulation on Monitoring of Greenhouse Gas Emissions.
Gap Classification	▲ Large Gap

8.2.8.2 Additional Studies

Within the scope of the Project ESIA, air quality measurements planned to be conducted at total of 7 locations at the nearest settlements and other relevant sensitive receptors in the vicinity of the Project, in order to determine the ambient air quality levels at the sensitive receptors prior to construction activities. Accordingly, annual wind rose diagram for Kangal Meteorological Station obtained from the Project EIA Report and air quality measurement locations are presented in Figure 13 and Figure 14, respectively.

To assess the air quality baseline conditions, 7 representative measurement locations for PM₁₀, PM_{2.5}, SO₂, NO₂ and settled dust have been determined. Following air quality measurements planned to be conducted by Turkish Accreditation Agency ("TAA", TÜRKAK in Turkish) accredited laboratory.

- Daily PM₁₀ and PM_{2.5} measurements will be conducted for 72 hours continuously in line with TS EN 12341 standard.

- 2-months settled dust measurements will be conducted in line with TS 2342 standard.
- Monthly NO₂ and SO₂ measurements will be conducted for 2 months via passive diffusion tubes in line with TS EN 13528 – 1, 2, 3 standard.

The air quality measurements will be conducted in accordance with the Regulation on Industrial Air Quality Pollution Control, EU Directives and IFC General EHS Guidelines for Air Emissions and Ambient Air Quality.

Air dispersion model for the construction phase of the Project will be developed in line with national and international standards to determine the potential contribution of the construction on the background air quality within the Project AoI and this study will include the impacts to be caused by all components of the Project. The construction phase emissions will be calculated, and atmospheric dispersion of air pollutants will be simulated by using air emission dispersion model, namely AERMOD (American Meteorological Society/Environmental Protection Agency Regulatory Model).¹⁵

The air dispersion modelling for the operation phase is not needed since operation phase activities will only include the operation of SPP.

Additionally, Scope 1 and Scope 2 GHG emissions will be estimated. The assessment will include the description of proposed mitigation measures for the GHG emission, resource efficiency and energy management including monitoring.

Project specific air quality impact assessment will be presented in ESIA according to a modelling study to be conducted in line with national and international standards.

¹⁵ AERMOD is a steady-state Gaussian dispersion model that represents the current state-of-the-science and preferred dispersion model of the U.S. EPA (U.S. Environmental Protection Agency). The model forecasts dispersion of the pollutants in the atmosphere, through mathematical formulations which take into account the ii) hourly meteorological data (for at least one-year period), ii) topographical data for the modelling domain and receptor network, and iii) pollutant source data, which are described below in detail.

AERMOD, together with these data, estimates the concentration of pollutants at specified ground-level receptors surrounding an emissions source. AERMOD model is capable of calculating both short-term and long-term averages for any user-defined period.

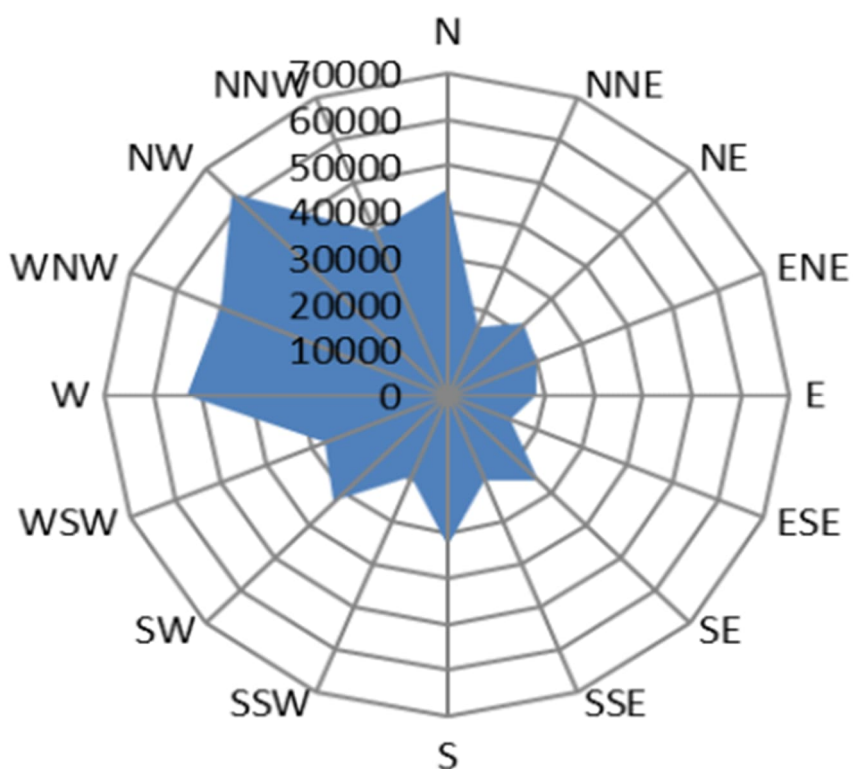


Figure 13: Annual Wind Rose Diagram for Kangal Meteorological Station obtained from the Project EIA Report (According to Total Number of Wind Blowing)

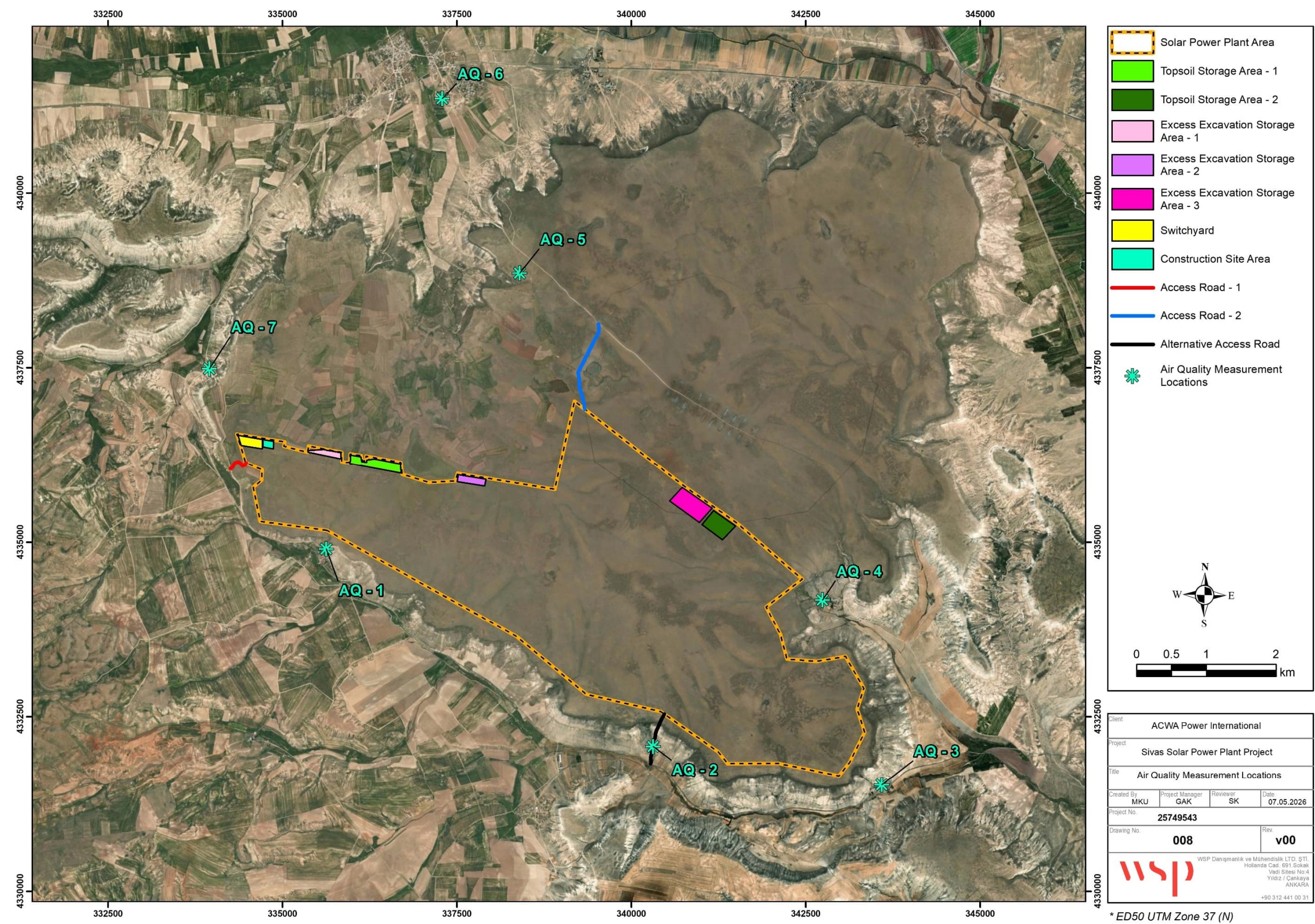


Figure 14: Air Quality Measurement Locations

8.2.9 Noise and Vibration

Regarding the layout of the proposed Project, some parts of the Project Area are close to the residential areas (sensitive locations). Based on that, it is important to establish the baseline noise levels of the Project Area prior to commencement of construction activities.

8.2.9.1 Gap Analysis

Table 22: Gap Analysis for Noise and Vibration

Noise and Vibration	Description
Available Information Typology and Sources	Project EIA Report, 2026 No previous noise measurement study has been conducted for the Project. No construction phase noise modelling study has been conducted for the Project.
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3 ADB ESS1, ESS3 AIIB ESS1
Deficiency/Gap Analysis and Required Studies for the ESIA	No noise measurements have been carried out for the Project. No construction phase noise modelling study has been conducted for the Project. No vibration impact assessment was conducted for the Project.
Gap Classification	▲ Large Gap

8.2.9.2 Additional Studies

To assess the noise baseline conditions, noise measurements planned to be conducted at total of 7 locations at the nearest settlements and other relevant sensitive receptors in the vicinity of the Project that are presented in Figure 15, in order to determine the ambient noise levels at the sensitive receptors prior to construction activities.

The noise measurements planned to be conducted by TAA accredited laboratory in accordance with the Turkish Regulation on Control of Environmental Noise and IFC General EHS Guidelines for Noise. Noise levels will be measured and reported in A-weighted decibels (dBA).

Detailed noise modelling study for the construction of the Project will be performed in line with national and international standards, and this study will include the impacts to be caused by all components of the Project.

Operational noise impacts will be assessed using a conservative design-stage approach. The Project layout, including the locations of inverter-transformer stations and the main switchyard, was provided by ACWA and will be used as the basis for the operational noise model. As detailed equipment acoustic specifications are not available, representative sound power levels for utility-scale solar power facilities will be derived from published technical literature, acoustic studies and publicly available manufacturer information. The adopted source sound power levels will be selected to be conservatively representative of typical operational conditions.

On the other hand, dBA is generally the preferred assessment metric because it accounts for the frequency response of human hearing and is therefore more representative of how noise is actually perceived by sensitive receptors. Environmental noise criteria adopted by IFC, the World Bank Group EHS Guidelines, and most

national regulations are expressed in dBA, meaning that impact significance and compliance assessments are typically based on A-weighted results. Accordingly, all assessments will be done in terms of dBA.

Vibration impacts will be assessed based on calculations of predicted vibration levels during the construction phase of the Project.

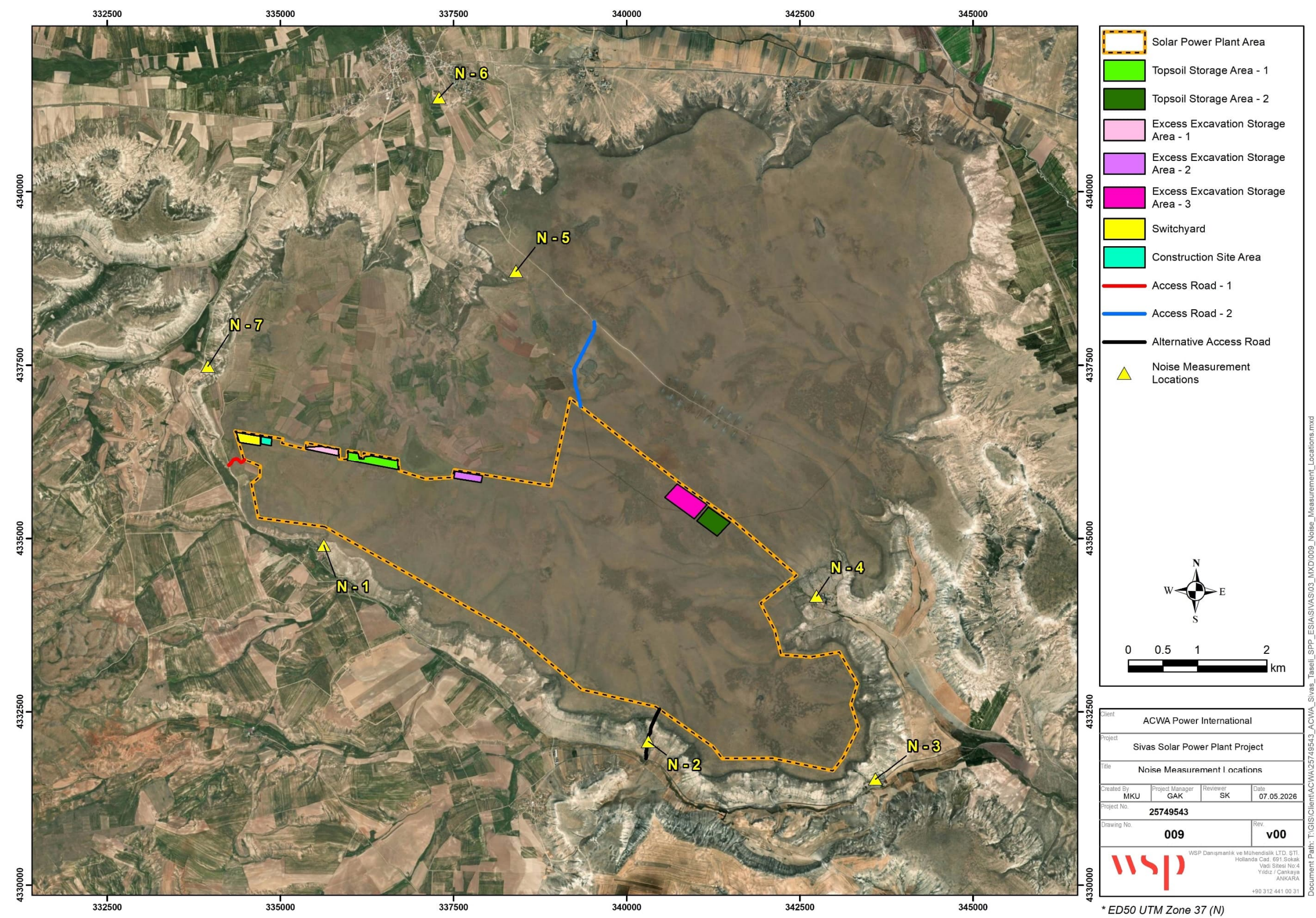


Figure 15: Noise Measurement Locations

8.2.10 Traffic

The purpose of the traffic evaluation is to describe the transportation aspects of the proposed Project, to assess the effects in the Project Area and to outline the ways in which expected traffic related impacts can be mitigated. The evaluation describes the road conditions and the expected increase in vehicle traffic due to the Project and their typology.

8.2.10.1 Gap Analysis

Table 23: Gap Analysis for Traffic

Traffic	Description
Available Information Typology and Sources	■ Project EIA Report, 2026 ■ Publicly available traffic volume maps Estimations regarding to number of equipment to be used during the construction phase of the Project was presented in the EIA Report.
Requirements	IFC PS1, PS3, PS4 EBRD ESR 1, ESR3, ESR4 EP4 P2, P3 ADB ESS1, ESS3, ESS4 AIIB ESS1
Deficiency/Gap Analysis and Required Studies for the ESIA	Traffic impacts of the Project will be assessed in ESIA studies while taking into account the traffic volume in existing roads.
Gap Classification	► Medium Gap

8.2.10.2 Additional Studies

Based on the traffic volume in existing roads published by General Directorate of Highways and number of the equipment to be used during the construction phase, traffic impacts of the Project will be assessed in ESIA studies while taking into account the traffic.

8.2.11 Visual

Since the Project is a greenfield project and the Project Area is close to the residential areas (sensitive locations), it is important to assess the visual impacts of the Project so Visual Impact assessment will be done and given in the ESIA report.

The proposed PV modules (Jinko Tiger Neo 3.0) incorporate anti-reflective (AR) coated glass with demonstrated low reflectivity characteristics:

- Measured reflected luminance under bright sunshine (100,000 lux, 10° incidence):
~50,500 cd/m²
- This value is significantly lower than typical market panels, which can reach **100,000–200,000 cd/m²** (OEM statement)
- Reflectivity testing also indicates **very low reflectance values (≈1.3%–1.5% at low incidence angles)**

These results confirm that the selected modules are specifically designed to minimise specular reflection and diffuse glare effects. In the absence of nearby critical aviation receptors or where projects are located outside

high-risk aviation zones, detailed glare modelling is typically not required, and a preliminary screening is considered sufficient.

A preliminary screening has been undertaken to determine whether a detailed glint and glare assessment is required for the Project. As part of the screening, nearby aviation receptors have been reviewed. It is confirmed that the nearest airport is located approximately 70 km from the Sivas Project Area indicating that no airport or aviation-related sensitive receptors are located within a proximity that would typically trigger detailed glare assessment.

International aerodrome design guidance provides indicative thresholds for acceptable reflected luminance levels in aviation contexts. For example, guidance referenced in aerodrome design specifications indicates that a reflected luminance level of approximately 20,000 cd/m² is considered acceptable for installations in airport environments.

Nevertheless, glint and glare effects will be further considered within the ESIA through a screening-level assessment focusing on other potentially sensitive receptors, including nearby residential properties and road users. The assessment will consider the distance and relative positioning of sensitive receptors, panel orientation and tilt, local topography, potential lines of sight (viewshed) between receptors and the PV arrays, and the seasonal sun path and solar geometry (sunrise and sunset angles). This assessment will provide a qualitative evaluation of the likelihood of glint and glare effects and identify whether any receptor-pathway linkages of potential concern exist.

Based on the information currently available, significant glint and glare effects are not anticipated and the need for detailed quantitative glint and glare modelling is not currently envisaged.

8.2.11.1 Gap Analysis

Table 24: Gap Analysis for Visual

Visual	Description
Available Information Typology and Sources	There is no available data in terms of landscape and visual aspects.
Requirements	IFC PS1, PS3 EBRD ESR 1, ESR3 EP4 P2, P3 ADB ESS1, ESS3 AIIB ESS1
Deficiency/Gap Analysis and Required Studies for the ESIA	Visual impact assessment will be carried out. There is no available data in terms of landscape and visual aspects.
Gap Classification	► Medium Gap

8.2.11.2 Additional Studies

The sensitive receptors will be defined in the ESIA, and sensitivity degree of each receptor will be defined. Then the viewpoint locations will be defined, and impacts of the Project will be assessed through Google Earth which will be used as a base platform to simulate potential impacts in terms of landscape and visual.

8.3 Biological Components

The baseline study for biological components examines the present conditions of habitats/ecosystems, species and their habitats, protected areas and internationally recognized areas of biodiversity importance, ecosystem services within the AoI.

In order to carry out a comprehensive assessment of the feature categories identified above, in accordance with EBRD GN6 (2025) and IFC GN6 (2019), the baseline study is carried out based on information collected from a wide range of sources. Conservation status determinations will be based on a review of internationally recognised databases, national reference sources, current scientific literature and consultation with relevant taxonomic experts, as appropriate. Where differences exist between published sources, professional judgement and the most current scientifically robust information available will be used to support the assessment.

For the assessment of the present conditions of **habitats/ecosystems** within the AoI, the following information has been collected:

- list and distribution of habitats/ecosystem types occurring within the AoI, derived from Corine Land Cover (CLC) cartography¹⁶;
- conversion of habitats/ecosystem types into the EUNIS classification using the methodology described in the publication “A crosswalk between EUNIS Habitats Classification and Corine Land Cover”;
- protection status of habitats/ecosystems under Annex I of the EU Habitats Directive and Resolution 4 of the Bern Convention;
- identification of threatened habitats and ecosystems according to the IUCN Red List of Ecosystems.
- scientific literature on habitats/ecosystems conditions, distribution, conservation or threat status and pressures.

For the assessment of the present conditions of **fungi, flora and fauna species** within the AoI, the following information has been collected:

- species distribution ranges (Extent of Occurrence – EOO) of species potentially occurring within the Area of Influence (AoI), their global conservation status according to the IUCN Red List, aggregation and migratory patterns, and any other available information on species ecology, obtained through the consultation of the Integrated Biodiversity Assessment Tool (IBAT¹⁷);
- conservation status of species according to the IUCN Red Lists at European and national level;
- protection status of species under the EU Habitats Directive and Birds Directive, the Bern Convention, and the Bonn Convention;
- protection status of species under national legislation;
- scientific literature on species’ ecology, distribution, seasonality, conservation or threat status and pressures.

For the assessment of the present conditions of **protected areas and internationally recognized areas of biodiversity importance** within the AoI, the following information has been collected:

¹⁶ <https://land.copernicus.eu/en/products/corine-land-cover/clc2018>

¹⁷ <https://www.ibat-alliance.org/>

- identification of Key Biodiversity Areas (KBAs¹⁸), Important Bird and Biodiversity Areas (IBAs¹⁹), and Important Plant Areas (IPAs²⁰) based on the consultation of specific platforms;
- identification of protected areas located within the AoI, based on the consultation of the World Database on Protected Areas²¹;
- identification of UNESCO Natural and Mixed World Heritage Sites²² located within the AoI;
- identification of UNESCO Man and Biosphere Reserves²³ located within the AoI;
- identification of Ramsar Sites²⁴ (Wetlands of International Importance) potentially occurring within the AoI.

For the assessment of the present conditions of **ecosystem services** within the AoI, the following information has been collected:

- information on provisioning, regulating, cultural and recreational use services potentially affected by the Project, through the analysis of ecological characteristics of the habitats/ecosystems identified as occurring within the AoI;
- information on provisioning, regulating, cultural and recreational use services potentially affected by the Project, through the consultation of scientific literature.

As specified in EBRD Guidance Note 6 (2025), it is very important that the scoping is undertaken as a very first step, prior to the design of fieldwork, as it will help to focus time and resources where they will be most effective. EBRD GN6 also emphasizes that, specifically for ecosystem services, scoping requires environmental and social assessment to function in an integrated manner, not as separate parallel efforts. Potential environmental stressors are required to be identified, as well as the possible impacts these stressors will have on species and ecosystems, and whether these changes could affect ecosystem services used by project stakeholders and the project itself. The analysis is thought to be useful in order to identify key project dependencies on nature.

The following chapters are present:

- the definition of the Area of Influence for biological components (8.3.1);
- a preliminary assessment of biological features based on the consultation of desktop information sources (8.3.2);
- a gap analysis (8.3.3);
- and a summary of the additional studies identified as necessary to address the gaps identified (8.3.4).

The baseline study, particularly with regard to the description of ecosystem services and the identification of impact drivers affecting them, is expected to benefit substantially from primary data resulting from additional field surveys.

¹⁸ <https://www.keybiodiversityareas.org/>

¹⁹ <https://datazone.birdlife.org/about-our-science/ibas>

²⁰ <https://www.plantlife.org.uk/protecting-plants-fungi/important-plant-areas/>

²¹ <https://www.protectedplanet.net/en/thematic-areas/wdpa?tab=WDPA>

²² <https://whc.unesco.org/en/list/>

²³ <https://www.unesco.org/en/mab>

²⁴ <https://ramsar-monitoring.org/>

8.3.1 Aol for Biological Components

The Area of Influence (Aol) for biological components has been defined in accordance with international good practice and lender requirements, including IFC PS 6, EBRD ESR 6 and ADB ESS 6. The Aol for terrestrial and freshwater biological components entire Project footprint—covering all Project components associated facilities, both permanent and temporary—as well as a surrounding buffer zone extending up to 1 Km from the Project. The Aol may be further expanded, where necessary, to encompass sensitive biodiversity receptors and ecological features identified during baseline studies.

This Aol is considered adequate to capture potential impacts on habitats/ecosystems, fungi, flora and fauna species, ecological processes, and ecosystem services including disturbance, habitat loss and fragmentation, noise and dust propagation, fauna collision risk, and alterations to surface water features that may support freshwater biodiversity. Such defined Aol is also considered an appropriate ecological unit to support the design of a Biodiversity Management Plan.

The Aol definition is consistent with the approach adopted for other large-scale infrastructure projects in Türkiye and reflects the methodology applied in comparable ESIA scoping studies prepared by WSP. For this reason, the defined Aol will correspond to the Project Local Study Area (LSA) for the description of biological components.

The Project Aol is illustrated in Figure 16. The Aol has a total extent of 33,5 km² (3347 ha) within Province of Sivas at elevations between 1650 m and 1710 m a.s.l.

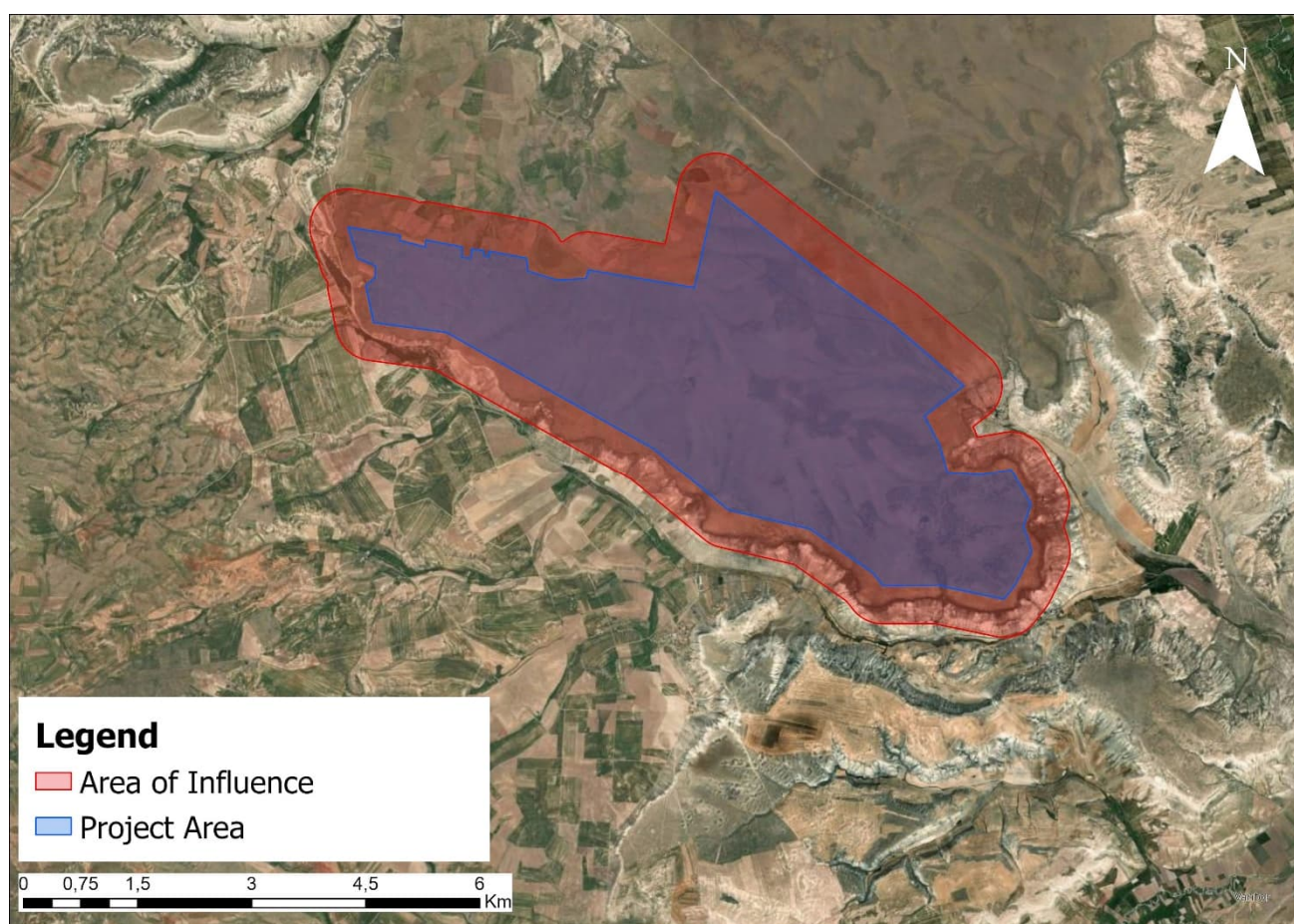


Figure 16: Area of Influence (Aol) for biological components

8.3.2 Overview of Ecological Context

The Project Aol is located within the administrative boundaries of Sivas Province, in central-eastern Türkiye, an area characterised by extensive rural land use and low population density. Administratively, the Project falls within Kangal District, one of the largest districts of Sivas Province in terms of surface area.

At local level, the Project footprint is situated in proximity to the rural settlements of Mancılık, Havuz, Beyyurdu, and Akpınar villages, all of which are administratively subordinate to the Kangal District Governorate. These settlements represent the closest inhabited areas to the Project and constitute the primary administrative and social reference units for stakeholder engagement, land administration and land use, and local governance processes associated with the Project.

The landscape where the Project Aol is located is characterised by open steppe ecosystems, agricultural land, and locally occurring seasonal watercourses.

The Project Aol is located within the major **'Eastern Anatolian deciduous forests' (PA0420) terrestrial ecoregion** (Olson, 2001). The Eastern Anatolian deciduous forest ecoregion occurs in montane and sub-montane areas of eastern Türkiye and extends into neighbouring regions of the South Caucasus and north-western Iran. The landscape is characterised by rugged mountain ranges, deeply incised valleys, and plateaus, shaped by complex tectonic processes and long-term erosion. The region experiences a continental climate, with cold, snowy winters and warm to mild summers, and pronounced seasonal variability. This ecoregion is identified as the Regional Study Area (RSA) for terrestrial biological components.

The Project Aol also falls within the major **'Upper Tigris and Euphrates' (442) freshwater ecoregion**. The Upper Tigris and Euphrates ecoregion encompasses the headwaters and upper reaches of the Tigris and Euphrates river systems in eastern and south-eastern Türkiye, extending into neighbouring parts of the Middle East. The ecoregion is characterised by mountainous and upland catchments, deeply incised valleys, and a network of rivers, tributaries, and seasonal streams shaped by tectonic activity and long-term fluvial processes. The region experiences a continental to semi-arid climate, with cold winters in upland areas, strong seasonal variation in precipitation, and pronounced fluctuations in river discharge. Freshwater habitats within this ecoregion include large rivers, smaller tributaries, seasonal streams, springs, and associated riparian zones, with hydrological regimes strongly influenced by snowmelt, seasonal rainfall, and upstream catchment characteristics. River channels range from fast-flowing, rocky sections in mountainous areas to slower-flowing reaches with finer substrates in lower valleys. Floodplains and riparian corridors, where present, support mosaics of wetland and semi-terrestrial habitats that play an important ecological role within the broader landscape. This ecoregion is identified as the Regional Study Area (RSA) for freshwater biological components.

The location of the Project Aol in relation to the terrestrial and the freshwater Regional Study Areas (RSAs) is shown in Figure 17 below.

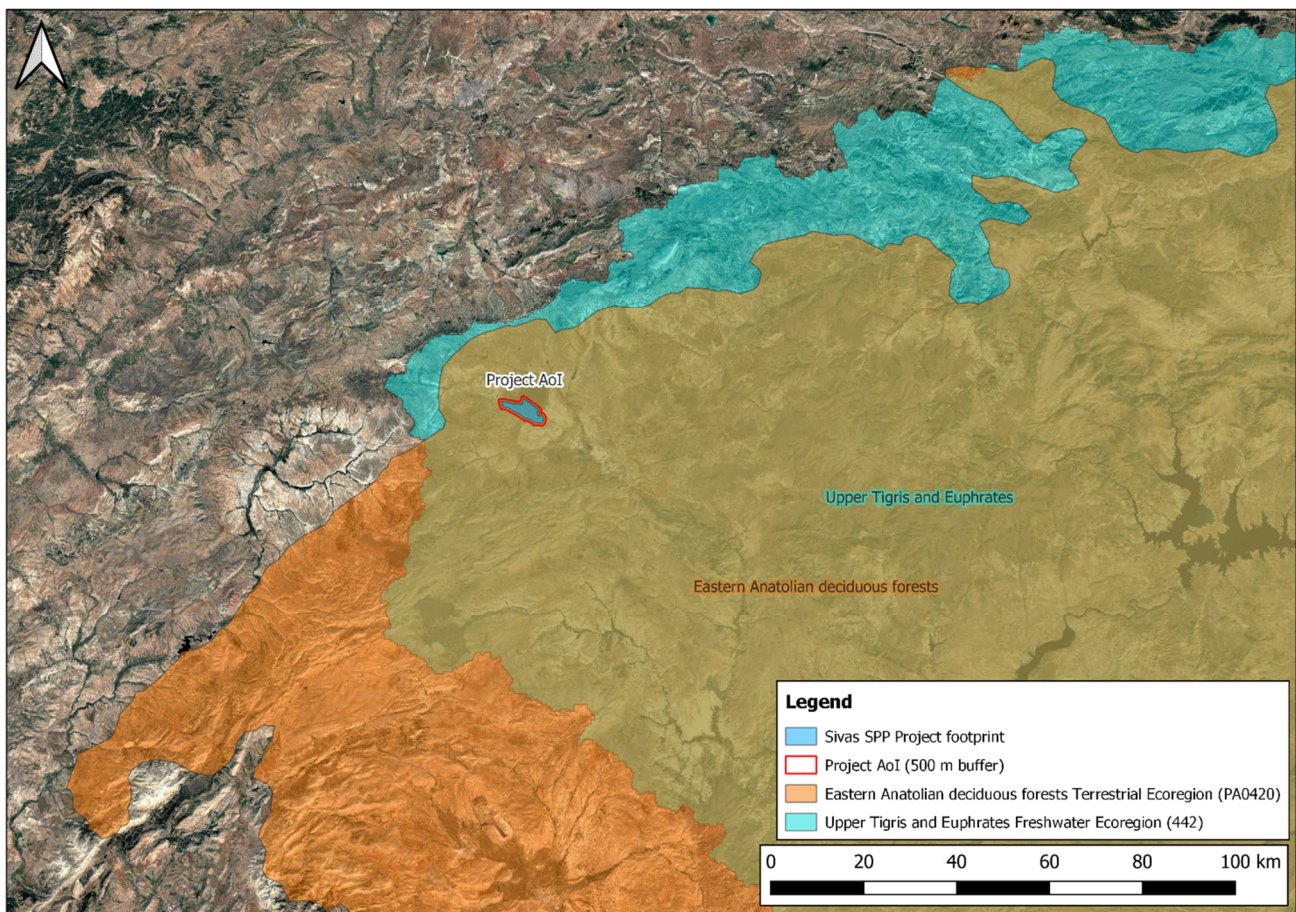


Figure 17: Biodiversity Terrestrial and Freshwater Regional Study Areas (RSAs)

8.3.2.1 Habitats/ecosystems

The Project AoI is located within a wider ecological landscape typical of central Anatolia, characterised by extensive open steppe ecosystems, low-intensity agricultural land, and locally occurring seasonal drainage features. At a regional scale, the Project AoI forms part of a predominantly rural matrix where natural and semi-natural habitats are interspersed with pastureland and dry farming areas, reflecting long-standing land use practices adapted to continental climatic conditions.

The ecological setting is representative of Central Anatolian steppe environments, which are recognised at national level for their biodiversity value, particularly in relation to endemic flora, steppe-specialist fauna, and ecological processes associated with semi-arid grassland systems. These steppe ecosystems are increasingly fragmented across Türkiye, making remaining areas of semi-natural habitat ecologically relevant at landscape scale.

Land cover within the broader area is dominated by non-irrigated arable land, grazing pastures, and semi-natural grasslands, with limited occurrence of woody vegetation. According to desktop analysis based on Corine Land Cover (CLC) and preliminary conversion to the EUNIS habitat classification system, the most relevant habitat types identified as occurring in the Project AoI are presented in Table 25 below. A preliminary map showing the distribution of patches belonging to habitat types identified as occurring in the Project AoI is presented in Figure 18 below. In the ESIA, the habitat categories occurring within the Project AoI will be identified and described also with reference to the classification provided by the EU Habitats Directive (92/43/EEC).

Based on preliminary habitat mapping, the majority of the Project footprint seems to be covered by perennial calcareous grassland and basic steppes. This habitat category is likely to meet the definition of Natural Habitat. The Biodiversity Baseline section of the ESIA will include an updated version of this mapping and classification, where relevant, taking into account the primary data resulting from habitats and flora periodical field surveys. The Biodiversity Baseline section of the ESIA will also include a full description of Natural and Modified Habitats, PBFs and CHs.

Table 25: Habitat types potentially present within the Project Aol according to Corine Land Cover (CLC) and EUNIS classification systems

CLC Code	CLC Name	EUNIS Code	EUNIS Name
211	Non-irrigated arable land	I1.2	Mixed crops of market gardens and horticulture
212	Permanently irrigated land	I1.1	Intensive unmixed crops
242	Complex cultivation	X07	Intensively farmed crops interspersed with strips of natural and/or semi-natural vegetation
243	Land principally occupied by agriculture, with significant areas of natural vegetation	I1.3	Arable land with unmixed crops grown by low-intensity agricultural methods
321	Natural grassland	E1.2	Perennial calcareous grassland and basic steppes
333	Sparsely vegetated areas	H.5	Miscellaneous inland habitats with very sparse or no vegetation

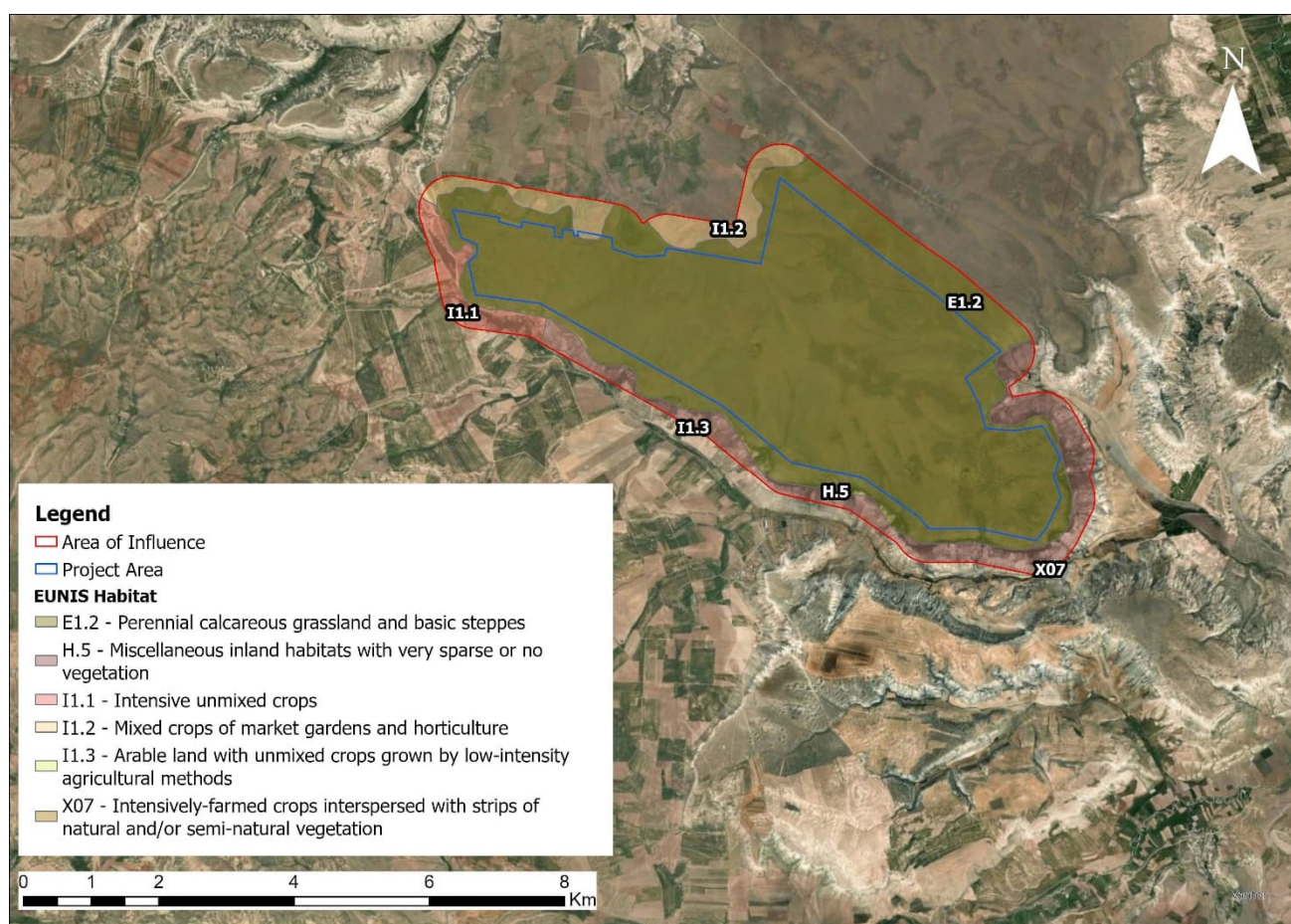


Figure 18: Map of habitat types potentially present in the Aol according to the EUNIS classification

8.3.2.2 Fungi, flora and fauna species

The steppe habitats identified as occurring in the Project Aol support **vegetation communities** dominated by herbaceous species and geophytes adapted to high seasonal variability, low precipitation, grazing pressure, and temperature extremes. These habitats are known to host a relatively high number of endemic and restricted-range plant species, particularly geophytes, which contribute to the conservation importance of Central Anatolian steppes. Based on the consultation of IBAT data, a total of 153 species has been identified as potentially present in the Project Aol, including threatened or near threatened species such as *Amblyopyrum muticum*, *Scrophularia gypsicola*, *Vicia sativa* subsp. *amphicarpa*, *Sorbus kusnetzovii*, *Crocus sivasensis*, *Medicago papillosa*, and not threatened but endemic species, such as *Iris stenophylla* subsp. *galatica*, *Crocus danfordiae*, and *Iris danfordiae*.

With regard to **fungi**, based on the consultation of IBAT data, a total of 18 species has been identified as potentially present in the region where the Project is located, including near threatened species (*Boletopsis grisea* and *Rubroboletus dupainii*) and threatened species (*Buglossoporus quercinus*, *Flammulina ononidis*, *Hygrocybe ovina*, *Hygrocybe punicea*, *Tricholoma apium*). However, following a more in depth literature review and a consultation with local biodiversity experts the availability of microhabitats suitable for fungal growth, such as shaded areas, woody substrates, permanently moist soils, or mature forest stands, resulted to be low within the Project Aol. Based on data collected from literature, fungi are not expected to represent a significant biodiversity component within the Project footprint under baseline conditions. Nevertheless, fungi have been considered within the overall biodiversity scoping framework, and specific observations on species belonging to

this Kingdom will be collected during site surveys planned for flora and habitats in order to ensure alignment with EBRD ESR6 and IFC PS6 requirements.

From a fauna perspective, the ecological conditions within the Project AoI result to be suitable for a range of steppe-adapted terrestrial vertebrates, including small mammals, reptiles, and ground-nesting or open-habitat bird species. The mosaic of open habitats and agricultural land also supports raptors and migratory birds, which may use the area for foraging, resting, or seasonal movements, even in the absence of formally designated migration corridors.

Data obtained from IBAT suggests the potential presence of a total of 40 **terrestrial mammal** species (bat species excluded), mainly steppe-adapted small mammals and medium-sized carnivores. Among these, it is important to highlight the potential presence of the Marbled Polecat (*Vormela peregusna*), classified as Vulnerable (VU) at global level.

Reptile and amphibian communities are closely linked to the availability of rocky substrates, steppe vegetation, and temporary water sources. In this context, the Project AoI may provide suitable habitat for steppe-associated reptiles. Data obtained from IBAT suggests the potential presence of a total of 5 amphibian species and a total of 23 reptile species, including the Central Turkish Mountain Viper (*Montivipera b. bulgardaghica*), which is classified as Endangered (EN) at global level.

The literature review identifies a high potential for the occurrence of **migratory and resident bird** species, including raptors. Data obtained from IBAT suggests the potential presence of a total of 225 bird species, including many species classified as Vulnerable (VU) or Endangered according to the IUCN Global Red List, such as *Aquila heliaca*, *Aquila nipalensis*, *Calidris falcinellus*, *Calidris ferruginea*, *Clanga clanga*, *Falco cherrug*, *Falco vespertinus*, *Neophron percnopterus*, *Oxyura leucocephala*, *Pluvialis squatarola*, *Streptopelia turtur*.

Preliminary assessment suggests limited suitability for roosting bats within the Project footprint, though the area may be used for foraging. Data obtained from IBAT suggests the potential presence of a total of 11 **bat species**, none of which being threatened based on the IUCN Global Red List.

Data obtained from IBAT also suggests the potential presence of a total of 72 species of **terrestrial macroinvertebrates**, belonging to Coleoptera, Diptera, Hymenoptera, Lepidoptera, Mantodea, and Orthoptera orders. Species belonging to Odonata order are excluded from this group and considered under the freshwater macroinvertebrates group.

Freshwater ecosystems in the region where the Project AoI is located are limited in spatial extent and are primarily associated with seasonal streams and drainage lines. Based on literature review, the ecological conditions within the Project AoI appear to be the same. Although often dry for significant portions of the year, these freshwater features may play an important ecological role by supporting freshwater macroinvertebrates, amphibians, and providing temporary resources for terrestrial fauna. The ecological condition and functionality of these freshwater features are strongly influenced by seasonal precipitation patterns and upstream land use. Based on data obtained from IBAT, seasonal streams and drainage features within the AoI may support a total of 41 **freshwater macroinvertebrate species**, belonging to Malacostraca, Gastropoda, Bivalvia classes and also including Odonata.

In addition, data obtained from IBAT indicate the potential presence of 22 **fish species** within the region where the Project AoI is located. However, a more in-depth review of the available literature, together with consultation with local biodiversity experts, has clarified that it is unlikely that the ecological conditions of watercourses within the AoI are suitable to support the continuous presence of these species. Detailed field investigations conducted within these aquatic environments will provide further clarity on this aspect. At present, among the fish species

identified as potentially occurring within the AoI based on the consultation of IBAT data, *Anguilla anguilla* (European Eel) is noted, which is classified as Critically Endangered (CR) at the global level.

A preliminary list of species of conservation concern, based on available desktop data, is presented in Table 26 below. The list will be refined during the ESIA through field surveys and consultation with related specialists.

Table 26: Preliminary list of species of conservation concern identified as potentially present in the Project AoI based on consultation of IBAT data

Taxon	Scientific name	Common name	Global IUCN Status
Flora	<i>Amblyopyrum muticum</i>	Mediterranean wildrye	EN (Local DD)
	<i>Scrophularia gypsicola</i>	Kangalsıracası	CR (Local CR)
	<i>Vicia sativa</i> subsp. <i>amphicarpa</i>	Subterranean Vetch	NT (Local DD)
	<i>Sorbus kusnetzovii</i>	Kusnetzov's rowan	NT (Local DD)
	<i>Crocus sivasensis</i> *	-	EN
	<i>Iris stenophylla</i> subsp. <i>galatica</i> **	Galatian narrow-leaved iris	LC
	<i>Crocus danfordiae</i> **	Danford's crocus	LC
	<i>Iris danfordiae</i> **	Danford's iris	LC
	<i>Medicago papillosa</i>	Alpine Alfalfa	NT
Fish	<i>Anguilla anguilla</i>	European Eel	CR
	<i>Luciobarbus subquincunciatus</i>	Leopard barbel	CR
	<i>Oxynoemacheilus paucilepis</i>	Mancılık loach	EN
	<i>Oxynoemacheilus seyhanensis</i>	Lycaonian loach	CR
	<i>Pseudophoxinus firati</i>	Euphrates spring minnow	EN
	<i>Squalius kottelati</i>	Cilician pike chub	NT
	<i>Salmo platycephalus</i>	Flathead trout	EN
Reptile	<i>Montivipera b. bulgardaghica</i>	Central Turkish Mountain Viper	EN
Mammal	<i>Vormela peregusna</i>	Marbled Polecat	VU
Bird	<i>Aquila heliaca</i>	Eastern Imperial Eagle	VU
	<i>Aquila nipalensis</i>	Steppe Eagle	EN
	<i>Calidris falcinellus</i>	Broad-billed Sandpiper	VU
	<i>Calidris ferruginea</i>	Curlew Sandpiper	VU
	<i>Clanga clanga</i>	Greater Spotted Eagle	VU
	<i>Falco cherrug</i>	Saker Falcon	EN
	<i>Falco vespertinus</i>	Red-footed Falcon	VU
	<i>Neophron percnopterus</i>	Egyptian Vulture	EN
	<i>Oxyura leucocephala</i>	White-headed Duck	EN
	<i>Pluvialis squatarola</i>	Grey Plover	VU

Taxon	Scientific name	Common name	Global IUCN Status
	<i>Streptopelia turtur</i>	European Turtle-dove	VU

*RR – Restricted Range (expert opinion)

**Endemic (expert opinion)

8.3.2.3 Protected Areas and Internationally Recognised Areas

A review of international and national biodiversity designations was undertaken through the Integrated Biodiversity Assessment Tool (IBAT) and other relevant databases.

The desktop assessment confirmed that the Project AoI does not overlap with any legally designated national protected areas (e.g. National Parks, Nature Conservation Areas) nor with any areas internationally recognised as important for biodiversity.

When extending the analysis to a broader spatial context, namely within a radius of 50 km from the Project site, it is observed that the surrounding regional ecological context likewise does not include any protected areas, Ramsar Sites (Wetlands of International Importance), UNESCO Natural and Mixed World Heritage Sites, or UNESCO Man and Biosphere Reserves. Within the defined regional ecological context, however, the Ulaş Lakes (Ulaş Gölleri) site is identified. This site is recognised as both a Key Biodiversity Area (KBA) and an Important Bird and Biodiversity Area (IBA). The site is located at a minimum distance of approximately 25 km north of the Project AoI. This IBA has a single qualifying species, namely the White-headed Duck (*Oxyura leucocephala*), which is also the only species triggering the KBA criteria for the identified KBA. In addition, the Kulmac Mountains (Kulmac Dağları) constitute a very small KBA located approximately 25 km west of the Project AoI. This KBA has a single species triggering the KBA criteria, namely *Montivipera b. bulgardaghica*.

Furthermore, within the defined regional ecological context, the Zamantı River is identified. This river is officially recognised in Türkiye for its importance as a wetland, although it is not designated as a Ramsar Site. The Zamantı River is located at a minimum distance of approximately 46 km from the Project AoI.

The location of the identified Key Biodiversity Areas (KBAs), the Important Bird and Biodiversity Area (IBA), and the Zamantı River, in relation to the Project Area of Influence (AoI), is shown in Figure 19 below.

In addition, three Important Plant Areas (IPAs) have been identified within a distance of 50 km from the Project AoI, namely the Ziyarettepe IPA, the Ulaş-Tecer IPA, and the Kutlukaya Boğazdere IPA. The location of these IPAs is shown in Figure 20 below.

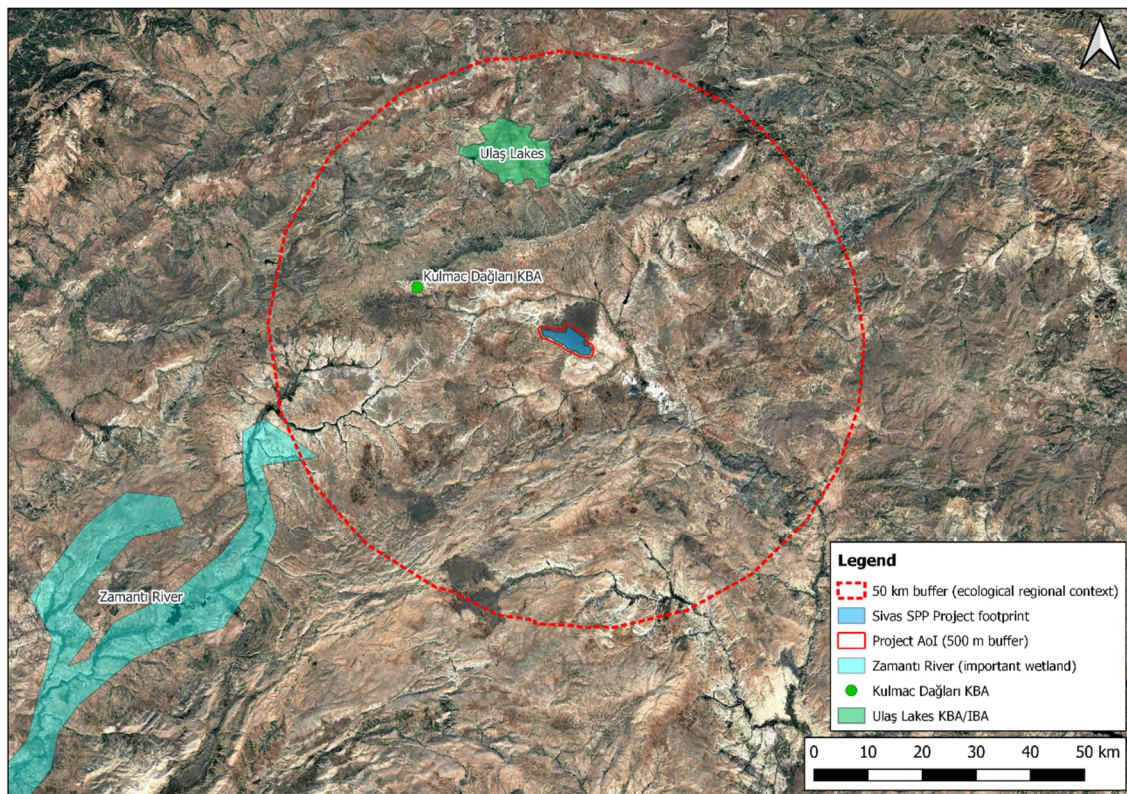


Figure 19: Location of KBAs, IBAs and important wetlands in relation to the Project AoI

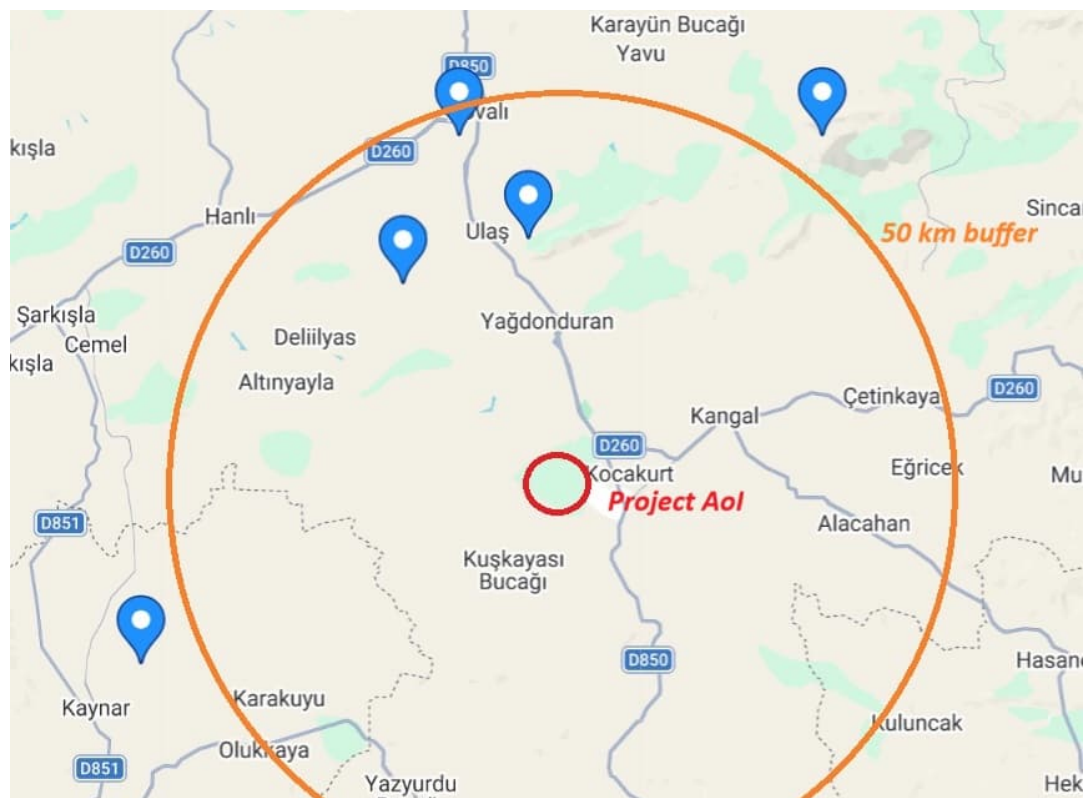


Figure 20: Location of IPAs in relation to the Project AoI

8.3.2.4 Ecosystem Services

Based on the desktop review and the preliminary understanding of the ecological and land-use context, the ecosystem services currently known to be provided within the Project Aol are primarily associated with semi-natural steppe ecosystems, pastureland, and low-intensity agricultural landscapes. These ecosystems support a range of provisioning, regulating, and cultural ecosystem services that are relevant at local scale, particularly for nearby rural communities.

Provisioning services within the Aol are mainly linked to traditional land uses, including livestock grazing on pastureland, dry farming, and limited use of natural vegetation for fodder. Seasonal watercourses and drainage features may also provide intermittent water resources for livestock and wildlife, although their contribution is strongly dependent on seasonal precipitation patterns and hydrological conditions. At present, there is no evidence to suggest intensive exploitation of wild biological resources (e.g. fishing, collection of non-timber forest products) within the Project Aol.

Regulating services provided by the steppe and grassland ecosystems include soil stabilisation and erosion control, particularly on gently sloping terrain, as well as regulation of surface runoff during rainfall events. Vegetation cover contributes to the maintenance of soil structure and to the moderation of dust generation, which is a relevant regulating function in semi-arid Central Anatolian landscapes. In addition, these ecosystems contribute to local climate regulation and carbon storage, albeit at relatively modest levels compared to forested ecosystems.

Supporting services are represented by the role of habitats within the Aol in sustaining biodiversity and ecological processes, including nutrient cycling, primary production, and the provision of habitat for steppe-adapted flora and fauna. These supporting services underpin the delivery of other ecosystem services and are closely linked to the ecological integrity of steppe habitats identified within the Project Aol.

Cultural services are currently understood to be limited and largely indirect. The Project Aol does not include formally designated recreational or tourism areas; however, the landscape may hold local cultural value related to traditional pastoral practices and long-established land use patterns. These aspects are best understood through engagement with local stakeholders and are therefore expected to be further clarified during the social baseline studies and stakeholder consultations planned as part of the ESIA process.

At this scoping stage, information on ecosystem services is primarily derived from desktop analysis and preliminary field observations, and remains insufficient to fully characterize the importance, spatial distribution, and beneficiaries of ecosystem services within the Aol. Consequently, a more detailed assessment of ecosystem services, particularly those linked to livelihoods and community well-being, will be undertaken through targeted field surveys and structured consultation with local stakeholders, in line with EBRD ESR6 and IFC PS6 requirements.

8.3.3 Gap Analysis

Table 27: Gap analysis for biological components

Visual	Description
Available information typology and sources	■ Data obtained from the Integrated Biodiversity Assessment Tool (IBAT). ■ Corine Land Cover ■ EUNIS Habitat classification ■ Analysis of satellite imagery through Google Earth.

Visual	Description
	■ Edmondson, J. (2002). Türkiye bitkileri kırmızı kitabı (eğrelti ve tohumlu bitkiler)/Red Data Book of Turkish Plants (Pteridophyta and Spermatophyta). Edited by T. Ekim, M. Koyuncu, M. Vural, H. Duman, Z. Aytaç & N. Adıgüzel. Ankara: Turkish Association for the Conservation of Nature, and Van Centennial University. 2000. Edinburgh Journal of Botany, 59(3), 459-466. ■ Önder, Ş,Ö and Bulut Ş. (2020) Türkiye Memelileri. Panama Yayıncılık. No: 491 ■ Baran. İ., Avcı, A., Kumlutaş, Y., Olgun K. and Ilgaz Ç. (2005). Türkiye Amfibi ve Sürüngenleri. Palme Yayınevi. ISBN No: 9786052826119. ■ TRAKUS (2021). Türkiye'nin kuşları. ISBN No: 9786254054761. ■ Web sources: ■ European Environment Agency (https://eunis.eea.europa.eu/index.jsp) ■ Invasive Species specialist Group (IUCN) http://issg.org/ ■ IUCN Red List of Threatened Species: https://www.iucnredlist.org ■ Turkish Plants Data Service (TÜBİVES) - Version 2.0 BETA (http://194.27.225.161/yasin/tubives/index.php) ■ Bizimbitkiler.org.tr, Nezahat Gokyigit Botanical Garden Service (https://bizimbitkiler.org.tr/yeni/demos/technical/)
Deficiency/GAP Analysis and Required Studies for the ESIA	Baseline data for biological components are largely desktop-based and preliminary. Gaps remain in the field-verified characterisation of habitats/ecosystems and vegetation, confirmation of endemic and threatened flora, and assessment of habitat suitability for fungi (likely limited). Species presence, distribution and habitat use for terrestrial mammals, bats (no acoustic/roost surveys yet), herpetofauna, and birds (no systematic ornithological surveys yet) are not confirmed. Freshwater fish and aquatic macroinvertebrate data are constrained by hydrological seasonality and lack of targeted surveys, while terrestrial macroinvertebrates are based on potential occurrence only. Ecosystem services are preliminarily identified but insufficiently characterised in terms of spatial distribution, importance, and beneficiaries. Additional field studies are required to address the identified gaps.
Gap Classification	▲ Large gap

8.3.4 Additional Studies

To address the gaps identified for biological components, a programme of targeted field surveys will be implemented. Surveys will be conducted between spring and summer, covering the entire Project footprint and an appropriate buffer zone of at least 500 m around the boundaries of the Project footprint. The field surveys will be carried out by experienced taxon-specific specialists to ensure compliance with EBRD ESR6 and IFC PS6 requirements. Accordingly, the detailed survey plan is provided in APPENDIX B.

The scope and design of the biodiversity field survey programme have been informed by the findings of the desktop review, including the preliminary identification of habitats, species of conservation concern and potential biodiversity sensitivities within the Area of Influence. Survey priorities have been developed to support the assessment of Natural Habitat, PBFs and Critical Habitat, where relevant, and to ensure alignment with lender requirements, including IFC PS6, EBRD ESR6 and ADB ESS6. The survey programme will provide information to support the assessment of species occurrence, habitat condition and biodiversity impacts within the ESIA.

Table 28: Biological Baseline Studies Planned for Sivas SPP

#	Survey /Field Work	Scope / Target Group
1	Scoping and Initial Field Studies	Flora, Geophytes, Vertebrates
2	Flora & Fauna Surveys	Flora, Mammals, Reptiles & Amphibians
3	Avifauna (Bird Survey)	Breeding birds
4	Bat Survey	Bat activity & roost assessment
5	Freshwater Survey	Aquatic macroinvertebrates & fish
6	Terrestrial & Aquatic Invertebrates	Terrestrial & aquatic macroinvertebrates & fish
7	Fungi Survey	Fungi (mycology)
8	Reptiles & Amphibians Survey	Reptiles & Amphibians

The Biodiversity Baseline section of the ESIA will include a habitat quality assessment, based on the information available from literature and field surveys conducted. This assessment will represent the baseline for the quantification of habitat loss and, consequently, for targeting required offset.

Habitats and flora surveys will refine the preliminary desktop-based habitat mapping and confirm the presence, distribution, and conservation status of natural and semi-natural habitats using the EUNIS classification. Targeted flora surveys, including focused searches for endemic and threatened plant species, will be undertaken during appropriate phenological windows to overcome limitations of the early-season scoping survey. Terrestrial fauna surveys will include dedicated investigations for amphibians and reptiles using Visual Encounter Surveys and call surveys in suitable habitats, particularly near seasonal watercourses, to confirm species presence and habitat use. Terrestrial mammals will be surveyed through a combination of direct observations, tracks and scat searches, burrow identification, camera trapping, and targeted live-trapping for small mammals, supported by interviews with local stakeholders where appropriate.

Bat surveys will be implemented to address the absence of baseline data, combining daytime roost assessments with dusk/dawn emergence surveys and multi-night static acoustic monitoring using full-spectrum detectors, in line with international best practice. These surveys will verify bat presence, activity levels, and potential use of the Project Area for foraging or commuting.

Ornithological surveys will be conducted throughout the breeding season using transect and point-count methods to characterise bird assemblages, determine breeding status, and identify sensitive species and areas of ecological importance.

Finally, freshwater biodiversity gaps will be addressed through targeted surveys of aquatic macroinvertebrates and fish within seasonal streams, applying standardised multi-habitat sampling and electrofishing methods to account for hydrological variability and confirm species presence and habitat quality.

In order to address the gap related to ecosystem services, all information collected through the surveys planned to fill the gaps identified for the social components will be used (see section 8.4). These surveys include interviews with pastureland users.

For biodiversity-related impacts, the ESIA will apply the mitigation hierarchy in accordance with IFC PS6, EBRD ESR6 and ADB ESS6 requirements. Particular consideration will be given to the avoidance and minimisation of impacts arising from vegetation clearing, topsoil stripping, site levelling, construction activities and associated facilities. The biodiversity assessment will evaluate potential impacts on habitats, species of conservation concern, ecosystem services, Natural Habitat, Critical Habitat and Priority Biodiversity Features (PBFs), where relevant. Where significant biodiversity impacts cannot be avoided, appropriate restoration, compensation and/or offset measures will be considered in accordance with applicable lender requirements. The assessment will examine potential pathways to achieve no net loss for Natural Habitat and PBFs, and net gain for Critical Habitat, where applicable, in accordance with lender requirements.

8.4 Social Components

The social baseline study examines the present conditions within the AoI, which includes a detailed analysis of the current socioeconomic setting. This involves evaluating existing demographic data, such as population size, age distribution, and household composition. It also includes an assessment of the local economy, especially covering employment rates, income levels, and sources of livelihood.

Additionally, the baseline study examines the current state of social infrastructure and services, encompassing educational facilities, healthcare services, transportation networks, and water sources. The baseline also considers social factors such as social structure and cultural heritage.

The socio-economic baseline study aims to:

- Describe and quantify characteristics such as demography, economy, education, and health.
- Assess land use and land based livelihoods
- Depict project affected people's key issues/concerns
- Identify vulnerable groups, minorities, gender dimensions in the impact area
- Assess the sensitivity, vulnerability, and importance of resources/receptors.
- Describe socioeconomic conditions and trends in affected areas to identify potential impacts and develop mitigation measures.
- Assess other existing and planned investments/projects in the area to evaluate potential cumulative impacts.

Hence, the baseline provides a comprehensive snapshot of the existing socioeconomic conditions before the Project to serve as an essential reference point for identifying and measuring the impacts of the Project, ensuring that any changes can be accurately attributed to the Project and appropriately addressed.

The social baseline study includes the following socioeconomic indicators:

- Administrative Structure
- Population and Demography
- Economy and Employment

- Land Use
- Education
- Health
- Infrastructure, Services and Ecosystem Usage
- Vulnerability and Gender (and GBVH, including gender-based risks and access to reporting mechanisms)
- Cultural Heritage

The data necessary for the social baseline will be gathered using various research methods. The baseline study involves collecting, reviewing, and analysing a range of secondary data, primarily including information from the Turkish Statistical Institution (“TÜİK”). Additionally, primary data will be obtained through household surveys, and community-level surveys conducted with the mukhtars of the Project-affected settlements within the Aol during the social field study. Quantitative data collection will be complemented by qualitative data gathered through community-level consultations, focus group discussions, and in-depth interviews with Project stakeholders. Focus group discussions will be conducted with livestock producers, women producers, and seasonal workers (if any), migrant and refugee workers (if any), as well as local and foreign herders, to better understand the Project’s potential impacts on livestock production and livelihoods.

Baseline livestock-related data will be requested from the District Directorate of Agriculture and Forestry, Sivas Sheep Breeders Association, Cattle Breeders Association, Sivas Livestock Producers Cooperative, and other relevant local stakeholders. In addition, official pasture-related data (including pasture size, quality, existing investments, and user profiles) will be requested from the Provincial Directorate of Agriculture and Forestry.

The baseline assessment aims to provide a holistic understanding of socio-economic conditions by integrating findings from socio-economic surveys, stakeholder consultations, and official data sources.

8.4.1 Aol for Social Components

The Aol is defined by considering the direct and indirect impacts of the Project. In line with EBRD requirements, the Aol encompasses:

- *The project footprint*, including all permanent and temporary project components such as facilities, infrastructure, access roads, construction sites, ancillary installations and other project-related activities,
- *Areas subject to direct impacts resulting from project activities*, including physical disturbance, land acquisition or restrictions on land use, changes to environmental conditions, community health and safety risks, and socio-economic effects on project-affected people,
- *Areas subject to indirect impacts*, where project activities may lead to secondary effects, including changes in livelihoods, access to resources, land use patterns, ecosystem services or community dynamics,
- *Associated Facilities*, which are not financed as part of the project but are essential for its viability and whose environmental and social impacts are reasonably foreseeable,
- *Areas potentially affected by cumulative impacts*, where the incremental effects of the project interact with impacts from existing or reasonably foreseeable developments.

While the settlements identified within the Social Aol form the primary focus of baseline data collection and stakeholder engagement activities, the ESIA will also consider broader social impacts associated with the Project. These may include impacts related to workforce sourcing and accommodation, traffic and road safety,

use of local services and infrastructure, economic opportunities and other indirect effects that may extend beyond the immediate Project Area.

The delineation of the project's AoI reflects the nature and scale of project activities, the sensitivity of environmental and social receptors, and the potential pathways through which impacts may occur, consistent with the requirements of EBRD ESR 1.

The AoI for the social baseline study has been defined by considering both (i) direct interaction with the Project's daily activities, primarily based on proximity, and (ii) communities affected by land take associated with the Project. Accordingly, the AoI reflects not only spatial proximity to the Project footprint but also the presence of Project-related land take and associated direct impacts.

The Social AoI has been defined taking into consideration the Project footprint, temporary facilities, associated facilities, access roads and potential impact pathways associated with construction and operation activities, including traffic, noise, visual impacts, dust generation and workforce-related effects. The adequacy of the Social AoI will be reviewed as the ESIA progresses and refined if needed based on the findings of baseline studies, stakeholder engagement activities and technical assessments.

Settlements that are subject to land take for the Project have been identified and classified as being within the direct impact AoI, regardless of their distance from the Project footprint. These settlements are considered directly affected due to the permanent loss of land and the resulting changes in land use and livelihoods.

In addition, settlements that are not affected by land acquisition but are located within a 5-kilometre (km) radius of the Project footprint have also been considered within the AoI, based on their proximity and potential for direct interaction with Project activities. No settlements were identified within the indirect impact area beyond this defined AoI.

For clarity, the criteria applied for defining the AoI and for classifying settlements according to the level of impact are summarised below.

Direct Impact:

- Any settlement affected by land acquisition for the Project is automatically included within the AoI, regardless of its distance from the Project footprint.
- In addition, settlements that are not affected by land acquisition but are located within a 2-kilometre (km) radius of the Project footprint are included within the direct impact AoI, due to their potential for direct interaction with Project daily activities (such as construction activities, traffic movements, and workforce presence).

Indirect Impact:

- A wider proximity consideration, extending to a 5 km radius from the Project footprint, was applied to assess the potential for indirect impacts.

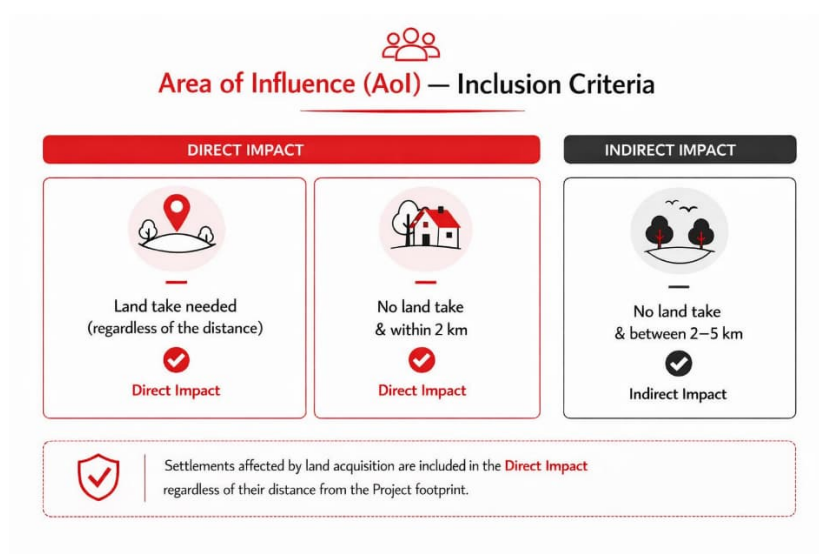


Figure 21: Area of Influence (AoI) Inclusion Criteria

From a social perspective, the definition of the AoI is also informed by direct and induced social influences, spatial implications, potential intrusion effects, and stakeholder typology. The Social AoI classification applied for the Project is illustrated in to Figure 22. Based on the baseline screening and scoping conducted as part of the Sivas Project, Table 29 summarises the settlements located within the AoI, outlining population figures, distances to the Project, and the corresponding impact factors.

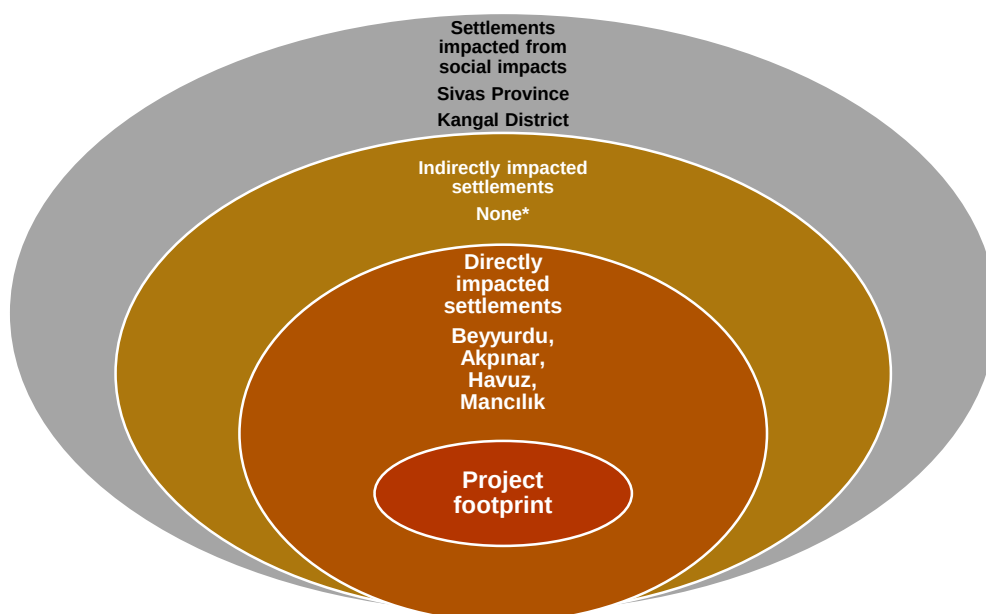


Figure 22: Social Area of Influence of the Sivas SPP Project

No settlements were identified within the indirect impact area for the Sivas SPP, in accordance with the AoI criteria described above. During the initial screening phase, the Humarlı settlement, located approximately 5.51 km from the Project footprint, was reviewed as part of the broader proximity-based assessment. However, based on the findings of the subsequent scoping fieldwork and a refined application of the AoI criteria, the settlement was determined not to fall within the Project's AoI.

Nevertheless, given the potential for informational engagement and to support a comprehensive understanding of the local context, it is envisaged that a community-level consultation with the mukhtar may be undertaken, subject to feasibility. This engagement would be conducted at a community level only and would not involve household-level surveys.

Table 29 : Project Affected Settlements and Their Distances to the Sivas SPP Project

Province	District	Settlement	Population	Distance to the Project Area from the Settlement Centre (km)	Potential Impact Factors	Potential Impact (Direct/Indirect)
Sivas	Kangal	Beyyurdu	26	0.733	Proximity & Land Acquisition	Direct
Sivas	Kangal	Akpınar	48	2.284	Proximity & Land Acquisition	Direct
Sivas	Kangal	Havuz	768	5.600	Land Acquisition	Direct
Sivas	Kangal	Mancılık	167	5.447	Land Acquisition	Direct

Social baseline and impact assessment field studies are planned to be conducted in May 2026 and will include household- and community-level data collection in the settlements within the AoI. In settlements classified as subject to direct impacts, the fieldwork will comprise household surveys, community-level questionnaires, and focus group discussions. In settlements identified as being potentially subject to indirect impacts, data collection will be undertaken at the community level through community-level survey.

Demographic information of the neighbourhoods will be collected through a community-level questionnaire. The household questionnaire will gather details about the demographic structure of households and the impact of the Project, including land acquisition and expropriation.

8.4.2 Socio-economic Survey

8.4.2.1 Sampling

The determination of an appropriate sample size ensures that the collected data are statistically reliable and sufficiently representative of the study population. Since the purpose of the household survey is to understand the socioeconomic characteristics of the Project-affected settlements and related potential Project impacts, a standard statistical approach will be applied to calculate the required number of households to be surveyed.

As the first step in determining the sample size, a list of Project-affected settlements is prepared. Since settlement-specific household data is not available, the population figures for each settlement are obtained using publicly available demographic statistics from the Turkish Statistical Institute ("TURKSTAT"). During the scoping site visit conducted on 16-17 April 2026, information on seasonal and permanent household numbers in the settlements was obtained from the mukhtars.

Reported household numbers are used to calculate the required sample size by applying the standard statistical formula for sample size determination, with the following parameters:

- 95% confidence level,
- 5% margin of error,
- Population proportion of 0.50, a conventional assumption that maximizes statistical reliability.

For an initial estimation, the sample size is calculated using the standard formula for large (infinite) populations:

$$S = \frac{Z^2 \times p (1 - p)}{m^2}$$

Where:

- S = required sample size before adjustment
- Z = Z-score corresponding to the selected confidence level (1.96 for 95%)
- p = population proportion (0.50 is used when no prior estimate exists, and it produces the most conservative sample size)
- m = margin of error (0.05)

Using these parameters, the initial sample size for an infinite population is calculated.

Since the number of households in the Project Area is finite and known ($N = 295$ households), the initial sample size is adjusted using the Finite Population Correction formula:

$$AS = \frac{S}{1 + \frac{S-1}{N}}$$

Where:

- AS = adjusted sample size (final sample size),
- N = total number of households in the settlements.

Applying this correction ensures that the final sample size is appropriate for the actual population and does not overestimate the number of households required. Following the correction process, the final sample size for the household survey is determined.

The total number of all households during summer within the Project-affected settlements was identified as 384 based on mukhtar consultations conducted during the scoping site visit. Using this total population size, the required household survey sample was calculated at **193 surveys**, based on a 95% confidence level, a 5% margin of error, and an assumed population proportion of 50%.

Given the low number of households in Beyyurdu, Akpınar and Mancılık Villages, a full census was targeted for these settlements. To ensure overall representativeness of the household survey, the remaining sample was allocated to Havuz Village, where the number of household surveys was determined proportionally based on the residual sample size required to meet the total survey target.

The calculated sample size for the social field study is presented in Table 30.

Table 30: Calculated Sample Size for the Social Field Study for Sivas SPP

Project	# Settlements	Province	District	Settlement	Population (TURKSTAT)	Permanent households by mukhtar consultations	Household number during summer by mukhtar consultations	Planned Household Surveys	Community level survey	Focus group interview ((Women)
Sivas SPP	4	Sivas	Kangal	Beyyurdu	26	8	12	12	1	1
				Akpınar	48	8	22	22	1	1
				Havuz	768	128	300	109	1	1
				Mancılık	167	25	50	50	1	1
					1009	169	384	193	4	4

8.4.2.2 Data Collection Methods

Primary Data Collection

A combination of quantitative and qualitative methods will be applied for data collection to ensure a comprehensive understanding of the social context where the Project will operate. The methods will include household surveys, Separate Focus Group Discussions (“FGDs”): with Women and Pasture Users and community level surveys with mukhtars.

It should be noted that not all households may be present in the villages at the time of the field visits; therefore, it may not be possible to reach the targeted numbers through in-person consultations alone. In such cases, the remaining interviews will be completed through follow-up telephone calls as much as possible.

■ **Household Surveys**

A structured household questionnaire will be administered to purposively selected households across the two settlements. The household surveys aimed to capture detailed socioeconomic information, including demographic characteristics, educational attainment, employment and income sources, livelihood activities, household assets and expenditure patterns, access to infrastructure and services (water, electricity, health, education, transportation), land use and ecosystem services usage, and perceptions of the Project and expectations regarding Project benefits or risks.

Included within the household survey, dedicated Livelihood Restoration Plan (“LRP”) consultations will be conducted with all affected households. These consultations will engage households both as affected communities and as pastureland users. The process will include the participation of a veterinary specialist to support the assessment of livestock-related impacts and livelihood restoration needs.

■ **Community Level Surveys with Mukhtars**

Mukhtars, as the elected heads of settlements, will be engaged to gather contextual information and validate demographic and socioeconomic data. These surveys will provide settlement-level demographic insights, current challenges in infrastructure and service delivery, local development priorities, perceptions and concerns regarding the Project and insights on vulnerable groups, shared community assets, social cohesion and community dynamics and seasonal patterns affecting livelihoods.

■ **Separate Focus Group Discussions with Women and Pasture Users**

To ensure inclusivity and gender-sensitive analysis, women-only FGDs will be conducted in each settlement. These discussions will aim to understand women’s roles in household and community life, gender-specific livelihood practices, access to resources, services, and decision-making, potential gender-differentiated Project impacts, safety, mobility, and public space concerns and women’s expectations and priorities regarding the Project.

To understand potential impacts on pastureland use, dedicated FGDs will be conducted with pasture users in each settlement. These consultations will gather detailed information on existing pasture use practices, seasonal grazing patterns, livestock composition, and pastureland-based livelihoods. FGDs will aim to identify potential Project-induced risks, such as restricted access to grazing areas, and reduced pasture areas. Pasture users’ expectations, priorities, and preferred mitigation and compensation approaches will also be documented to inform a sustainable and socially responsive project design.

■ **Institution Interviews**

Institutional consultations will be conducted with key public authorities to obtain official data and verify community-level information. Interviews will be held with the Governorate, Municipality, District Agriculture and Forestry Directorate, Provincial Directorate Pasture Commission, and the Special Provincial Administration.

Official data from TurkVet will be requested to establish a solid baseline on livestock production. In addition to public institutions, consultations will be held with representatives from cooperatives and unions for livestock production, dairy farmers, beekeepers in Sivas.

These engagements will aim to gather information on current land use, pasture allocation procedures, ongoing or planned development initiatives, or infrastructure needs. Institutional stakeholders will also be asked to provide insights on potential Project impacts, local governance responsibilities, coordination requirements, and opportunities for enhancing community benefits.

Secondary Data Collection

Secondary data will be obtained from a range of national and local sources to support the development of the social baseline and to contextualize the primary data collected during the field study. These sources may include national institutions (such as TURKSTAT, ministries, research institutes, and universities), national and local census data, web-based published reports, assessment reports prepared by local and national Non-Governmental Organizations (“NGOs”), and Project-specific environmental and social reports.

The analysis of secondary data will provide essential background information on the region and districts where the Project is located. It will help establish a preliminary understanding of demographic trends, administrative structures, socioeconomic conditions, and sectoral characteristics prior to fieldwork.

8.4.3 Stakeholder Engagement

The Stakeholder Engagement Plan (“SEP”) is a guidance for stakeholder consultations and communications during all Project phases. SEP is a living document that should be updated periodically to provide a roadmap for engagement in monitoring the effectiveness of impact mitigation measures. Within the scope of the Project, a preliminary SEP has been prepared to ensure that the Project stakeholders, including the Project affected people and other interested stakeholders, are informed about the Project in a timely manner with consistent, comprehensive, relevant, accessible, and transparent information. The SEP ensures a participatory approach, and the implementation of the SEP is intended to elicit opinions and concerns regarding the Project and its impacts.

A grievance encompasses any complaint, comment, feedback, question, suggestion, or request related to the execution of the Project and its impacts. The grievance mechanism is crucial for stakeholders to express their concerns and complaints regarding the Project. It aims to demonstrate responsiveness to stakeholder needs and foster a trustworthy and constructive relationship by implementing appropriate mitigation strategies. Therefore, a Worker Grievance Mechanism (Internal) and a Community Grievance Mechanism (External) have been formulated within the preliminary SEP and will be implemented to ensure that all stakeholders have accessible channels to voice their concerns and complaints effectively. These mechanisms will be in place throughout all Project phases to address grievances from workers and community members promptly and effectively.

8.4.4 Stakeholder Engagement Activities

8.4.4.1 Previous Stakeholder Engagement and Consultation Activities

Stakeholder engagement involves transparently sharing Project-related information to keep stakeholders informed about activities and developments. This includes facilitating clear and accessible disclosure of E&S information by distributing relevant data and reports to stakeholders. It also entails meaningful stakeholder consultation, implementing a structured approach to engage stakeholders, ensuring their active involvement in the Project’s development through open consultations, soliciting feedback, and integrating valuable insights shared by stakeholders.

8.4.4.1.1 Stakeholder Engagement Activities Conducted during the EIA Phase

As part of the EIA process, a Public Information and Participation Meeting was conducted in accordance with the Turkish EIA Regulation. The meeting was organised to inform the potentially affected local communities about the Project and to collect their views and concerns.

The meeting was held on December 4th, 2025, at 13:30, at the Havuz Village Mukhtar's Office, in the Kangal District of Sivas Province. The venue, date and time of the meeting were determined jointly by the Sivas PDoEUCC and the MoEUCC. Prior to the meeting, public announcements were made in both national and local newspapers at least ten days in advance, in line with regulatory requirements. The announcements are presented in Figure 23.

Ulusal Gazete	Yerel Gazete
Milat Gazetesi	Bizim Sivas Gazetesi
20.11.2025	20.11.2025
DUYURU ÇED Sürecinde Halkın Bilgilendirilmesi ve Sürece Katılımı Toplantısı Enerji İşleri Genel Müdürlüğü tarafından Sivas İli, Kangal İlçesi, Mancılık, Havuz, Beyyurdu, Akpınar Mahalleleri sınırları içerisinde "Sivas Yağdonduran Güneş Enerji Santrali (2.000 Ha, 1000 MWm / 1000 MWe)" yapılması planlanmaktadır. Söz konusu proje için Çevresel Etki Değerlendirmesi (ÇED) Yönetmeliğinin 9. Maddesi gereğince aşağıda belirtilen tarih ve saatte faaliyetle ilgili halkı bilgilendirmek, görüş ve önerilerini almak için "Halkın Bilgilendirilmesi ve Sürece Katılımı Toplantısı" yapılacaktır. Halkımıza saygı ile duyurulur. Toplantı Yeri : Havuz Köyü Muhtarlığı Toplantı Yerinin Adresi : Havuz Köyü Muhtarlık Binası, Kangal/Sivas Toplantı Tarihi : 04.12.2025 Toplantı Saati : 13:30 Proje Sahibi : Enerji İşleri Genel Müdürlüğü Tel : (0312) 546 46 46 Faks : (0312) 222 57 60 ÇED Raporunu Hazırlayan Kuruluş : Aktel Çevre Danışmanlık Müşavirlik ve Mühendislik Ltd. Şti. Tel : (0312) 472 25 08 Faks : (0312) 472 25 08 Resmi ilanlar www.ilan.gov.tr'de Basın:2338742	DUYURU ÇED Sürecinde Halkın Bilgilendirilmesi ve Sürece Katılımı Toplantısı Enerji İşleri Genel Müdürlüğü tarafından Sivas İli, Kangal İlçesi, Mancılık, Havuz, Beyyurdu, Akpınar Mahalleleri sınırları içerisinde "Sivas Yağdonduran Güneş Enerji Santrali (2.000 Ha, 1000 MWm / 1000 MWe)" yapılması planlanmaktadır. Söz konusu proje için Çevresel Etki Değerlendirmesi (ÇED) Yönetmeliğinin 9. Maddesi gereğince aşağıda belirtilen tarih ve saatte faaliyetle ilgili halkı bilgilendirmek, görüş ve önerilerini almak için "Halkın Bilgilendirilmesi ve Sürece Katılımı Toplantısı" yapılacaktır. Halkımıza saygı ile duyurulur. Toplantı Yeri : Havuz Köyü Muhtarlığı Toplantı Yerinin Adresi : Havuz Köyü Muhtarlık Binası, Kangal/Sivas Toplantı Tarihi : 04.12.2025 Toplantı Saati : 13:30 Proje Sahibi : Enerji İşleri Genel Müdürlüğü Tel : (0312) 546 46 46 Faks : (0312) 222 57 60 ÇED Raporunu Hazırlayan Kuruluş : Aktel Çevre Danışmanlık Müşavirlik ve Mühendislik Ltd. Şti. Tel : (0312) 472 25 08 Faks : (0312) 472 25 08 Resmi ilanlar www.ilan.gov.tr'de BASIN: ILN02338742

Figure 23: PPM Announcement on National and Local Newspapers

Participants of the meeting included:

- MoEUCC – General Directorate of EIA, Permitting and Inspection,
- Sivas PDoEUCC,
- Aktel Environmental Consultancy, Advisory and Engineering Ltd. Co.,
- Local community members from surrounding villages and the village mukhtars.

Within the scope of the Project's EIA process, official opinions were obtained from relevant ministries and affiliated directorates, including the Ministry of Environment, Urbanisation and Climate Change, the Ministry of Agriculture and Forestry, the Ministry of Culture and Tourism, and institutions affiliated with the Governorship (such as the Provincial Directorate of Agriculture and Forestry, PDoEUCC, Sivas Metropolitan Municipality, Kangal Municipality, Provincial Directorate of Disaster and Emergency Management, and Provincial Directorate of Health).

Meeting minutes indicated that the public has a generally positive attitude towards the Project; however, particular sensitivity was expressed regarding local employment opportunities and the potential impacts on

livestock-based activities, with participants emphasising the importance of ensuring that these activities are not adversely affected.

8.4.4.1.2 Consultations for ESIA Scoping Phase

Preliminary consultations were carried out as part of the ESIA scoping phase during site visits and meetings conducted on 16-17 April 2026 in Sivas Province. The purpose of these early engagements was to introduce the Project, understand baseline socio-economic conditions, identify key stakeholder concerns and expectations, and inform the scope and focus of the subsequent ESIA studies.

Institutional consultations were conducted with relevant public authorities in Kangal District and Sivas city centre. These meetings focused on regulatory procedures, land ownership status, pasture use, water resources, cultural heritage considerations, and coordination requirements during Project development. Village-level consultations were carried out directly within the affected settlements, namely Beyyurdu, Havuz, Akpınar and Mancılık villages, through meetings with village mukhtars and local community members. Stakeholders were informed about the Project scope, layout and the ESIA process, while initial views, concerns and expectations were recorded to inform further assessment, mitigation planning and stakeholder engagement activities.

Stakeholders consulted during the preliminary ESIA scoping phase included:

- Village mukhtars and local community members from Beyyurdu, Havuz, Akpınar and Mancılık Villages
- District-level authorities, including:
 - Kangal District Governorate
 - Kangal Municipality
 - Kangal National Real Estate Directorate

Figure 24 presents selected photographs from the consultation activities conducted as part of the ESIA scoping phase. While, the Scoping Leaflet distributed during the consultation activities is presented in APPENDIX C.



Figure 24: Consultation Activities for ESIA Scoping Phase

Key issues raised during the consultations mainly related to potential adverse impacts on pasture use and livestock-based livelihoods, access to grazing areas, water resources, and expectations regarding Project

benefits. In Havuz, Mancılık and Akpınar Villages, livestock farming was identified as a key livelihood, with stakeholders highlighting the importance of maintaining pasture access and expressing interest in employment and local procurement opportunities.

Institutional stakeholders underlined the importance of early coordination with relevant authorities in relation to land use planning and management. Also, they highlighted the Project's anticipated contribution to the national economy as a strategically important renewable energy investment.

These issues will be considered in the identification of priority impact areas, including livelihood impacts and the need for continued, structured stakeholder engagement throughout the ESIA process.

8.4.4.2 Future Stakeholder Engagement and Consultation Activities

8.4.4.2.1 Information Disclosure

Future stakeholder engagement activities for general information disclosure will focus on enhancing awareness and transparency about the Project. These activities will include public meetings, informational materials, and updates through various communication channels such as the Project website.

Project E&S documents, non-technical summary ("NTS") and the SEP will be disclosed at the Project website and will be available in Turkish and English. The hard copies of the NTS and the SEP will be provided to the mukhtars of the affected settlements.

The full ESIA package will also be publicly disclosed, and a Public Information and Participation Meeting will be organized to present the ESIA findings, gather feedback from stakeholders, and ensure meaningful participation during the disclosure period.

Further announcement regarding the Project updates and awareness, following tools will be used:

- Project website,
- Notice boards at the affected settlements, and
- Leaflets and banners.

Non-governmental organisations, associations, and other relevant bodies will be formally informed about the information disclosure process, and direct access to Project documentation will be provided via dedicated website links. When requested, hard copies of the disclosure documents will be sent via post mail.

8.4.4.2.2 Meaningful Consultation

The preliminary SEP has been developed in line with IFC PS1, EBRD ESR10 and ADB ESS10 to ensure meaningful consultation with stakeholders throughout the different phases of the Project. The preliminary SEP aims to provide timely and accessible information on Project activities, address stakeholder concerns through an effective grievance mechanism, and incorporate stakeholder views into Project decision-making processes. The following consultation strategies will be implemented from the early stages of the Project and maintained throughout construction and operation:

- A Community Liaison Officer ("CLO") will be appointed to act as the main interface between the Project and local communities, responsible for coordinating consultation activities, facilitating information disclosure, and managing stakeholder feedback and grievances.
- Targeted and inclusive consultations will be undertaken with identified vulnerable groups, particularly those potentially affected by land use and pasture-related impacts, to ensure their effective participation in information disclosure, engagement activities, and grievance management processes.

- All engagement and disclosure tools will clearly provide the name and contact details of the CLO, information on the Project Grievance Mechanism (“GM”), and instructions on how stakeholders can raise concerns or provide feedback, ensuring transparency and accessibility throughout the Project lifecycle.

8.4.4.2.3 Engagement for Land Acquisition

Stakeholder engagement activities in relation to land acquisition and expropriation process will be made accordingly to the national legislation, IFC PS1 and PS5, EBRD ESR5 and ESR10, and ADB ESS5.

Within the scope of the preliminary stakeholder engagements, all targeted stakeholders potentially affected by land acquisition, especially users of the project pastures, will be engaged through a combination of socio-economic household surveys, in-depth interviews, focus group discussions, and targeted consultations, as further detailed in Section 8.4.6. The summary of engagement records will be reflected as the Project progresses.

There are two private parcels within the Project Area that will be subject to expropriation; therefore, the landowners of these parcels will be included in the early engagement process.

8.4.5 Grievance Mechanism

The EBRD defines a grievance as a concern or complaint raised by individuals or groups who are affected by a project’s environmental and social performance. In line with EBRD ESR10: Stakeholder Engagement, clients are required to establish and maintain a grievance mechanism to receive, assess and facilitate the resolution of stakeholder concerns and grievances related to project activities in a timely, transparent and culturally appropriate manner. The grievance mechanism should be proportionate to the project’s environmental and social risks and potential adverse impacts and should be accessible to all affected stakeholders at no cost and without fear of retaliation. The mechanism must not impede access to judicial or administrative remedies and should ensure confidentiality and protection of personal data where appropriate. The grievance process should be disclosed to affected communities as part of stakeholder engagement activities, and its implementation should be monitored and reported publicly, while respecting the privacy of complainants.

Hence, a Grievance Mechanism has been developed as part of the preliminary SEP in line with EBRD requirements and guidance to provide a structured and reliable framework for managing all stakeholder grievances arising from Project activities. In accordance with the EBRD Guidance Note on Performance Requirement 10: Information Disclosure and Stakeholder Engagement (EBRD, 2023), the Project will implement this Grievance Mechanism that is accessible, transparent and proportionate to the Project’s environmental and social risks. The grievance mechanism is the key tool that allows stakeholders to provide feedback, concerns and complaints related to the Project. The grievance mechanism aims to demonstrate responsiveness to stakeholder needs and facilitate a trustworthy and constructive relationship with the stakeholders by developing appropriate mitigation strategies. The objectives of the GM are to:

- Provide affected people with culturally appropriate ways and means of stating their grievances during the Project (from site preparation to decommissioning phase),
- Ensure that grievances are treated confidentially and are not shared outside the process,
- Establish transparent and mutually respectful relations with communities,
- Ensure that corrective actions are identified and taken,
- Verify that affected people are satisfied with the corrective actions taken, and

- Avoid the need for judicial actions; the grievance mechanism, however, does not prevent stakeholders from accessing the judiciary system.

Grievances can be submitted by internal and external stakeholders through the following methods:

- Grievance boxes accessible at the settlements and the Project site,
- Submitting a grievance in person to mukhtars and/or grievance form to be submitted via mukhtar,
- By mail (to the postal address of ACWA),
- Via e-mail to ACWA,
- Submitting a grievance to the CLO by telephone,
- Submitting a grievance in person to the CLO.

The requests will be logged in a Request & Grievance Log. The request will be logged as a worker or community request, and the grievances will be logged in a grievance registration system by ACWA in categories. The grievances can be categorized as:

- Environmental issues (e.g., noise, dust, waste management) related complaints,
- Labour or occupational health and safety-related complaints,
- Complaints or reports regarding damages and losses caused by construction activities,
- Reports of discriminatory treatment based on gender, age, disability, religion, language, race, sect, ethnicity, social status, political views, health condition, marital status, etc.,
- Grievances related to Gender-Based Violence and Harassment ("GBVH"), sexual abuse, harassment, exploitation, and assault,
- Complaints or concerns related to land acquisition, including disputes or grievances regarding compensation, land rights, or relocation.

The grievance management process will follow these key steps to ensure timely and effective resolution:

- 1) **Grievance Submission** – Stakeholders may submit grievances through various accessible channels (e.g., in person, via phone, email, or grievance boxes).
- 2) **Registration and Logging** – Each grievance will be recorded in the grievance register, assigned a reference number, and categorized for tracking. Grievances will be recorded by the trained staff and feedback is given to the grievance holder that the grievance has been received and recorded.
- 3) **Review and Assessment** – The grievance will be evaluated to determine its eligibility, seriousness, and urgency. Trained staff who follow the grievance will appoint the unit that resolve the grievance, depending on the subject of the grievance.
- 4) **Investigation and Response** – A fair and transparent investigation will be conducted, followed by a proposed resolution or corrective action. The assigned unit records the whole process, inspects the grievance and develops a solution. All developments related to the process are recorded in the grievance log.
- 5) **Resolution Process** – Grievances will be resolved within 30 calendar days from the date of acknowledgement. If additional time is required due to the complexity of the issue, the complainant will be informed of the reasons for the delay and the revised expected resolution timeline. The solution method,

which is consulted with the grievance holder and mutually agreed upon, is applied and the results are recorded in the system. The resolution outcome will be documented, communicated to the complainant, and monitored to ensure effective implementation.

- 6) **Feedback and Closure** –The solution method, which is consulted with the grievance holder and mutually agreed upon, is applied and the results are recorded in the system. The grievance will be formally closed and documented.
- 7) **Follow-up (if needed)** – In cases requiring corrective action, follow-up will be conducted to verify implementation and effectiveness.

The Project grievance mechanism will be designed in accordance with applicable lender requirements and relevant international good practice guidance to ensure that it is accessible, inclusive, transparent and appropriate to the Project context.

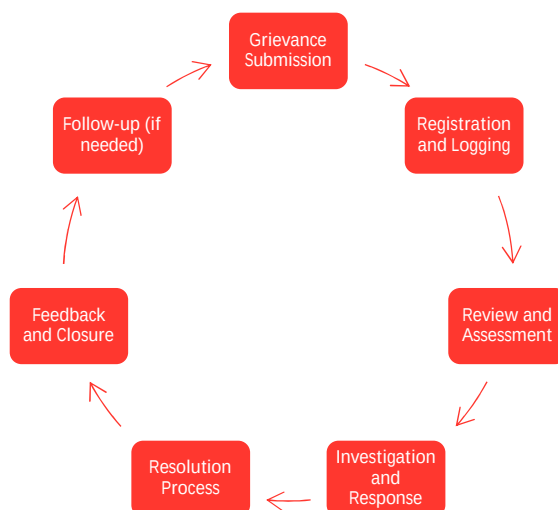


Figure 25: Grievance Management Scheme

8.4.5.1 Governmental Grievance Mechanism – All Stakeholders

The public can raise any issues, complaints, and requests through the Presidential Communication Centre (“CIMER”). This centre is an active 24-hour online national system developed by the Directorate of Communications to keep communication channels between the public and state open. The public may raise issues, complaints, and requests at anytime and anywhere. Issues, complaints, and requests can be both received and responded to through this national online system.

The CIMER system enables stakeholders to communicate directly with ACWA during the Project lifespan. Still, a separate grievance mechanism system will be established for the Project in which the stakeholders can receive their responses locally and communicate their complaints. This Project-level grievance system will be established within ACWA, implemented, and followed during the Project lifespan.

Affected communities will be informed of their right to escalate grievances through the Project grievance mechanism and, if the Project GM response is unsatisfactory, through alternative mechanisms such as CIMER.

8.4.5.2 Internal Grievance Mechanism – for Workers

ACWA’s internal grievance mechanism will be implemented for the use of all Project workers, including both ACWA and contractor employees. This mechanism enables workers to raise concerns about any condition that allegedly harms them, ensuring fair and respectful resolution.

A gender-sensitive approach will be integrated into the mechanism to effectively address cases of GBVH throughout the Project lifecycle. All GBVH-related grievances will be handled by nominated, trained staff who are sensitive to GBVH issues. The mechanism will support affected individuals and allow anonymous submissions. Hence, the grievance mechanism ensures that all stakeholders, including vulnerable groups and survivors of GBVH, have a structured and formal means to report complaints and receive prompt, fair, and effective responses.

Workers will have access to multiple grievance channels such as:

- Grievance Boxes
- Grievance Forms
- In-Person Submissions
- Email or Phone Submissions
- Company Compliance Online Portal and/or Hotline ([ACWA | Compliance line](#))

8.4.5.3 External Grievance Mechanism – for communities

ACWA will implement an external GM as part of the Project's management system to respond to any concerns raised by affected communities and stakeholders. The primary objective is to provide transparent and accessible channels for stakeholders to submit concerns, receive information, and obtain timely and fair resolutions.

Grievances can be submitted through various channels, including:

- **Grievance Forms:** Available on the Project website, at the construction site, in mukhtar offices, and at key Project facilities.
- **Mukhtars:** The mukhtars of affected settlements can collect and forward grievances to the Project CLO.
- **CLO In Person:** The CLO will be available on-site to receive and address concerns.
- **CLO Telephone Line:** A dedicated phone line will be set up for verbal submissions. Meanwhile, telephone line of the Project Representative Levent Demir, (+90 532 715 85 87) can also be used for verbal submissions.
- **Project Email Address:** The official email address (info@acwaguc.com.tr) disclosed on ACWA's web site (<https://acwaguc.com.tr/>) will be used for online submissions. While e-mail address of the Project Representative Levent Demir (Idemir@acwapower.com) can also be used for online submissions.

These channels will ensure that community members have various accessible options for raising their concerns and seeking resolutions. For **anonymous complaints**, the results and responses will be shared through general channels such as public information boards at the mukhtar's office or site entrance areas, without disclosing any sensitive details.

All received grievances will be logged in a grievance log by ACWA. Designated and trained staff will maintain a grievance log, tracking submission details, follow-up actions, and outcomes.

Grievance management process:

- All grievances will be acknowledged within **7 days** of receipt.
- All grievances will be resolved, and a formal response will be provided within **30 days**.

- **Land-related grievances will be prioritized and resolved within 7 days** to ensure the timely continuation of land access and Project activities.

ACWA will adopt a zero-tolerance approach to all forms of GBVH in relation to Project activities. GBVH-related grievances may be submitted through the Project's grievance mechanism using any of the channels described above, including anonymously. Such grievances will be handled in a confidential, survivor-centred and sensitive manner, with restricted access to information and without fear of retaliation. GBVH cases will be prioritised, monitored separately from other grievances, and managed by trained staff in accordance with applicable laws and international good practice.

The grievance mechanism will be widely announced to the public through stakeholder engagement activities. Tailored engagement will be organized to target women and vulnerable groups to share Project information as well as information on Project GM.

8.4.5.4 Receiving and Assessment of Anonymous Grievances

If external and internal stakeholders have difficulties in providing their contact information or/and identification; grievances submitted by stakeholders will be evaluated and recorded as anonymous complaints or anonymous suggestions.

Stakeholders can convey all their grievances, requests or comments, without specifying their names, to the grievance boxes placed at specific points for external stakeholders or via ACWA phone number in its website.

Grievances are received anonymously and assessed by applying the steps defined in the workflow. To protect confidentiality, cameras are not installed in areas where grievances are submitted. This prevents the disclosure of grievance holders' identities and ensures their anonymity. Within the scope of the complaint, it will be evaluated through investigation/examination processes, and each stage will be recorded in the grievance log. Third parties will not be informed about grievances that need to be kept confidential.

When the grievance is concluded, although there will be no formal feedback on the solution to be implemented, if it is an issue that needs to be informed by the public and if deemed necessary, it can be announced to the stakeholders through common boards/public and general communication tools.

8.4.5.5 Independent Lender Accountability Mechanism

The EBRD's Independent Project Accountability Mechanism ("IPAM") is an independent and lender-level mechanism established to address social, environmental and public disclosure concerns related to EBRD-financed projects. IPAM enables Project-Affected Persons and civil society organisations to raise complaints regarding actual or potential project-related impacts and assesses whether the EBRD has complied with its ESP and the project-specific provisions of its Access to Information Policy. Where non-compliance is identified, IPAM facilitates the resolution of concerns and supports actions to remedy existing issues and prevent future non-compliance.

Pursuant to the cooperation agreement between the AIIB and the EBRD, IPAM is designated as the sole accountability mechanism for reviewing environmental and social complaints related to the Project.

In addition to the Project-level grievance mechanism, all stakeholders, including affected persons, local communities, and civil society organisations who believe they have been, or may be, adversely affected by the Project may submit a grievance directly to the IPAM. Access to IPAM is voluntary and does not preclude the use of the Project grievance mechanism or other available remedies, and stakeholders may approach IPAM if they consider that their concerns have not been adequately addressed at the Project level, or where they wish to raise concerns related to the EBRD's compliance with its ESP and Access to Information Policy.

In addition, stakeholders may access the ADB Accountability Mechanism, which provides an independent forum through which individuals and communities who believe they have been adversely affected by an ADB-financed project may seek problem-solving and/or compliance review. The Accountability Mechanism comprises the Office of the Special Project Facilitator (OSPF), which supports the resolution of concerns through a problem-solving function, and the Compliance Review Panel (CRP), which reviews allegations of non-compliance by ADB with its operational policies and procedures. In accordance with ADB ESS10 requirements, information on the ADB Accountability Mechanism, including the roles of the OSPF and CRP and the process for submitting concerns, will be disclosed to Project stakeholders through the Stakeholder Engagement Plan and other Project disclosure materials.

8.4.5.6 Interface Management between Employer, EPC Contractor and Subcontractors

Given the involvement of multiple parties during the Project lifecycle, including ACWA (Employer), EPC Contractor(s), and subcontractors, a clear interface management structure will be established for grievance handling.

ACWA will retain overall responsibility for the implementation, management, and oversight of the Project-level Grievance Mechanism, which will serve as the central and unified system for all Project-related grievances. The Project GM will be accessible to all stakeholders, including EPC contractor and subcontractor personnel, who may directly utilize this mechanism.

EPC contractors and subcontractors will not be required to establish separate grievance mechanisms, provided that the Project GM is effectively accessible to their workforce. However, where contractors maintain internal systems, these will be aligned with the Project GM, and all grievances will be reported to ACWA and recorded in the central grievance database.

All grievances, regardless of the submitting party or channel, will be captured and managed within a centralized grievance database under ACWA's control to ensure consistent tracking, transparency, and accountability.

Grievances related to contractor or subcontractor activities will be assigned to the relevant party for investigation and resolution, under the supervision of ACWA. Clear roles and responsibilities will be defined to ensure there are no gaps or overlaps in grievance handling.

ACWA will monitor and oversee grievance management performance of EPC contractors and subcontractors as part of its environmental and social management system to ensure compliance with Project requirements and lender standards.

8.4.6 Land Acquisition and Livelihood Restoration

Based on the information currently available, no physical displacement of households or businesses is anticipated as a result of the Project. However, the Project may result in economic displacement where Project activities affect access to land, natural resources, assets, or livelihood sources.

The ESIA will assess the nature and extent of land acquisition and economic displacement impacts associated with the Project and its associated facilities, where relevant. The assessment will identify affected persons and communities, affected assets, land users, and resource users, and will evaluate the significance of potential impacts on livelihoods and living standards. Particular consideration will be given to vulnerable and disadvantaged groups that may be disproportionately affected by Project-related impacts.

Where economic displacement is identified, livelihood restoration measures will be developed in accordance with the requirements of IFC PS 5, EBRD ESR 5, and ADB ESS 4 on Land Acquisition and Involuntary Resettlement.

A LRP, where required, will be prepared during the ESIA process to support PAPs whose livelihoods may be adversely affected by the Project. The LRP will distinguish between compensation measures for affected land, assets and income sources, and livelihood restoration measures aimed at assisting affected persons in restoring, and where feasible improving, their livelihoods and living standards.

The primary objective of the LRP will be to ensure that affected persons are able to restore their income-earning capacity and achieve sustainable livelihoods following Project implementation. The LRP will establish eligibility criteria and entitlement measures and may include livelihood restoration assistance, skills development and training, support for alternative income-generating activities, access to employment opportunities, financial support mechanisms, and other targeted interventions appropriate to the Project context.

This approach will seek to ensure that affected persons are not disadvantaged by Project-related land acquisition or economic displacement and are provided with appropriate support to restore, and where feasible improve, their livelihoods and standards of living.

8.4.6.1 Desk Review and Secondary Data

SRM will consolidate and critically review: the Red Flag Assessment (REV-2), the Sivas YEKA declaration (Official Gazette No. 32248, 14 July 2023) and the national EIA Reports and permit files for both sites; the Pasture Law (No. 4342) and its regulations; the Regulation on the Conservation, Use and Planning of Agricultural Lands; land registry and cadastre records; TÜİK demographic and livestock datasets at village / district level.

8.4.6.2 LRP Module Embedded in the SIA Household Survey

A dedicated LRP module will be added to the SIA household questionnaire to ensure a statistically robust, geo-referenced, and reproducible evidence base. Rather than running two parallel surveys, this integrated approach reduces community fatigue and allows direct triangulation between general socio-economic indicators and livelihood dependency on Project-Area resources.

Sampling frame and size

- the Sivas Site: the sampling frame will cover all households in the three closest villages (Beyyurdu, Akpınar, Mancılık) and Havuz, supplemented by purposive sampling of any herders identified during transect walks;
- a minimum 95% confidence level / $\pm 5\%$ margin of error will be targeted for each site; where total population is small (e.g., the Atatürk Locality with ~30 resident households), a census approach will be used;
- oversampling of livestock-producing households and any identified vulnerable groups (ethnic minorities, female-headed households, elderly herders) will be applied.

LRP module content

- household composition, vulnerability indicators and income sources (disaggregated by gender and age);
- livestock inventory by species, age class and seasonality; shepherding and labour arrangements; feed and water sources; veterinary access;
- land use and tenure (titled, pasture allocation, informal, rented), including plots within and outside the Project Area;
- beekeeping: number of hives, seasonal movement, floral sources and foraging radius, honey and hive-product yields, and market channels;
- use of the Büyükgöl Pond and other water resources for livestock, irrigation and domestic use;

- perceptions of the Project, preferred restoration measures, and willingness to participate in managed-grazing or fodder-station arrangements;
- employment structure within livelihood activities, identifying both household members and external workers (e.g., shepherds, seasonal labour), including their roles, income dependency, and level of reliance on Project-Area resource.

Quality assurance

- The questionnaire will be piloted in two households per site before full roll-out. Double-entry audit on 10% of records and weekly field debriefs will be used to correct enumerator drift. All data will be anonymised and held in compliance with KVKK and EBRD data-protection expectations.

8.4.6.3 In-Depth Interviews with Livestock Producers and Stakeholders

In-depth, semi-structured interviews (IDIs) will complement the survey by providing the qualitative depth necessary to inform the design of appropriate livelihood restoration measures. The interviews will be conducted by a specialist veterinarian and a rural development expert, in addition to social specialists, to assess existing herd health conditions, livestock production practices and behavioural patterns, beekeeping expertise, and other livelihood-related capacities and vulnerabilities.

Respondent group	Sivas – indicative N
Village mukhtars and elected representatives	4
Large and medium-scale livestock producers (>200 sheep)	6
Small-scale livestock producers and shepherds employed by larger owners	5
Beekeepers	3
Seasonal / subsistence farmers growing fodder	3
Women producers and female-headed households	4
Local institutional stakeholders (Provincial Directorate of MoAF, Pasture Commission, District Governorate, local cooperatives, unions, and university)	5

A common thematic guide will cover livelihood history, herd economics, dependency on the Project Area, adaptation capacity, and preferred livelihood restoration options.

8.4.6.4 Focus Group Discussions on Livestock

FGDs will be used to validate survey findings, elicit shared norms, test preferred restoration options, and surface gender-specific or sub-group perspectives that IDIs may under-represent. A minimum of four FGDs per site is proposed:

- livestock producers (separate male and female groups), focused on herd management, seasonal grazing, and the trade-offs between continued managed grazing, fodder stations and alternative lands;
- women: a separate female FGD convened with female facilitators to capture gender-differentiated impacts of the planned project;
- beekeepers – focused on apiary locations, pollinator flora on the plateau, seasonal movement of hives, and acceptance of relocation / compensation options;

- village leadership and youth – focused on intergenerational livelihood change, employment expectations from the Project, and out-migration trends (e.g., the reported decline of the Atatürk Locality population).

8.4.7 Assessment of Vulnerable Groups

Vulnerable groups include individuals or households who may be disproportionately affected by Project impacts or who may have limited ability to access Project benefits. Vulnerability may be linked to gender, age, disability, ethnic or cultural identity, poverty, or reliance on natural resources.

According to ADB ESF, disadvantaged or vulnerable individuals or groups are those who, by virtue of, for example, their age, gender, ethnicity, religion, disability, social, civic or health status or information, sexual orientation, gender identity, economic disadvantages or indigenous status, and/or dependence on unique natural resources, may be more likely to be at risk of being adversely affected by project impacts, and/or more limited than others in their ability to take advantage of a project's benefits, and/or excluded from/unable to participate fully in consultation processes and benefit sharing in a project.

Vulnerable groups within the Project Impact Area are identified in the preliminary SEP through:

- Secondary data for district and provincial level of vulnerability, including service provider institutions for vulnerable groups,
- Household surveys,
- Community-level consultations,
- Observations during fieldwork.

The findings related to vulnerable groups will be detailed in the Project's ESIA Report and will guide the development of tailored engagement and mitigation strategies.

The identification of vulnerable groups will be an ongoing process; therefore, the Project CLO will be responsible of identifying and continuing to engage with vulnerable groups throughout the Project's lifespan.

From the early phases of the Project, special consideration and assistance will be provided to people identified as vulnerable to ensure inclusivity on decision making, grievance mechanism and consultation. It will be ensured that targeted consultation is established. All Project related information will be provided to vulnerable groups in a timely and culturally appropriate manner.

The potential negative impacts on vulnerable groups due to the Project can be minimized through:

- Assisting vulnerable groups with the procedures required to apply for legal remedies,
- Providing guidance and support to ensure timely and effective access to compensation,
- Facilitating access to educational opportunities and professional development programs,
- Supporting access to essential public services such as water, electricity, and sanitation,
- Implementing a structured stakeholder engagement approach designed specifically for vulnerable groups, including:
 - regular and inclusive consultations,
 - accessible communication channels tailored to different vulnerability categories,
 - systematic information disclosure,
 - and a functional grievance mechanism that enables timely feedback and response.

Additional support such as offering travel support especially for accessing healthcare and education services when needed and supporting the individuals who do not speak the local language or have literacy challenges in understanding official documents or communication processes will be considered and implemented where applicable.

8.4.8 Gender Aspects

Potential impacts of the Project on GBVH and discrimination will be evaluated for local settlements, PAPs, Project workers, and subcontractors. Discrimination is a risk that requires ongoing monitoring and can stem from various factors. Key areas of focus for the gender assessment will include;

- Potential impacts of the influx of the construction and operation workers on gender discrimination and GBVH;
- Non-discrimination in the workplace;
- Gender equality;
- Access to ecosystem services;
- Access to public services;
- Access to grievance mechanism;
- Access to compensation and community development projects;
- Development of the stakeholder consultation procedure and tools to ensure meaningful participation of women in all processes of the Project; and
- Planning employment opportunities and Project service procurement opportunities to support women's employment and ensure equality.

8.4.9 Cultural Heritage

As part of the Project, baseline data collection and impact assessment studies for tangible and intangible cultural heritage are being conducted by REGIO Cultural Heritage Management Consultancy ("REGIO") in accordance with the EBRD ESR 8 and IFC PS 8. Accordingly, a field study has been conducted within the designated study area (Figure 26) on April 7th – 10th, 2026.

The aim of these studies is to identify the archaeological, cultural, religious, spiritual, and traditional values of the site, and to minimize the Project's impact on these values.

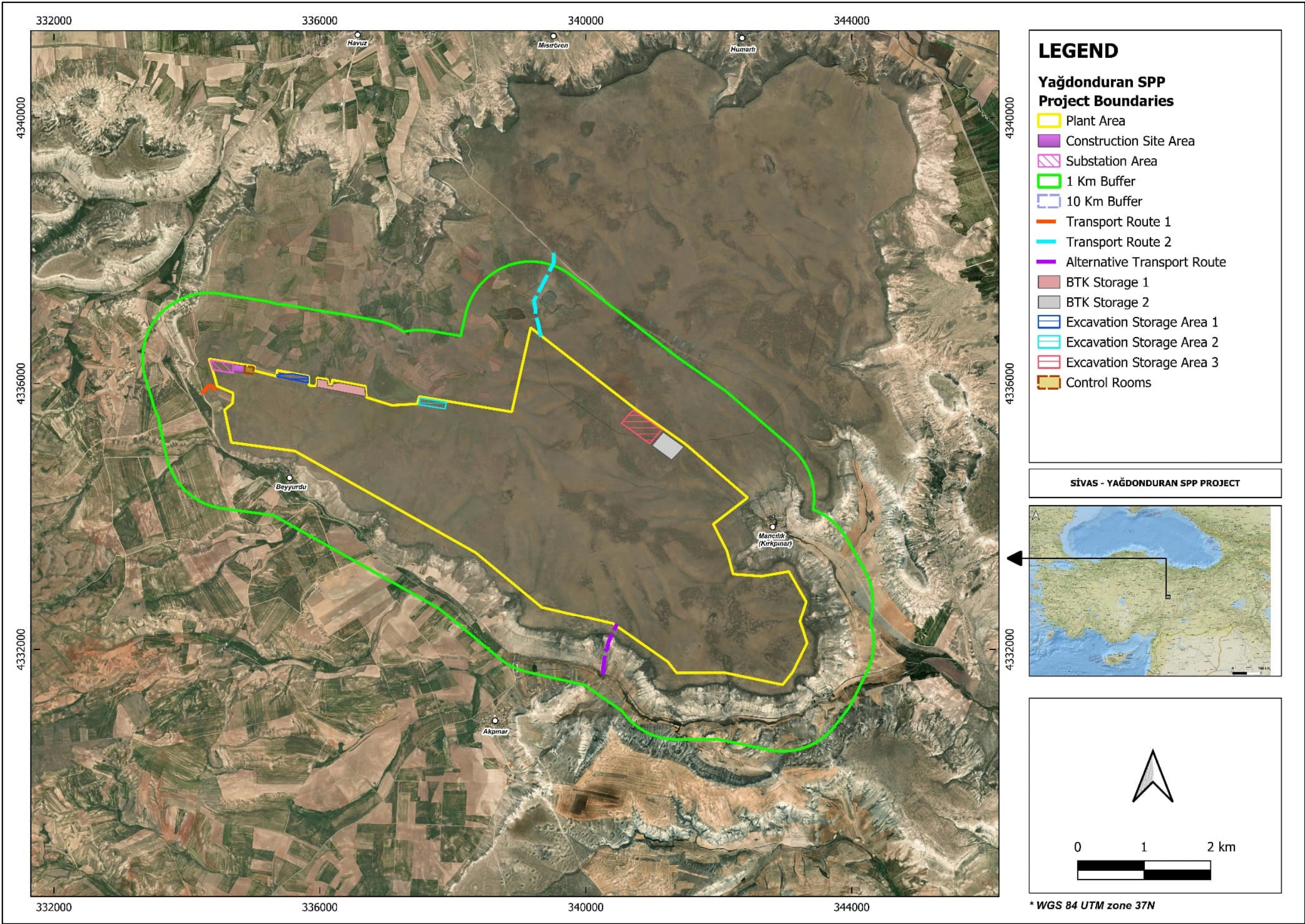


Figure 26: Tangible and Intangible Cultural Heritage Study Area

8.4.9.1 National Standards for Cultural Heritage

National legislation in regard with cultural heritage applicable to the Project are listed below in Table 31.

Table 31: National Regulations Related to The Project

Legislation	Official Gazette Date	Official Gazette No	Relation to the Project
Law on Conservation of Cultural and Natural Properties (Law No. 2863)	23.07.1983	18113	Both Law No. 2863 and Law No. 5448 have been enacted with the primary objective of safeguarding Tangible and Intangible Cultural Heritage and ensuring its transmission to future generations. These legal instruments establish the regulatory framework for the identification, documentation, classification, and preservation of cultural heritage assets. In accordance with this framework, a cultural heritage-sensitive management approach will be developed and adopted for the tangible or intangible heritage assets that are registered and/or encountered or discovered as a chance find during the further phases of the Project. The Cultural Heritage Management Plan ("CHMP") and the Chance Find Procedure ("CFP") will be prepared in line with of these legislations. These documents, to be developed as part of the cultural heritage impact assessment, will be implemented effectively across all stages of the Project lifecycle.
Law on Regarding the Approval of the Convention of Safeguarding of Intangible Cultural Heritage (Law No. 5448)	21.01.2006	26056	

8.4.9.2 International Standards for Cultural Heritage

International legislation and policy and Lender's standards and guidelines in regard with cultural heritage applicable to the Project are listed below in Table 32.

Table 32: International Requirements and Policy Regarding Cultural Heritage

Policy	Description
IFC Performance Standards on Environmental and Social Sustainability (2012) Cultural Heritage – PS8 ²⁵	■ In the field of Cultural Heritage, IFC PS 8 mentions the necessity of preserving cultural heritage for today and for the future. This PS aims to protect cultural heritage from the negative impacts that may arise from activities at every stage of the project and to ensure equal use of existing cultural heritage. ■ Critical Cultural Heritage is defined as 'one or both of the following types of cultural heritage: ■ The internationally recognised heritage of communities who use, or have used within living memory the cultural heritage for long-standing cultural purposes; or ■ Legally protected cultural heritage areas, including those proposed by host governments for such designation'.

²⁵ IFC Performance Standards on Environmental and Social Sustainability (2012). Please check the following link; obtained on 20.04.2026 from <https://www.ifc.org/content/dam/ifc/doc/2010/2012-ifc-performance-standards-en.pdf>

Policy	Description
	■ Examples of legally protected areas which would be considered as cultural heritage 'include world heritage sites and nationally protected areas' (IFC, 2012a, 3, fn6). ■ Under IFC PS 8 critical cultural heritage should not be removed, significantly altered, or damaged. In exceptional circumstances when impacts on critical cultural heritage are unavoidable, a process of informed consultation and participation of the Affected Communities should be applied as described in IFC PS 1 and which uses a good faith negotiation process that results in a documented outcome. External experts should be retained to assist in the assessment and protection of critical cultural heritage. ■ Archaeological Potential: ■ The study area has a high potential to contain stratigraphically intact archaeological remains. Upper levels of these remains have most probably been damaged due to previous ground disturbance and erosion caused by physical, climatic, and chemical weathering and agricultural activities. ■ It is anticipated that any superficial or buried archaeological sites within the Project is likely to be classed according to IFC criteria as replicable cultural heritage²⁶ (IFC, 2012), and can be mitigated by appropriate archaeological investigation, recording and dissemination. ■ The assessment of the scientific value of any archaeological site may change following intrusive investigation and recording work.
EBRD Environment and Social Requirements 8: Cultural Heritage (2024) – ESR8 ²⁷	■ The EBRD, through ESR 8 (Cultural Heritage), sets out requirements to identify, protect and manage cultural heritage potentially affected by project activities. EBRD recognises both tangible and intangible cultural heritage as an important component of social and economic development and as essential to the continuity of cultural identity, values and practices. ■ ESR 8 requires that projects comply with applicable national legislation and relevant international conventions ratified by the host country, and that potential impacts on cultural heritage are avoided, minimised or mitigated through appropriate assessment, management measures and stakeholder engagement.
ADB Environmental and Social Standard 8:	■ The ADB, under ESS 8 (Cultural Heritage), acknowledges that cultural heritage (encompassing both tangible and intangible elements) represents a

²⁶ The IFC in PS8 (2012) defines “replicable cultural heritage” as tangible forms of cultural heritage that can themselves be moved to another location or that can be replaced by a similar structure or natural features to which the cultural values can be transferred by appropriate measures. Archaeological or historical sites may be considered replicable where the particular eras and cultural values they represent are well represented by other sites and/or structures.

²⁷ EBRD Environmental and Social Policy (2024). Please check the following link; obtained on 23.01.2026 from <https://www.ebrd.com/home/news-and-events/publications/institutional-documents/environmental-and-social-policy-2024.html#>

Policy	Description
Cultural Heritage (2026) - ESS8	significant and irreplaceable resource that contributes to social and economic development, and underpins the identity and continuity of communities. The standard seeks to ensure its protection from potential project-related impacts while supporting its preservation and appropriate use. ESS 8 requires that potential impacts on cultural heritage are identified and evaluated as part of the environmental and social assessment process, and that the mitigation hierarchy is applied to avoid or reduce adverse effects. It also calls for the implementation of suitable management measures, including stakeholder engagement and chance find procedures, as well as promoting equitable sharing of benefits arising from the use of cultural heritage.

8.4.9.3 International Conventions

Türkiye has ratified the following key international conventions regarding the cultural heritage, which are applicable to the Project (Table 33):

Table 33: International Conventions Regarding Cultural Heritage

International Conventions	Date
United Nations Educational, Scientific, and Cultural Organisation ("UNESCO"), Convention on the Protection and Promotion of the Diversity of Cultural Expressions, Paris, 20 October 2005	2 November 2017
UNESCO, Convention for the Safeguarding of the Intangible Cultural Heritage, Paris, 17 October 2003	27 March 2006
UNESCO, Convention on the Protection of World Cultural and Natural Heritage, Paris, 16 November 1972	16 March 1983
UNESCO, Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, Paris, 14 November 1970	21 April 1981

8.4.9.4 Methodology and Assessment Criteria for Cultural Heritage

The baseline conditions of the tangible and intangible cultural heritage elements within the study area have been characterised based on the findings of the desktop study and field surveys conducted so far.

Four phases are being undertaken in evaluating the present status of the tangible and intangible cultural heritage assets for Project. These phases are as follows:

- Desktop Research Phase
- Field Research Phase
- Impact Assessment Phase
- Reporting Phase

8.4.9.4.1 Desktop Research Phase

A comprehensive review of published literature and open-access sources concerning the archaeological and historical heritage of the study area and its immediate environs was undertaken. This was conducted to evaluate the cultural heritage potential of both the Project footprint and its associated impact areas. Known archaeological

and heritage assets within these zones were identified and documented for the desktop research. The resources utilised during this desktop research are as follows:

- Inventory records of Regional Council for the Conservation of Cultural Property (Sivas)
- Academic publications
- Historic/ topographic and digital maps
- Google Earth Satellite Images
- Previous reports on the cultural heritage studies conducted in the area (published by other parties/academia, studies conducted by the cultural heritage team, etc.)
- UNESCO List World Heritage Sites in the Republic of Türkiye (Including those on the Tentative List).

Besides the academic publications and study reports on intangible cultural heritage, the publicly available databases of the following sources have been reviewed to identify the baseline conditions to set the basis for the identification and assessment of potential impacts, if any:

- Turkish National Commission for UNESCO,
- Provincial Directorates of the Ministry of Culture and Tourism,
- Research Centre for Turkish Folklore ("THBMER"),
- Regional Development Agencies.

For intangible cultural heritage, the following topics about the traditional knowledge and practices of the local community have been studied during desktop study:

- Oral traditions and expressions,
- Traditional food,
- Performing arts,
- Skills to produce traditional handcrafts,
- Traditional clothing,
- Traditional knowledge in health and medicine (for human and animals),
- Traditional agricultural and husbandry practices,
- Traditional production techniques and other practices,
- Cultural places and historical artefacts, etc., used by the locals.

Accordingly, the results of the desktop research phase findings are presented in Table 34 and Figure 27.

Table 34: Recognised National Tangible Cultural Heritage Assets within the Project Buffer Zone and Surrounding Area

No	Name of Heritage Site/ Asset	District	Village	Distance to Project Area (km.)	Period
1	Mancılık Village Church	Kangal	Mancılık	5,47	Byzantine

No	Name of Heritage Site/ Asset	District	Village	Distance to Project Area (km.)	Period
2	Mancılık Bridge			4,76	Ottoman
3	Mancılık Castle			5	Byzantine
4	Boğazören Tumulus			5,48	Roman
5	Boğazören Necropolis			5,44	Roman-Byzantine
6	Boğazören Castle			5,79	Roman-Byzantine
7	Karaseki Archaeological Area (Kırkpınar)			0,03	Roman
8	Kırkpınar Tumuli I-II-III			0,78	Roman
9	Humarlı Castle		Humarlı	4,4	Bronze-Iron-Roman-Byzantine
10	Gavurören			5,23	Bronze-Iron-Roman-Byzantine
11	Halep Bridge Hoyuk			6,69	Bronze-Iron-Roman-Byzantine
12	Balıklıtöhma Settlement		Kocakurt	6,71	Roman-Byzantine
13	Kapiktepe Castle		Kocakurt	1,74	Roman-Byzantine
14	Köroğlu Cave Rock Settlement		Yenihamal	9,27	Roman-Byzantine
15	Beyyurdu Castle		Beyyurdu	0,10	Bronze-Iron-Roman-Byzantine
16	Üzerliktepe Settlement		Akpınar	0,64	Bronze-Iron-Roman-Byzantine
17	Mehmedinağılı Hoyuk			0,48	Bronze-Iron-Roman-Byzantine
18	Astur Castle			0	Bronze-Iron-

No	Name of Heritage Site/ Asset	District	Village	Distance to Project Area (km.)	Period
					Roman-Byzantine
19	Karga Castle Rock and Slope Settlement 1		Kuşkayası	8	Bronze-Iron-Roman-Byzantine
20	Karga Castle Rock and Slope Settlement 2			8,11	Bronze-Iron-Roman-Byzantine
21	Top Castle- Uzun Castle			8,38	Roman-Byzantine
22	Hüseyin Bey Mansion (Guest Room)			9,15	Ottoman
23	Feridun Karasu House			5,40	Ottoman
24	Hüseyin Akkuş House			5,30	Ottoman
25	Aslantaş Archaeological Area-Necropolis and Hoyuk			1,18	Bronze-Iron-Roman-Byzantine
26	Mağara Necropolis	Gürün	Mağara	9,6	Roman-Byzantine

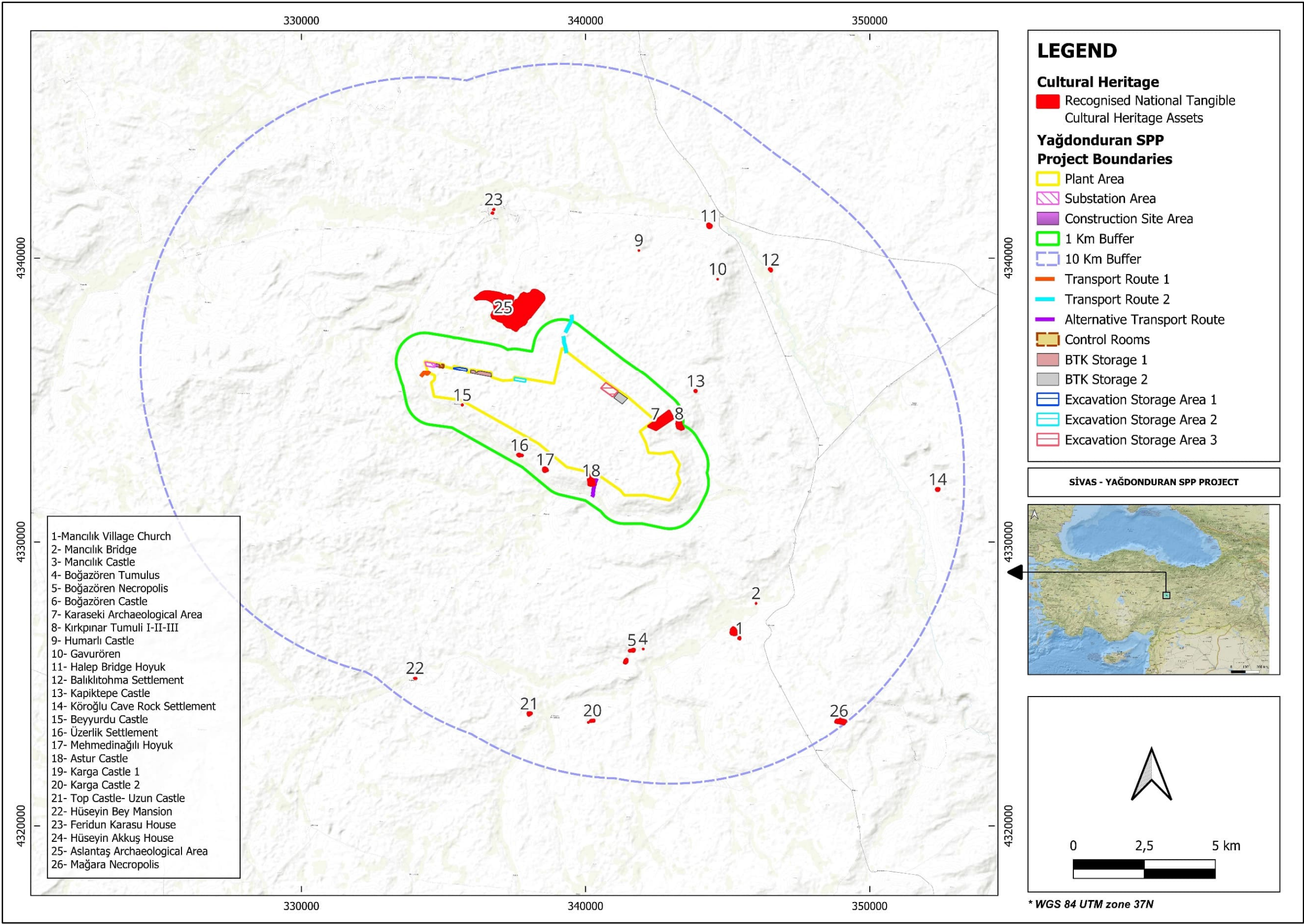


Figure 27: Recognised National Tangible Cultural Heritage Assets within the Project Buffer Zone and Surrounding Area

8.4.9.4.2 Field Research Phase

Field survey was conducted for both tangible and intangible cultural heritage assets on April 7th – 10th, 2026.

Tangible Cultural Heritage

The walk-over survey within the Project area and its' impact areas has been conducted to gather field data on the location and features of the tangible cultural heritage elements. During the archaeological and cultural heritage walk-over surveys, the cultural heritage findings that could be observed on the surface were recorded on field survey forms by taking GPS coordinates (WGS 1984, 6 degree) together with detailed photographs of the findings from various angles to form a Project archive. Based on the walk-over survey findings, daily reports were prepared by the cultural heritage team throughout the entire field survey program.

The instant communication between the members of the field team, who scanned the field surface in parallel, was provided by walkie-talkie devices. During the walk-over survey, all archaeological traces (such as ceramic shards spread on the surface, architectural elements or traces etc.) observed on the surface of the Project were recorded on the Field Surveys Forms (kept in the CHIA database) and relevant findings were incorporated to the Project Archaeological Baseline.

Intangible Cultural Heritage

Field studies for intangible cultural heritage have been carried out using the "qualitative interview technique" with individuals who is knowledgeable about the history and geography of the region, who value those areas, and who know, live, sustain and transfer the intangible cultural elements in those areas. In this research method, face-to-face interviews have been conducted with representatives of the local people and data on intangible cultural heritage elements have been collected.

Accordingly, the results of the field research phase findings are presented in Table 35 and Figure 28.

Table 35: Tangible Cultural Heritage Findings within the Project Study Area

No	Site Name	Province/ District	Villages	Approximate Distance to the Project Area (m)	Registration Status		Location to the Project			Classification of Areas		Period	Site/Asset Descriptions
					Yes	No	Within the Project Area	Outside the Project Area (1 km Buffer Zone)	Within the Other Project Sites (access road, camp, dumpsite, etc.)	Archaeologi cal Site	Other Cultural Heritage Site		
1	Beyyurdu Castle	Sivas/ Kangal	Beyyurdu	100	x			x		x		Bronze- Iron- Roman- Byzantine	The area is a legally protected archaeological site. Ceramic sherds and traces of architectural remains have been observed on the site surface.
2	Mehmedinağılı Hoyuk		Akpınar	480	x			x		x		Bronze- Iron- Roman- Byzantine	The area is a legally protected archaeological site. Ceramic sherds and traces of architectural remains have been observed on the site surface.
3	Beyyurdu Tumulus		Beyyurdu	156		x		x		x		Roman	A tumulus (burial mound) is located within the area. During the walk over survey conducted around the tumulus, Roman period ceramic sherds were encountered. The tumulus and its surroundings have suffered from destruction by the plunderers.
4	Üzerliktepe Tumulus 1		Akpınar	283		x		x		x		Roman	A tumulus (burial mound) is located within the area. During the walk over survey conducted around the tumulus, Roman period ceramic sherds were encountered. The tumulus and its surroundings have suffered from destruction by the plunderers.
5	Üzerliktepe Tumulus 2		Akpınar	211		x		x		x		Roman	A tumulus (burial mound) is located within the area. During the walk over survey conducted around the tumulus, Roman period ceramic sherds were encountered. The tumulus and its surroundings have suffered from destruction by the plunderers.
6	Mehmedinağılı Tumulus 1		Akpınar	376		x		x		x		Roman	A tumulus (burial mound) is located within the area. During

No	Site Name	Province/ District	Villages	Approximate Distance to the Project Area (m)	Registration Status		Location to the Project			Classification of Areas		Period	Site/Asset Descriptions
					Yes	No	Within the Project Area	Outside the Project Area (1 km Buffer Zone)	Within the Other Project Sites (access road, camp, dumpsite, etc.)	Archaeologi cal Site	Other Cultural Heritage Site		
													the walk over survey conducted around the tumulus, Roman period ceramic sherds were encountered. The tumulus and its surroundings have suffered from destruction by the plunderers.
7	Mehmedinağılı Tumulus 2		Akpınar	162		x		x		x		Roman	A tumulus (burial mound) is located within the area. During the walk over survey conducted around the tumulus, Roman period ceramic sherds were encountered. The tumulus and its surroundings have suffered from destruction by the plunderers.
8	Karaseki Tumuli		Mancılık	417		x		x		x		Roman	A tumulus (burial mound) is located within the area. During the walk over survey conducted around the tumulus, Roman period ceramic sherds were encountered. The tumulus and its surroundings have suffered from destruction by the plunderers.
9	Karaseki Slope Settlement		Mancılık	438		x		x		x		Bronze- Iron- Roman- Byzantine	The settlement is situated on a valley slope. Large-scale ashlar blocks belonging to structural remains are observed on the surface of the settlement. This indicates the potential presence of a monumental architectural structure in the area. However, the site has been severely damaged due to interventions by the plunderers. The abundance of pottery sherds from various historical periods found on the surface demonstrates that the settlement underwent long-term occupation.

No	Site Name	Province/ District	Villages	Approximate Distance to the Project Area (m)	Registration Status		Location to the Project			Classification of Areas		Period	Site/Asset Descriptions
					Yes	No	Within the Project Area	Outside the Project Area (1 km Buffer Zone)	Within the Other Project Sites (access road, camp, dumpsite, etc.)	Archaeologi cal Site	Other Cultural Heritage Site		
10	Kırkpınar Tumuli I-II-III		Mancılık	780	x			x		x		Roman	The area is a legally protected archaeological site. Three tumulus (burial mounds) are located within the area.
11	Karaseki Archaeological Area (Kırkpınar)		Mancılık	30	x			x		x		Iron- Roman- Byzantine	The area is a legally protected archaeological site. Ceramic sherds and traces of architectural remains have been observed on the site surface.
12	Üzerliktepe Settlement		Akpınar	640	x			x		x		Bronze- Iron- Roman- Byzantine	The area is a legally protected archaeological site. Ceramic sherds and traces of architectural remains have been observed on the site surface.
13	Astur Castle		Akpınar	0	x			x	x	x		Bronze- Iron- Roman- Byzantine	The area is a legally protected archaeological site. Ceramic sherds and traces of architectural remains have been observed on the site surface.
14	Ören Tumulus		Mancılık	0		x	x			x		Roman	The tumulus is located within the project site. A high concentration of Roman period pottery sherds was encountered during the walk-over survey conducted around the tumulus.
15	Vahit Necropolis Area (4 Tumuli)		Akpınar	95		x		x		x		Roman	Four tumulus (burial mounds) are located in the area. All of the tumuli have been destroyed by the plunderers. As a result of this destruction, rectangular-plan burial chambers are visible.

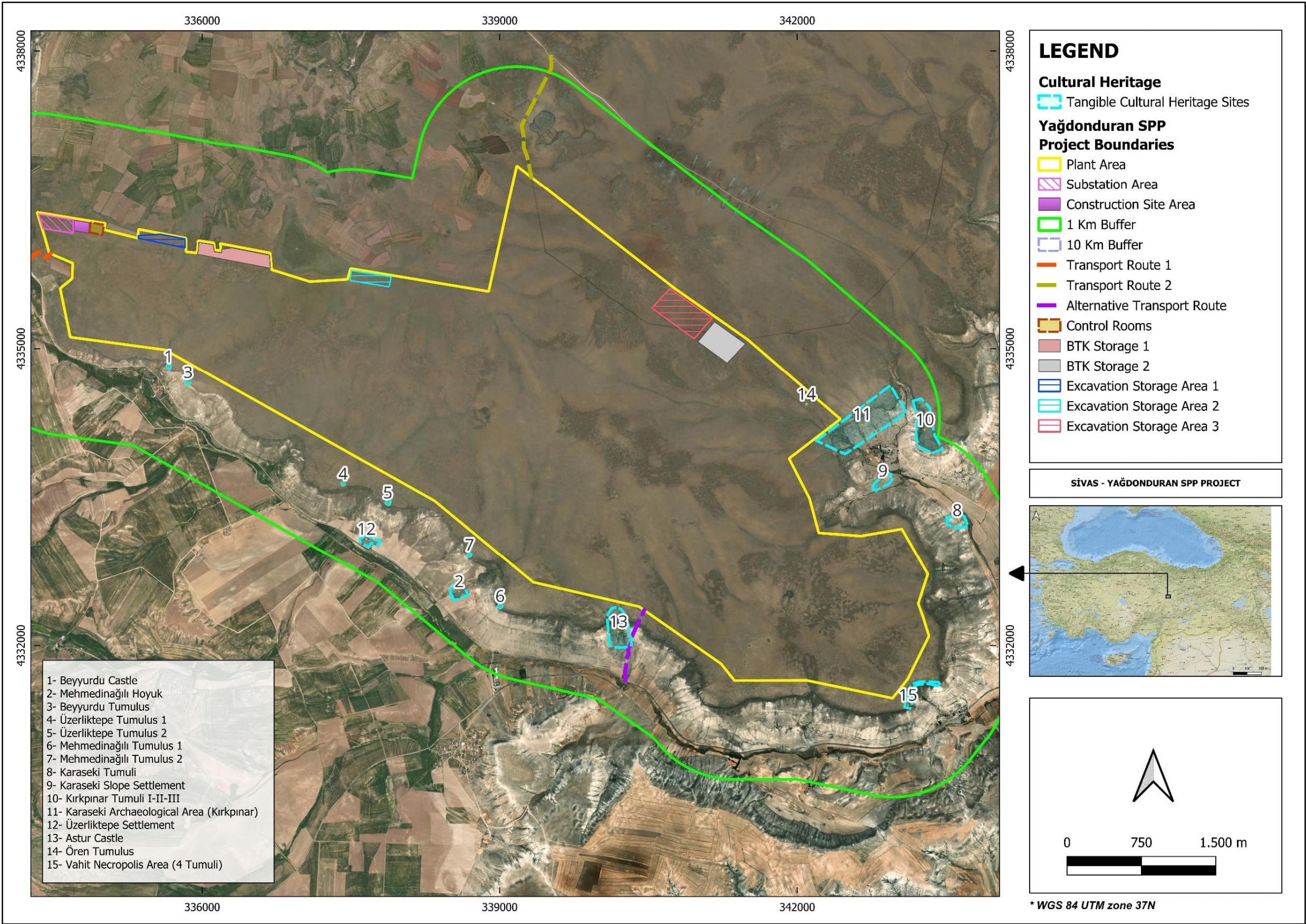


Figure 28: Locations of Tangible Cultural Heritage Findings within the Project Study Area

8.4.9.4.3 Impact Assessment Phase

Impact assessment studies for cultural heritage (tangible and intangible) will be conducted in accordance with the *Guidance and Toolkit for Impact Assessments in a World Heritage Context* (ICOMOS, 2022)²⁸. Within this framework, the heritage significance of assets located within the Project impact area will be established to determine potential impacts. Following the evaluation of heritage significance, the magnitude of the Project's impact will be identified, and an assessment scale will be developed accordingly.

Consequently, a scale will be established defining the magnitude of impact and the significance of effect arising within the Project's scope. The impact assessment will be conducted in accordance with the ICOMOS GTIA (2022) (Table 36).

Table 36: ICOMOS 2022, Impact Assessment Scale

Step 1			Step 2				Step 3	
Definition of the Value of Cultural Assets			Definition Regarding the Magnitude of Impact				Impact of the Change (Significance of Impact)	
							Negative	Positive
OUV ²⁹	National ³⁰	Local ³¹	None ³²	Negligible ³³	Some ³⁴	Large ³⁵	Major/ Moderate/ Minor/ Neutral	

Possible positive or negative impacts will be assessed in detail through desktop research and field studies. The impacts of the Project activities on the cultural heritage elements/assets within the impact area will be analysed in a phased assessment and the results will be listed. In this context, the type and partial dimensions of the possible changes deriving from the Project will be revealed, and a value determination will be carried out through expert evaluation according to the criteria mentioned above. In line with ICOMOS GTIA (2022), specific mitigation measures and recommendations for all impacts that may arise from the Project activities on the heritage sites will be presented in the ESIA Report. Residual impacts that may occur after mitigation measures and recommendations will be identified.

8.4.9.4.4 Reporting Phase

During all studies, all data collected for tangible and intangible cultural assets will be evaluated in different mapping and analysis platforms and the reporting will be completed by considering geographical positioning of the cultural heritage assets and by developing mitigatory actions for protection/salvation of these assets.

²⁸ <https://unesdoc.unesco.org/ark:/48223/pf0000382347>.

²⁹ Cultural assets recognised on an international scale (UNESCO World Heritage Listed sites / Tentative Listed sites etc.).

³⁰ Cultural assets recognised on a national scale (Cultural heritage sites and elements that are protected, registered under national legislation or archaeological sites which are under the official registration process.)

³¹ Cultural assets perceived at local scale (Unregistered cultural heritage assets identified for the first time during fieldwork.)

³² No change in the overall appearance and use of the heritage site/element due to Project activities.

³³ Minor, negligible change in the overall appearance and use of the heritage site/element derived from the Project activities.

³⁴ Moderate change in the overall appearance and use of the heritage site, resulting in a significant change in the character of the heritage site/element derived from the Project activities.

³⁵ Significant change in the overall appearance and use of the heritage site/element, resulting in extensive changes to the heritage site and its surroundings as a result of Project activities, resulting in a major change in the defining values of the heritage site.

8.4.10 Gap Analysis for Social Component

Table 37: Gap Analysis for Social Component

Social	Description
Available Information Typology and Sources	Project EIA Report, 2026 Preliminary SEP ■ The Project Area and the temporary facilities are determined. ■ A field study has been conducted at the Project Area, project components and temporary facilities as part of the EIA to assess cultural heritage impacts. ■ Public participation meeting has been conducted as part of the EIA process. ■ Stakeholder engagement plan (based on local regulations) has been prepared in line with the national requirements within the EIA report. Following that, a preliminary SEP has been developed for the Project in line with the Project Standards.
Requirements	IFC PS1, PS2, PS4, PS5, PS8 EBRD ESR1, ESR 2, ESR4, ESR 5, ESR 8, ESR 10 EP4 P2, P3, P4, P5, P6 ADB ESS1, ESS2, ESS4, ESS5, ESS8, ESS10 AIIB ESS1, ESS2
Deficiency/Gap Analysis and Required Studies for the ESIA	■ The social baseline study has not been prepared for the Aol of the Project. ■ There is no assessment made for gender aspects and vulnerable groups in the Project impact area. ■ The Project does not have a LRP to assess the economic displacement impacts of the Project. ■ Cultural Heritage impact assessment was not performed. ■ Cultural Heritage Management Plan was not developed yet.
Gap Classification	▲ Large Gap

8.4.11 Additional Studies

Below studies will be conducted for the Project:

- Socio-economic baseline studies;
- Field studies with a sampling methodology that will represent the entire social impact area of the Project; the livelihoods, household structure, social trends, gender issues and vulnerable groups in the social impact area of the Project;
- Social impact assessment study at the provincial, district and neighbourhood/village level based on demographic, economic, physical, and social data, including gender, vulnerable groups and human right subjects;
- A standalone LRP;

- Cultural heritage impact assessment;
- Cultural Heritage Management Plan.

9.0 PROPOSED PROJECT CATEGORIZATION

According to the EBRD's E&S Policy, the EBRD categorises each project to determine the nature and level of environmental and social assessment and appraisal, information disclosure and stakeholder engagement required. This will be commensurate with the nature, location, sensitivity and scale of the project, and the significance of any new and additional potential environmental and social impacts.

According to the IFC's Policy on E&S Sustainability (January 2012), as part of the review of environmental and social risks and impacts of a proposed investment, IFC uses a process of environmental and social categorization to reflect the magnitude of risks and impacts. The resulting category also specifies IFC's institutional requirements for disclosure in accordance with the IFC's Access to Information Policy. Similar categorisation criteria are adopted by other E&S standards that apply to this Project. The requirements from IFC and Equator Principles IV regarding the Environmental and Social Assessment process and outcomes differ depending on the category of the Project.

Accordingly, project categories are presented in table below:

Table 38: Project Categorization

IFC and EP IV
Category A: business activities with potential significant adverse E&S risks and/or impacts that are diverse, irreversible, or unprecedented.
Category B: business activities with potential limited adverse E&S risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures.
Category C: business activities with minimal or no adverse E&S risks and/or impacts.
Category FI: business activities involving investments in financial intermediaries or through delivery mechanisms involving financial intermediation. This category is further divided into three risk categories (FI-1, FI-2, FI-3).
EBRD E&S Policy
A project is categorised "A" when it could result in potentially significant environmental and/or social impacts, including direct and cumulative environmental and social impacts, which are new and additional and cannot be readily identified, assessed or mitigated. Projects categorised as A require a formalised and participatory ESIA process. An indicative list of Category A projects is presented in Annex B to this policy.
A project is categorised "B" when its potential environmental and/or social impacts are typically site-specific and/or readily identified and addressed through mitigation measures. The scope of environmental and social assessment will be determined by the EBRD on a case-by-case basis. Category B projects cover a broad range of EBRD projects, and approaches to Category B projects will vary on the basis of environmental and social impacts.
A project is categorised "C" when it is likely to have limited environmental and/or social impacts that can be readily identified and mitigated.

As per the E&S categorization criteria of the applicable standards given above, based on the available data, the potential scale, complexity and type of the environmental and social impacts and risks presented by the Project, the categorization, associated with the construction and operation of the Project, is proposed as "A".

10.0 IDENTIFICATION OF THE PROJECT IMPACTS

10.1 Identification of the Project Actions

Project actions are activities that are directly or indirectly related to the Project which can interfere with the environment as primary generative elements of environmental or social pressures, have been identified from the project description and from the documents provided, in the context of this methodology as impact factors.

Project actions associated with the Project's development from the site preparation and construction phases, through operations to decommissioning are listed below.

10.1.1 Site Preparation and Construction Phase

- **Vegetation clearing:** includes removal of natural vegetation, particularly trees and shrubs to allow excavators and dozers to enter the work areas.
- **Topsoil/soil removal and storage:** includes stripping of the first layers of vegetated topsoil (including the herbaceous vegetation) for storage on dedicated areas and all actions to prevent soil degradation like water runoff and wind erosion
- **Surface levelling and grading:** includes excavation and earthwork to create the surface over which the project will be constructed, and it can include excavation through soft soil, excavation through rocks and excavation through sediments
- **Material transportation (transportation of construction materials):** includes transportation of the elements and construction material from the ports-station of arrival to the stock yards and camps and from the stockyards/camps to the working or construction areas.
- **Construction and operation of temporary and associated facilities:** includes the establishment, use, and subsequent decommissioning of temporary and associated facilities required to support construction and operation activities, such as storage areas, access roads and energy transmission lines.
- **Installation of PV panels:** includes the positioning, mounting, and fixing of photovoltaic panels onto support structures, as well as associated activities such as alignment, electrical connections, and testing.

10.1.2 Operation Phase

- **Plant/infrastructure operation:** includes technical (operation of the plant/infrastructure, surveillance, monitoring, maintenance) and administrative activities to maintain the project in operation according to standard operating procedures

10.1.3 Decommissioning/Closure Phase (Not foreseen)

- **Building/infrastructure demolition:** includes demolition of existing structures like buildings, roads, culverts, etc.
- **General decommissioning works:** include disassemble, waste transports, management and restoration of the area etc.

10.2 Identification of the Impact Factors

Project Actions generate Impact Factors, intended as potential interferences that can influence, both positively or negatively, directly or indirectly, the environmental and/or social components.

Taking into consideration the national EIA process, international guidelines and previous experiences, Impact Factors as determined by the Project Actions are listed in the following table.

Table 39: Project Actions and Relevant Impact Factors

Project Actions	Impact Factors
Pre-construction and Construction	
Vegetation Clearing	Changes in the local morphology
Topsoil/soil removal and storage	Pollutant emission to the soil
Surface levelling and grading	Topsoil and lower soil removal
Material transportation (transportation of construction materials)	Occupation of land
Construction and operation of temporary and associated facilities	Discharge of wastewater/water
Installation of PV panels	Changes in sedimentation pattern
	Accidental introduction of hazardous chemicals
	Emission of dust
	Gaseous Emissions
	GHG Emissions
	Emission of noise
	Emission of vibration
	Increased vehicular traffic
	Interruption of roads and limitation of traffic
	Emission of light
	Introduction of buildings/ infrastructures
	Vegetation and topsoil removal
	Changes in local hydrology and surface water
	Increase in vehicular traffic
	Emission of noise and vibration
	Introduction and spreading of alien species (potential risk)
	Population increases during construction
	Demand for workforce
	Demand for goods, materials and services
	Infrastructure and equipment design
	Traffic and pedestrian safety
	Transport of dangerous goods
	Community exposure diseases
	Security
	Economic displacement
	Access to ecosystem services
	Children's access to education services
	Access to health services
	Damage on road transportation
	Access to water sources
	Impact on Gender Issues
	Impact on the vulnerable groups
Operation	
Plant/infrastructure operation	Pollutant emission to the soil
	Occupation of land
	Discharge of wastewater/water
	Accidental introduction of hazardous chemicals
	Emission of dust
	GHG Emissions
	Emission of noise
	Emission of vibration

Project Actions	Impact Factors
	Emission of light Introduction of buildings/ infrastructures Presence of new buildings/ infrastructures Changes in local hydrology and surface water Emission of noise and vibration Introduction and spreading of alien species (potential risk) Population increases during operation Demand for workforce Demand for goods, materials and services Contribution on National Economy Operation traffic Infrastructure and equipment design Access to land Transportation
Decommissioning	
Building/infrastructure demolition General decommissioning works	A new impact is not expected other than those listed in the construction and operation phases in the decommissioning and closure phase.

10.3 Preliminary Impact Identification

Impacts are identified as potential interferences of the impact factors with the environmental components identified. The analysis is conducted by means of matrices where environmental components are listed as rows and impact factors as columns.

When an impact factor has a potential to alter an environmental and social component, an impact is identified in the matrix. Impact factors can have a direct or indirect impact over a certain component.

All direct and indirect impacts identified are described in terms of their mechanism of action and likely consequences.

Matrixes have been created to link physical, biological and social components to the Project actions and presented in Table 40, Table 41 and Table 42, respectively.

Table 40: Matrix for Physical Components and Impact Factors

Component \ Impact factor																	
	Changes in local morphology	Pollutant emissions to the soil	Topsoil and lower soil removal	Occupation of land	Discharge of wastewater/water	Changes in sedimentation pattern	Accidental introduction of hazardous chemicals	Emission of dust	Gaseous Emissions	GHG Emissions	Emission of noise	Emission of vibration	Increased Vehicular Traffic	Interruption of Roads and Limitation to Traffic	Emission of light	Introduction of buildings/ infrastructures	Vegetation clearing
Geology and geomorphology	√																
Soil and sub-soil		√	√	√													
Hydrology and surface water quality					√	√	√										
Hydrogeology and groundwater quality							√										
Air quality								√	√								
GHG emission										√							
Noise											√						
Vibration												√					
Traffic													√	√			
Visual			√					√							√	√	√

Table 41: Matrix for Biological Components and Impact Factors

Impact factor \ Component	Vegetation and topsoil removal	Changes in local hydrology	Increase in vehicular traffic	Emission of noise and vibration	Introduction and spreading of alien species	Presence of new buildings/ infrastructures
Biodiversity component	√	√	√	√	√	√
Natural habitats	√	√	√	√	√	√
Critical habitats	√	√	√	√	√	√

Table 42: Matrix for Social Components and Impact Factors*

Component \ Impact factor	Population and Demography	Economy and Employment	Community Health and Safety	Land Acquisition and Livelihoods	Infrastructure and Services	Gender Assessment	Vulnerable Groups Assessment	Cultural Heritage
Population increases during construction	√		√		√	√	√	√
Population increases during operation	√		√		√	√	√	
Demand for workforce		√				√		
Demand for goods, materials and services		√				√		
Contribution on national economy		√						
Infrastructure and equipment design			√		√			√
Traffic and pedestrian safety			√			√	√	
Transport of dangerous goods			√			√	√	
Community exposure diseases			√			√	√	
Security			√			√	√	
Economic displacement				√		√	√	
Access to ecosystem services				√		√	√	
Access to land (agricultural and pasture)				√		√	√	
Children's access to education					√		√	
Access to health services					√	√	√	
Damage on road transportation					√			

Impact factor \ Component	Population and Demography	Economy and Employment	Community Health and Safety	Land Acquisition and Livelihoods	Infrastructure and Services	Gender Assessment	Vulnerable Groups Assessment	Cultural Heritage
Access to water sources					√			
Transportation					√			
Impact on gender issues							√	
Impact on the vulnerable groups							√	

*It should be noted that Human Rights Impact assessment including gender aspect will be assessed based on the methodology proposed in EP IV hence it is not reflected in above table.

10.3.1 Assignment of the Sensitivity Level

As previously stated, the final goal in determining the Project's baseline is the evaluation of the sensitivity of each environmental and social component as a precondition to perform the impact assessment.

Each environmental and social component may differ in sensitivity towards possible impacts generated by the Project. The sensitivity of a component is typically evaluated on the basis of the presence/absence of some features which define both the component's current degree of quality and susceptibility to changes. For example, for physical components the sensitivity is typically related to the quality of the receiving environment, such as high or low levels of ambient noise and ambient air quality, presence or absence of soil pollution, surface or groundwater pollution, and the like; for biological components sensitivity is linked to the presence of threatened, endemic, and protected species or habitats; for social components the presence of vulnerable groups or individual in the community (such as needy, elderly, members of ethnic or religious minorities, indigenous people, etc) and historical sites are among the elements that determine sensitivity.

The **sensitivity (S)** of the component is defined using component-specific metrics during the baseline and can assume values between 1 and 5 associated to a definition from Low to High. The S value is assigned considering both the component's characteristics and the possible presence of sensitivity features.

The following list presents potential sensitivity features to be considered in defining the sensitivity of typical environmental and social components considered for the ESIA studies. The specific metrics and levels of sensitivity for each of the features considered will be defined during the baseline studies and will be presented in the ESIA Report.

Geology and geomorphology:

- Presence of faults: areas with active faults are considered to pose highest risks to the project and hence are considered of higher sensitivity;
- Presence of landslides: areas within the range of landslides are considered to pose highest risks to the project and hence are considered of higher sensitivity;
- Other geohazards: (karst areas, slope erosion, liquefaction, stream channels, etc.). the presence of other geohazards in the project area is considered of higher sensitivity;

- Seismicity: the location of the project in areas classified as at seismic risk is considered of higher sensitivity;

Soils:

- Soil agricultural potential: soils with highest agricultural potential according to local or global assessments are attributed a higher sensitivity
- Soil erosion potential: soils with highest erosion potential according to local or global assessments are attributed a higher sensitivity
- Soil pollution potential: soils in areas identified and previously used for industrial, mining, or intensive agriculture are attributed a higher sensitivity.

Surface water

- Presence of waterbodies in the project area of influence and level of ecological integrity; the sensitivity increases with the level of ecological integrity;
- Presence of waterbodies in the project area of influence and level of water/sediment pollution; the sensitivity increases in the presence of polluted watercourse;
- Presence of waterbodies and level of tolerance to hydrological changes; the sensitivity is higher for waterbodies with a low level of tolerance for hydrological changes;

Groundwater

- Presence of shallow aquifers; the sensitivity increases with the presence of shallow aquifers that could be more easily exposed to contamination source;
- Productivity of exploited aquifers; aquifers with low productivity might be depleted in case the project entails groundwater abstraction. The sensitivity is higher for aquifer with low productivity;
- Presence and extent of existing groundwater exploitation; the sensitivity is higher for aquifers already exploited;
- Rock permeability; the sensitivity increases in case the subsoil is made of rocks with high permeability.
- Aquifer vulnerability; the sensitivity increases with the vulnerability of the aquifer as determined by accepted methodologies;

Landscape and visual quality:

- Presence and number of settlements/people within the visual zone of visual influence;
- Presence of areas of touristic interest within the visual zone of visual influence;
- Presence of roads and volume of traffic within the visual zone of visual influence;
- Presence of archaeological, cultural, historic areas within the visual zone of visual influence;
- Presence of natural parks protected and classified areas within the visual zone of visual influence;

Climate

- The Project area is characterized by an extreme climate (semi-desert, circum arctic, etc.) and/or by a frequency of extreme events (tornadoes, floods, droughts, etc.).
- There is evidence of the effects of climate change within the project AoI.

- The Project Area has a limited ability to adjust to climate change.

Air quality

- Presence of settlements and population potentially exposed to air emissions from the project; the sensitivity increases with the number of people exposed;
- Presence of vulnerable targets (schools, hospitals, retirement houses, etc.) exposed to air emissions from the project; the sensitivity increases with the number of vulnerable people exposed;
- Air quality levels in the areas affected by the project; the sensitivity increases in areas already polluted and in areas designated for air quality protection;
- Presence of sensitive ecological receptors like protected or classified areas, protected or endangered habitats and species;

Noise and vibration:

- Presence of settlements and population potentially exposed to noise and vibration from the project; the sensitivity increases with the number of people exposed;
- Presence of vulnerable targets (schools, hospitals, retirement houses, etc.) exposed to noise and vibration from the project; the sensitivity increases with the number of vulnerable people exposed;
- Noise and vibration levels and/or sources in the areas affected by the project; the sensitivity increases in areas already experiencing high levels of noise and vibrations and in areas designated for protection from noise and vibrations;
- Presence of sensitive ecological receptors like protected or classified areas, protected or endangered habitats and species;

Flora

- Number of species of flora present in the project Aol. The sensitivity increases with the number of species present
- Presence of threatened species of flora in the project Aol as defined by global (International Union for Conservation of Nature ("IUCN")) or national red lists. The sensitivity increases with the number of threatened species present and the level of threat.
- Presence of endemic or restricted range species of flora in the project Aol as defined by global (IUCN) or national red lists. The sensitivity increases with the number of species present and the level of endemism.
- Presence of protected species or species listed in international conventions for the protection of biodiversity. The sensitivity increases with the number of protected/listed species.
- Presence of invasive alien species. The sensitivity is higher in areas with a higher number of invasive alien species.

Fauna

- Number of species of fauna present in the project Aol. The sensitivity increases with the number of species present.
- Presence of threatened species of fauna in the project Aol as defined by global (IUCN) or national red lists. The sensitivity increases with the number of threatened species present and the level of threat.

- Presence of endemic or restricted range species of fauna in the project Aol as defined by global (IUCN) or national red lists. The sensitivity increases with the number of species present and the level of endemism.
- Presence of protected species or species listed in international conventions for the protection of biodiversity. The sensitivity increases with the number of protected/listed species.
- Presence of invasive alien species. The sensitivity is higher in areas with a higher number of invasive alien species.

Habitats

- Presence of natural habitats; the sensitivity increases with the surface of natural habitats present in the project Aol.
- Presence of threatened or protected habitats; the sensitivity increases with the surface of threatened or protected habitats present in the project Aol.
- Presence of critical habitats; the sensitivity increases with the surface of critical habitats present in the project Aol.

Protected areas

- Presence of protected areas; the sensitivity increases with the number, extent and level of protection of protected areas present in the project Aol.

Economy

- Presence of skilled personnel; positive economic impact due to employment depends on the presence in the local workforce of the skills that are most relevant to the project. The sensitivity is higher for communities with skilled personnel.
- Presence of businesses and economic activities relevant to the project; positive economic impact due to procurement of goods and services depends on the presence of economic activities in the local communities. The sensitivity is higher for communities with a well-structured business community.

Employment and livelihood

- Level of employment (for men, women, youth) compared to National – Regional average
- Level of household income compared to National – Regional average

Education

- Presence of education facilities;
- Level of education of the population;

Health

- Level of health care available; the project could cause a population influx that can put a strain to existing health services if left unmanaged. The sensitivity is higher in areas with an insufficient level of healthcare available;
- Presence of communicable diseases; the spreading of communicable diseases can be exacerbated by the influx of workers due to the project. The sensitivity is higher in areas affected by a high level of communicable diseases.

- Overall health state of the population; the project might cause increased levels of exposure to environmental health determinants like air pollutants, noise and vibrations, etc. The sensitivity is higher in the presence of existing health issues in the communities potentially affected by the project.
- Presence of existing environmental health determinants. The presence of environmental health determinants like air and water pollution, soil and groundwater contamination is increasing the sensitivity.

Social capital

- Presence of Non-Governmental Organizations and Community Based Organizations.
- Presence of formal and informal social networks
- Level of social conflict in the communities

Politics and governance

- Presence and role of government institutions
- Presence of local elected officials
- Level of political participation
- Presence of multiple political parties
- Presence and severity of political conflicts

Land and properties

- Presence of agricultural land:
- Presence of houses;
- Presence of public buildings

Community safety and security

- Crime rate in the communities
- Effectiveness of the law enforcement system
- Effectiveness of the judiciary system

Transportation and traffic

- Presence and state of transportation facilities (roads, railways, ferry, etc)
- Presence and level of service of public transportation
- Presence of traffic congestion issues

Infrastructures

- Presence of transportation infrastructures
- Presence of energy infrastructures
- Presence of water infrastructures

Ecosystem Services

- Presence of ecosystem services;
- Dependence of the local communities from ecosystem services

Cultural heritage:

- Presence of protected or recognized sites of archaeological or cultural value; the sensitivity increases with the number, cultural/scientific value and level of protection of sites potentially affected;
- Presence of sites with a high archaeological potential in the absence of specific site information or appropriate protection mechanisms; the sensitivity increases with the archaeological potential as indicated by relevant experts;
- Presence of intangible cultural values like sacred sites, initiation sites, sites used for cultural events, sites recognized in oral traditions, etc. the sensitivity increase with the number of sites and values as recognized by the local communities.

The component's Sensitivity can vary from low (1) to high (5) according to the following definitions:

- **Low (1):** the component does not present elements of sensitivity;
- **Medium-low (2):** the component presents few elements of sensitivity that have limited significance;
- **Medium (3):** the component presents numerous elements of sensitivity that have limited significance;
- **Medium-high (4):** the component presents few elements of sensitivity that have high significance;
- **High (5):** the component presents numerous elements of sensitivity that have high significance.

The list of sensitivity features represents a tool/guideline used by the experts along with the “expert judgement” to rank the sensitivity of each component in the abovementioned five classes. For the biodiversity components the sensitivity assessment will also consider the ecological and biological characteristics of each component in relation to the possible impacts generated by the Project.

Sensitive receptors of the Project will be identified through satellite images, interview with the mukhtars of the close settlements and local community during the social baseline field studies.

10.3.2 Scoring of the Impact Factors

The **impact factors** identified during the analysis of the Project and through the definition of the project phases and project actions are assessed in their relevance, using a scoring system. The parameters considered to assess the impact factor score are the following:

Duration (D): is the duration of the impact factor and can vary from short to long according to the following definitions:

- very short, when the duration is shorter than a month;
- short when the duration is between a month and one year;
- medium when the duration is between one and two years;
- long when the duration is between two and five years;
- very long when the duration is over five year.

Frequency (F): is the frequency with which the impact factor manifests itself:

- single event;
- infrequent, if it consists of a few events evenly or randomly distributed over time;
- recurrent, if it consists of numerous events evenly or randomly distributed over time;
- frequent if it consists of a high number of events evenly or randomly distributed over time;
- continuous, if the event has no interruption over time.

Geographic extent (G): is the geographical area within which the impact factor can exert its effects:

- project site; the impact factor is confined within the facilities owned or exclusively controlled by the project;
- local; the impact factor extends to the areas or communities neighbouring the project site
- regional; the impact factor extends to an area beyond the surroundings of the project site and to regional physical (airshed – watershed, etc) or administrative boundaries
- national; the impact factor extends throughout several regions or to the entire country
- international: the impact factor has an international or global reach

Intensity (I): is a measure of the physical, economic or social severity of the impact factor:

- negligible: the impact factor is generated in quantities that cannot be easily detected or perceived and that are unlikely to be able to cause any detectable change in the target environmental or social components;
- low: the impact factor is generated in quantities that can be detected or perceived but whose effects are unlikely to cause tangible changes in the target environmental or social components;
- medium, the impact factor is generated in quantities that are well within legal standards or accepted practices and/or whose effects are likely to cause tangible changes in the target environmental or social components;
- high, the impact factor is generated in quantities that at the limit of legal standards or accepted practices and/or whose effects are likely to cause serious impairment in the target environmental or social components;
- very high, the impact factor is generated in quantities that are at risk of exceeding the limits of legal standards or accepted practices and/or whose effects are likely to cause very serious to catastrophic damage to the target environmental or social components;

Each of the parameters listed above can have a value between 1 and 5, and severity of the impact will be determined through an **Impact Factor Score** which will be the sum of the 4 parameters, hence it can assume a value between 5 and 20.

10.3.3 Calculation of the Impact Value

The calculation of the Impact Value will be done combining the Impact Factor Score, which express the magnitude of the impact, with the sensitivity of the target component (determined during the baseline), and the impact reversibility.

The **Reversibility (R)** is the property of an impact to reduce its intensity over time and to eventually disappear entirely. It may vary from reversible to irreversible according to the following definitions:

- reversible in the short term, if the initial condition of the component will be restored in a period between weeks and months after the end of the impact factor and/or the restoration activities;
- reversible in the short/mid-term, if the initial condition of the component will be restored in a period between a few months and one year after the end of the impact factor and/or the restoration activities;
- reversible in the mid-term, if the initial condition of the component will be restored in a period between one and five years after the end of the impact factor and/or the restoration activities;
- reversible in the long term, if the initial condition of the component will be restored in a period between five and 25 years after the end of the impact factor and/or the restoration activities;
- irreversible, if it is not possible to predict restoration to the initial conditions.

The reversibility is measured on a scale between 1 (short term) and 5 (irreversible).

The **Impact Value (IV)** will be calculated by multiplying the Impact Factor Score with the component's Sensitivity level and Reversibility, according to the following formula: $IV = IFS \times S \times R$

10.3.4 Calculation of the Residual Impact

The next step will consist in defining mitigation measures and assessing their effectiveness to reduce or eliminate the negative impact (or to maximize the positive one). The mitigation measures will be defined with reference to the mitigation hierarchy listed below in descending order of effectiveness:

- Avoid;
- Minimize;
- Restore;
- Offset;
- Compensate.

The effectiveness of the mitigation measures defined in the environmental and social management plans will be assessed using expert judgement and the outcomes from previous applications of similar mitigation measures to similar Projects. The definitions of the mitigation effectiveness may vary from none to high, as described below:

- None: the measures can reduce the impacts by less than 20% of the expected outcome;
- Medium low: the measures can reduce the impacts by 20% - 40% of the expected outcome;
- Medium: the measures can reduce the impacts by 40% - 60% of the expected outcome;
- Medium high: the measures can reduce the impacts by 60% - 80% of the expected outcome;
- High: the measures can reduce the impacts by more than 80% of the expected outcome.

The Mitigation effectiveness will be measured on a scale from 1 to 0.2 (1 = minimum effectiveness; 0.2 = maximum effectiveness) and the **Residual Impact Value (RIV)** will be calculated multiplying the impact value with the impact mitigation effectiveness as per the following formula: $RIV = IV \times M$

Positive Impacts

Positive impacts are typically associated with economic and social opportunities and sometimes with environmental aspects a Project can solve (for example: a Project located in a brownfield where existing

environmental issues can be addressed). Projects are typically promoting activities to enhance the economic, social and environmental opportunities through specific programs, plans and measures including, for example, professional skills generation, community investment, shared value programs, remediation programs, biodiversity conservation Projects, etc.

The assessment of positive impacts will be based on the same parameters used to evaluate the negative ones. The only difference will be that the mitigation measures will be replaced by enhancement measures, or measures to maximize the potential positive impacts.

The enhancement measures effectiveness defined in the environmental and social management plan will be assessed using expert judgement and the outcomes of previous application of similar enhancement measures to similar Projects. The definitions of the enhancement effectiveness may vary from none to high as shown below:

- None: the measures can enhance the positive impacts by less than 10% of the expected outcome;
- Medium low: the measures can enhance the positive impacts by 10% - 20% of the expected outcome;
- Medium: the measures can enhance the positive impacts by 20% - 30% of the expected outcome;
- Medium high: the measures can enhance the positive the impacts by 30% - 40% of the expected outcome;
- High: the measures can enhance the positive impacts by more than 40% of the expected outcome.

All mitigation and enhancement measures to be identified are the basis for the preparation of the environmental and social management plan, where the responsibilities, timelines and costs for their implementations are described.

10.3.5 Scale of Residual Impacts

The scale of the residual impacts resulting from the calculation described above will range from 0.8 to 500. The impact value will then be scaled to 5 levels by dividing into 5 classes with an equal number of values, the entire distribution of values will be obtained.

The residual negative impacts will be classified into 5 levels according to the table below:

Residual impact score	Residual impact definition	Colour Code
0.8 – 33.0	Negligible	
33.1 – 76.0	Low	
76.1 – 136.0	Medium	
136.1 – 228.0	High	
228.1 – 500.0	Very High	

The residual positive impacts will be classified into 5 levels according to the table below:

Residual impact score	Residual impact definition	Colour Code
0.8 – 33.0	Negligible	
33.1 – 76.0	Low	
76.1 - 136.0	Medium	

Residual impact score	Residual impact definition	Colour Code
136.1 - 228.0	High	
228.1 – 500.0	Very High	

10.3.6 Overall Assessment

The methodology described above will allow for an analytical assessment of impacts caused by individual impact factors over individual environmental and social components. The process therefore will result in a table presenting several impacts from different impact factors for each component.

The table will define the assessment of the overall impact on each component. It will represent a synthesis of the impacts on a component from all the impact factors generated by the Project actions. The impact assessment will provide a comprehensive view of the impact value that will affect the environmental or biological component.

The impact assessment will be expressed based on the assessor's experience, assigning higher weight to the values less favourable to the component's protection, in order to guide the assessment toward a more conservative approach.

Impacts will be presented in separate tables for negative and positive impacts to avoid automatic trade-offs and/or mediating between positive and negative aspects, as they will often target different sections of the community.

10.3.7 Cumulative Impact Assessment

Cumulative impacts are caused by the accumulation and interaction of multiple stresses affecting the parts and the functions of ecosystems. Of particular concern is the knowledge that ecological systems sometimes change abruptly and unexpectedly in response to apparently small incremental stresses.

EBRD ESR1 require that the ESIA includes a cumulative impact assessment ("CIA"), i.e. *"The environmental and social assessment process will also identify and characterise, to an appropriate extent, the cumulative risks and impacts of and to the project, in combination with the risks and impacts of other relevant past, present and reasonably foreseeable developments, as well as unplanned but predictable activities enabled by the project that may occur later or at a different location"*.

Similarly, IFC PS 1 (2012) and another recent publication by IFC (Good Practice Handbook on Cumulative Impact Assessment and Management, August 2013) also require for an ESIA to include a CIA, i.e. *"cumulative impacts that result from the incremental impact, on areas or resources used or directly impacted by the project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted"*.

Those guidelines denote that the scope of the cumulative impact assessment should be commensurate with the extent of cumulative impacts anticipated. This gives good direction to produce a focused assessment, considering only relevant disciplines. Cumulative impacts are limited to those impacts generally recognized as important on the basis of scientific concerns and/or concerns from Affected Communities³⁶.

³⁶ Examples of cumulative impacts include: incremental contribution of gaseous emissions to an airshed; reduction of water flows in a watershed due to multiple withdrawals; increases in sediment loads to a watershed; interference with migratory routes or wildlife movement; or more traffic congestion and accidents due to increases in vehicular traffic on community roadways.

Cumulative impacts can result from various types of interaction among different impact factors:

- Impacts arising from the accumulation of different impact factors at a specific location or over a specific receptor; as an example, the concurrent presence of the emission of noise and emission of dust during construction at the same location;
- Impacts arising from the same impact factor over the same receptor in a different geographic location; as an example, the degradation of the same habitats in different locations may harm the population of associated species across their entire distribution area.
- Impacts arising from the concurrent presence of impact factors caused by the Project and other development projects; as an example, we can consider the emission of dust from the construction and the concurrent construction of a new infrastructure project at the same location.

Good Practice Handbook proposes as a useful preliminary approach for developers in emerging markets the conduct of a rapid cumulative impact assessment ("RCIA") which is illustrated below.

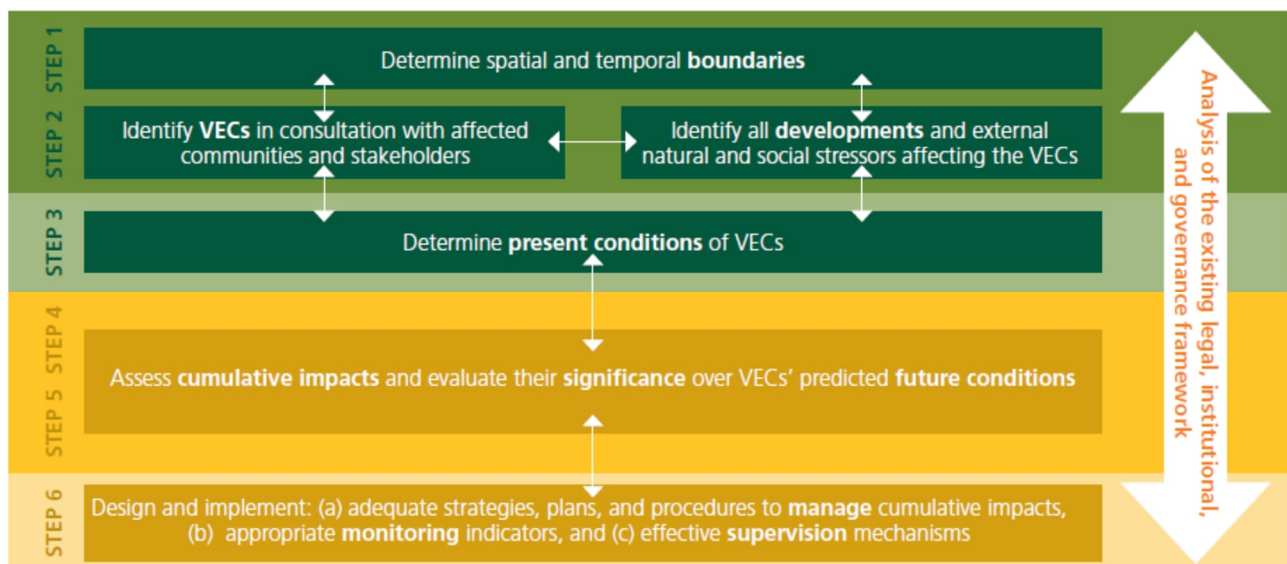


Figure 29: RCIA: Six-Step Approach

For the purposes of the present study, the CIA will be limited to those residual effects (post mitigation) resulting from past, present or reasonably foreseeable human activities or actions which occur within the area where a linkage between the residual effects resulting from the activities related to the Project and the residual effects of other actions occurs.

The foreseeable projects that will supplement the Project with a third-party service or other independent projects proposed in the area were identified and described to be considered in the CIA. There must be a reasonable potential that the other projects' impacts will overlap with those of the Project in time and/or space. If this overlap is not apparent, then a CIA is not warranted.

For cumulative effects to occur, residual impacts from the Project need to overlap with residual impacts from other foreseeable projects. Because of this for biophysical impacts, the largest potential impact area will be used for the CIA is the RSA. For social disciplines, a hierarchy of areas will be considered according to the Project socio-economic impact assessment.

Within the scope of the "Renewable Energy Resource Areas Regulation" published in the Official Gazette dated 09.10.2016 and numbered 29852; parcels numbered 101/34 in Mancılık Village, 115/42 in Akpinar Village, 177/333 in Havuz Village, and 128/21 in Beyyurdu Village of Kangal District of Sivas Province, which are

currently classified as 'raw soil', have been declared as YEKA in line with the decision of the Ministry of Energy and Natural Resources dated 14.07.2023 and numbered 32248. The Project is planned to be constructed and operated in these areas declared as YEKA.

Comprehensive cumulative impact assessments will be carried out as part of the ESIA report.

11.0 PROPOSED TABLE OF CONTENT OF THE ESIA

An outline of the proposed contents of the ESIA report is provided in Table 43.

The content could be modified during the evolution of the Project or based on the findings of on-going activities or as a result of the stakeholder engagement activities. However, it is anticipated that the contents of the ESIA report will broadly conform to the suggested main headings.

The outline provided represents the anticipated structure and principal contents of the ESIA Report. Additional supporting studies, management/action plans (BAP etc.) and standalone documents may be prepared, where required, based on the outcomes of the ESIA process, ongoing technical assessments and applicable lender requirements.

Table 43: ESIA Report Annotated Content

Heading	Explanatory notes
Index List of Tables List of Figures Acronyms and Glossary	-
Executive Summary	Summary of the ESIA for the decision makers
Introduction	This section will provide the Project history, the presentation of the Client, the ESIA approach and the Report structure
Regulatory and Policy Framework	This section will provide a summary of the legislation and standards relevant for the Project. ■ Current National Environmental and Social Legislation ■ EBRD Environmental and Social Requirements, IFC Standards and Guidelines, Equator Principles, ADB and AIIB Environmental and Social Standards ■ Other International Standards ■ Regulatory Framework Applicable for the Project ■ Environmental Limits and Standards in National Regulations, IFC Guidelines and EU Regulations ■ A conformance table will be produced to compare National Legislation, Equator Principles and IFC Standards
Project Description	Description of the project, owner, schedule, components (including associated facilities) and project phases as well as alternative analysis in terms of project area, technology, and no project option.
Alternatives Analysis	This section will analyse alternatives in terms of location, technology and no Project
ESIA Approach and Methodology	This section will provide the general approach and the methodology for the ESIA, from the definition of the current state of the components (Baseline) to the impact's evaluation

Heading	Explanatory notes
Environmental and Social Baseline Baseline results - Physical components	This section will present the available baseline data and results of investigations on the physical components within the Project Aol. The following components will be considered at least: ■ Meteorology and Climatology ■ Geology and Geomorphology ■ Geohazard and Seismology ■ Soil and Sub-soil ■ Hydrology and Surface Water Quality ■ Hydrogeology and Groundwater Quality ■ Air Quality ■ Noise and Vibration ■ Traffic ■ Visual
Environmental and Social Baseline Baseline results - Biological components	This section will present the available baseline data and results of investigations on the biological components within the Project Aol. The following components will be considered at least: ■ Terrestrial and freshwater Flora ■ Terrestrial and freshwater Fauna ■ Natural and Modified Habitats ■ Protected and International Recognized Areas ■ Ecosystem Services
Environmental and Social Baseline Baseline results - Social components	This section will present the available baseline data and results of investigations on the social components within the Project Aol. The following components will be considered at least: ■ Administrative Structure ■ Population and Demography ■ Economy and Employment ■ Land Use ■ Education ■ Health ■ Infrastructure, Services and Ecosystem Usage ■ Vulnerability and Gender ■ Cultural Heritage

Heading	Explanatory notes
Impact Assessment and Mitigation Measures	This section will provide the impact assessment on the environmental and social components, considering Preconstruction, Construction, Operation and Decommissioning/Closure phases of the Project. Positive and negative impacts will be assessed using appropriate modelling and predictive techniques, and mitigation measures for residual impacts will be outlined.
Cumulative Impact Assessment	Cumulative impacts will be assessed to identify both impacts on the same component/receptors arising from multiple project actions and impacts on the same component/receptor arising from other existing and/or future activities and the Project activities.
Environmental and Social Management System Structure	The ESMS Structure will be included here, and it is intended to describe the framework for the general management issues.
Conclusion	This section will present the main impact evaluation outcome as well as any further recommendation.
References	All references made in the document and appendices will be listed here.
Appendices	This section will comprise the following specialist studies: Laboratory Analyses Results on air, noise, soil and water samples will be included as Annex

* The Biodiversity Baseline and Impact Assessment will include the assessment of Natural Habitat, PBFs and Critical Habitat, where relevant, in accordance with IFC PS6, EBRD ESR6 and ADB ESS6 requirements. Critical Habitat Assessment findings will be presented within the biodiversity sections of the ESIA and are not proposed as a standalone deliverable.

12.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT SYSTEM

The Project does not currently have a project-specific ESMS that covers its components and associated facilities. The ESMS documentation will be developed before construction begins. This system will include policies, procedures, and management and monitoring plans. Environmental, social, and occupational health and safety aspects will be covered in the ESMS. Individual plans for the components under these aspects, such as (but not limited to) air, noise, water, soil, waste, supply chain, human rights, cultural heritage, labour conditions, traffic, and emergency response, security will be prepared. This documentation will also include specific procedures and instructions for technical issues such as excavation.

The crucial step for the implementation of the ESMS is management commitment. The top management's commitment will be ensured for the implementation of the ESMS, and the performance of the implementation will be monitored regularly. After the development of specific ESMS elements, such as a stakeholder engagement plan, these documents will be announced through different communication tools such as the project website or brochures. Awareness will be raised for the environmental and social aspects regularly.

Training aimed at implementing the ESMS will be provided to all workers and conducted regularly, considering new recruitments. Roles and responsibilities will be defined in each document, and each document will present the actions planned to be carried out in the project phases along with their schedule.

ACWA has developed corporate policies and formal statements addressing environmental, social, and governance matters and these are also applicable to the Project. Project-specific policies and procedures will be developed as part of the ESIA process and will be implemented throughout the Project lifecycle. ACWA's corporate policies and statements are presented below:

■ **Environment**

- Sustainability Statement

■ **Social**

- Corporate Social Responsibility (“CSR”) Policy
- Health, Safety, Security, Environmental (“HSSE”) Policy

■ **Governance**

- Code of Conduct and Ethics Policy
- Anti-bribery/Anti-corruption Policy

A framework Environmental and Social Management System (ESMS) will be presented as part of the ESIA. The ESMS will identify the anticipated management plans required for the Project, which may be refined following completion of the impact assessment and detailed design.

- Labour Management Plan (LMP);
- Community Health and Safety Management Plan;
- Security Management Plan;
- Biodiversity Management Plan (BMP);
- Cultural Heritage Management Plan (if required);
- Traffic and Transportation Management Plan;
- Waste and Wastewater Management Plan;
- Emergency Preparedness and Response Plan;
- Stakeholder Engagement Plan;
- Livelihood Restoration Plan (where relevant).

13.0 CONCLUSIONS AND NEXT STEPS

As first step in the ESIA process, WSP Türkiye produced an Inception Report and this Scoping Report that defines the scope and methodology of the ESIA studies based on the preliminary understanding of the Project Area settings and of the potentially significant environmental and social impacts of the Project. It also includes a list of additional information and data that are still required to fulfil the requirements of EBRD ESRs, IFC PSSs, EPs, ADB ESSs, AIIB ESSs as well as national and EU legislation. Based on that, the main next steps to carry out the ESIA studies will be as follows:

- confirming the classification of the Project that is defined according to the IFI Standards
- continuing on collection of the Project data (including additional baseline studies) in coordination with the ACWA
- collecting data on physical, social and biological baseline components
- conducting a detailed social field study to develop LRP

- develop an Environmental and Social Impact Assessment, following the methodology, defined in this document (Section 8.0). The impact assessment will be focused on the physical, biological and social components impacted by the Project actions including associated facilities of the Project, as identified

Finally, in order to be able to realize the overall goal of the Project (i.e., the establishment of an environmentally and socially sound project), environmental and social issues that were identified at this early stage of the Project must be appropriately addressed not only in the ESIA, but also during all other successive stages of the Project development.

14.0 REFERENCES

- Aktel Çevre Danışmanlık Müşavirlik ve Mühendislik Ltd. Şti. (2026). *Sivas Yağdonduran Güneş Enerji Santrali Projesi – Son Şekli Verilen ÇED Raporu*
- EBRD's Environmental and Social Policy, October 2024
- International Finance Corporation Performance Standards, 2012
- International Finance Corporation. (2013). *Good Practice Handbook on Cumulative Impact Assessment and Management*
- International Finance Corporation. (2023). *Good Practice Handbook: Land Acquisition and Involuntary Resettlement*.
- UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions, Paris, 20 October 2005.
- UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage, Paris, 17 October 2003.
- UNESCO, Convention on the Protection of World Cultural and Natural Heritage, Paris, 16 November 1972.
- UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export, and Transfer of Ownership of Cultural Property, Paris, 14 November 1970.
- IFC Performance Standards on Environmental and Social Sustainability (2012), PS 8 on Cultural Heritage (2014).
- Guidance and toolkit for impact assessments in a world heritage context:
<https://unesdoc.unesco.org/ark:/48223/pf0000382347>.

Signature Page

WSP Danışmanlık ve Mühendislik Ltd. Şti.

Gizem Altinkaya Kurtulmuş
Project Manager

Beyza Kozak
Project Director

GAK/BK

Registered in Türkiye Registration No. 53/3069

Vat No. 396 056 79 79

APPENDIX A

PROJECT STANDARDS

Current Environmental Laws and Regulations in Türkiye relevant to the Project

Current Environmental Laws and Regulations	Date and No of Issuing Official Gazette
Environment Law	11.08.1983, 18132
Permitting	
Regulation on Environmental Impact Assessment	29.07.2022, 31907
Regulation on Environmental Auditing	12.06.2021, 31509
Regulation on Environmental Permit and License	10.09.2014, 29115
Law on Use of Renewable Energy Resources for Electrical Energy Production	18.05.2005, 25819
Air Quality	
Regulation on Control of Air Pollution caused by Heating	13.01.2005, 25699
Regulation on Assessment and Management of Air Quality	06.06.2008, 26898
Regulation on Substances Depleting the Ozone Layer	07.04.2017, 30031
Regulation on Control of Exhaust Gas Emission	11.03.2017, 30004
Regulation on Control of Industrial Air Pollution	03.07.2009, 27277
Regulation on the Reduction in the Sulphur Content of Some Fuel Types	06.10.2009, 27368
Regulation on Controlling Odor Causing Emissions	19.07.2013, 28712
Regulation on Monitoring of Greenhouse Gases	17.05.2014, 29003
Communique on Monitoring and Reporting of Greenhouse Gases	22.07.2014, 29068
Communique on Continuous Emission Measurement Systems	12.10.2011, 28082
Water Quality	
Regulation on Water Pollution Control	31.12.2004, 25687
Groundwater Law	23.12.1960, 10688
Regulation on Protection of Groundwater against Pollution and Deterioration	07.04.2012, 28257
Regulation on Protection of Wetlands	04.04.2014, 28962
Regulation on Control of Pollution Caused by Dangerous Substances in Water and its Environment	26.11.2005, 26005
Regulation on Urban Wastewater Treatment	08.01.2006, 26047

Current Environmental Laws and Regulations	Date and No of Issuing Official Gazette
Regulation on Water Intended for Human Consumption	17.02.2005, 25730
Regulation on Surface Water Quality	30.11.2012, 28483
Regulation on the Protection of Drinking-Utility Water Basins	28.10.2017, 30224
Regulation on Protection of Waters against Pollution Caused by Nitrates from Agricultural Sources	23.07.2016, 29779
Regulation on Flood and Sedimentation Control	03.05.2019, 30763
Regulation on Preparation, Implementation and Follow-up of Basin Management Plans	17.10.2012, 28444
Communique on Water Pollution Control Regulation Sampling and Analysis Methodology	10.10.2009, 27372
Communique on Water Pollution Control Regulation Administrative Procedures	10.10.2009, 27372
Soil Quality	
Regulation on Pollutant Release and Transport Registration	04.12.2021, 31679
Law on Protection of Soil and Land Use	19.07.2005, 25880
Regulation on Control of Soil Pollution and Contaminated Lands by Point Sources	08.06.2010, 27605
Law on Pasture	28.02.1998, 23272
Waste Management	
Regulation on Waste Management	02.04.2015, 29314
Regulation on Control of Excavation Soil, Construction and Demolition Wastes	18.03.2004, 25406
Regulation on Control of Waste Batteries and Accumulators	31.08.2004, 25569
Regulation on Control of Vegetative Oils	06.06.2015, 29378
Regulation on Control of Medical Wastes	25.01.2017, 29959
Regulation on Control of End-of-Life Tires	25.11.2006, 26357
Regulation on Management of Waste Electrical and Electronic Goods	26.12.2022, 32055
Regulation on Management of Waste Oils	21.12.2019, 30985
Regulation on Control of End-of-Life Vehicles	30.12.2009, 27448

Current Environmental Laws and Regulations	Date and No of Issuing Official Gazette
Regulation on Landfills (Regular Storage of Wastes)	26.03.2010, 27533
Regulation on Control of Packaging Wastes	26.06.2021, 31523
Regulation on Control of Polychlorinated Biphenyls (PCBs) and Polychlorinated Terphenyls (PCTs)	27.12.2007, 26739
Regulation on Management of Radioactive Waste and Used Fuel	07.11.2023, 32362
Regulation on Zero Waste	12.07.2019, 30829
Regulation on the General Principles of Waste Pre-Treatment and Recovery Facilities	09.10.2021, 31623
Chemicals Management	
Regulation on the Prevention of Major Industrial Accidents and Reducing Their Effects	02.03.2019, 30702
Regulation on the Transportation of Dangerous Goods by Road	18.06.2022, 31870
Regulation on Safe Transportation of Radioactive Materials	08.07.2005, 25869
Regulation on the Classification, Labelling and Packaging of Materials and Mixtures	11.12.2013, 28848
Regulation on Registration, Evaluation, Permission and Restriction of Chemicals	23.06.2017, 30105
Noise Management	
Regulation on Control of Environmental Noise	30.11.2022, 32029
Regulation Related to Noise Emissions Generated by Equipment for Outdoor Use	30.12.2006, 26392
Type Approval Regulation on Exterior Noise Emissions and Exhaust Systems of Motor Vehicles	30.11.2000, 24246
Nature Conservation and Biodiversity	
Regulation on Wildlife Protection and Wildlife Enhancement Areas	08.11.2004, 25637
Law on Forestry	08.09.1956, 9402
National Parks Law	11.08.1983, 18132
Law on Animal Protection	01.07.2004, 25509
Regulation for Implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora	27.12.2001, 24623

Current Environmental Laws and Regulations	Date and No of Issuing Official Gazette
Energy Efficiency	
Law on Energy Efficiency	02.05.2007, 26510
Regulation on the Improvement of the Energy Sources and the Efficiency in the Energy Usage	27.10.2011, 28097
Cultural Heritage	
Law on Preservation of Cultural and Natural Assets (Law No. 2863)	23.07.1983, 18113
Principal Decision (No. 658)	-
Law on the Approval of the Convention for the Protection of the Intangible Cultural Heritage	19.01.2006
Regulation on Research, Drilling and Excavation of Cultural and Natural Assets	10.08.1984, 18485
Land Use	
Law on Soil Preservation and Land Utilization	19.07.2005, 25880
Pasture Law	28.02.1998, 23272
Expropriation Law	08.11.1983, 18215
Settlement Law	26.09.2006, 26301
Construction Law	09.05.1985, 18749
Resources Management	
Energy Efficiency Law	02.05.2007, 26510
Regulation on the Improvement of the Energy Sources and the Efficiency in the Energy Usage	27.10.2011, 28097
Energy Production	
Electricity Market Connection and System Use Regulation	28.01.2014, 28896
Electricity Market License Regulation	02.11.2013, 28809
Electricity Distribution System Regulation	15.04.2022, 31810
Regulation on Competitions Regarding Preliminary License Applications Made for Installation of Energy Generation Facilities Based on Wind and Solar Power	13.03.2017, 30065
Regulation on Electric Power Current Facilities	30.11.2000, 24246

Current Environmental Laws and Regulations	Date and No of Issuing Official Gazette
Regulations on Solar Power Generation Facilities	19.06.2011, 27969

Current Labour and H&S Laws and Regulations in Türkiye

Existing Labour and H&S Laws and Regulations	Date and No of Issuing Official Gazette
Laws	
Labour Law <i>(Aims to regulate the working conditions and work-related rights and obligations of employers and employees working within the confines of an employment contract.)</i>	10.06.2003, 25134
Occupational Health and Safety Law	30.06.2012, 28339
Regulations	
Regulation on Safety and Health Requirements Working with Display Screen Equipment	16.04.2013, 28620
Regulation on Occupational Health and Safety Services	29.12.2012, 28512
Regulation on Machine Guards	17.05.1983, 18050
Regulation on Machinery Safety	03.03.2009, 27158
Regulation on Protection of Workers from the Risks of Vibration	22.08.2013, 28743
Regulation on Protection of Workers from Noise Related Risks	28.07.2013, 28721
Regulation on Management of Dust	05.11.2013, 28812
Regulation on Health and Safety Signs	11.09.2013, 28762
Regulation on Health and Safety at Construction Works	05.10.2013, 28786
Regulation on Protection of Workers from the Risk of Explosive Environments	30.04.2013, 28633
Regulation on Health and Safety Precautions Regarding Working with Asbestos	25.01.2013, 28539
Regulation on Manual Handling	24.07.2013, 28717
Regulation on Principles and Procedures for Health and Safety Training of Employees	02.04.2026, 33212

Existing Labour and H&S Laws and Regulations	Date and No of Issuing Official Gazette
Regulation on Health and Safety Precautions Regarding Workplace Buildings and Their Annexes	17.07.2013, 28710
Regulation on Use of Personnel Protective Equipment in Workplaces	02.07.2013, 28695
Regulation on Health and Safety Conditions Regarding Use of Work Equipment	25.04.2013, 28628
Regulation on Health and Safety Regarding Temporary or Fixed-Term Works	23.08.2013, 28744
Personnel Protective Equipment Regulation	01.05.2019, 30761
Regulation on Health and Safety Precautions Regarding Working with Chemical Substances	12.08.2013, 28733
Regulations on the Prevention of Biological Exposure Risks	15.06.2013, 28678
Regulation on the Employment of Pregnant or Lactating Women, Children's Care Homes and Breastfeeding Rooms	16.08.2013, 28737
Regulation on the Procedures and Principles of the Employment of Children's and Young Workers	06.04.2004, 25425
Regulation on Health and Safety Risk Assessment	29.12.2012, 28512
First Aid Regulation	29.07.2015, 29429
Regulation on Protection of Buildings Against Fire	19.12.2007, 26735
Regulation on Work Stoppage in Workplaces	30.03.2013, 28603
Regulation on Emergency Cases in Workplaces	18.06.2013, 28681
Regulation on Health and Safety Precautions Regarding Working with Cancerogenic and Mutagenic Substances	06.08.2013, 28730
Regulation on Equipment and Protective Systems Used in Potentially Explosive Atmospheres	30.06.2016, 29758
Regulation on Occupational Hygiene Measurement, Testing and Analyses	27.01.2023, 32086
Regulation on the Duties, Authorities, Responsibilities and Trainings of Occupational Safety Specialists	29.12.2012, 28512
Regulation on the Duties, Authorities, Responsibilities and Trainings of Occupational Physicians and Other Healthcare Personnel	20.07.2013, 28713
Regulation on Working Hours as per the Labour Law	06.04.2004, 25425
Regulation on Overtime and Overtime Hours as per the Labour Law	06.04.2004, 25425

Existing Labour and H&S Laws and Regulations	Date and No of Issuing Official Gazette
Regulation on Working Hours that Cannot Be Divided into Weekly Working Days	06.04.2004, 25425
Regulation on Health and Safety Committees	18.01.2013, 28532

Other Applicable Legislation Relevant to the Project

Other Applicable Legislation Relevant to the Project	Date and No of Issuing Official Gazette
General Public Health Law	24.04.1930, 1489
Law on the Protection of Cemeteries	13.06.1994, 21959
Regulation on Preparation of Spatial Plans	14.06.2014, 29030
Unplanned Areas Construction Regulation	02.11.1985, 18916
Regulation on Workplace Establishment and Operating Licenses	10.08.2005, 25902
Regulation on Buildings to be Built on the Disaster Areas	14.07.2007, 26582
Türkiye Building Earthquake Regulation	18.03.2018, 30364
Regulation on the Obtaining, Processing and Control of the Sand, Gravel and Similar Materials	08.12.2007, 26724

International Agreements which Türkiye is a Party

International Convention / Protocol	Date and No of Issuing Turkish Official Gazette
European Cultural Convention; 19.12.1954	17.06.1957, 9635
International Convention for the Establishment of the European and Mediterranean Plan Protection Organization; Paris, 1951	10.08.1965
The Convention for the Protection of Cultural Property in the Event of Armed Conflict; 14.04.1954	08.11.1965, 12145
International Convention for the Protection of Birds; Paris, 1959	17.12.1966, 12480
Convention on Legal Responsibilities about the Nuclear Energy Field; 29.1.1960, and its addendum protocol dated 28.01.1964	13.06.1967, 12620
Radiation Protection Convention; Geneva, 1960	25.07.1968, 12959
Agreement on an International Energy Program; Paris, 1974	04.05.1981
Convention for the Protection of the World Cultural and Natural Heritage; Paris, 1972	14.2.1983, 17959
Convention on Long-Range Transboundary Air Pollution; Geneva, 1979	23.03.1983, 17996
The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention); Bern, opened for signature on 19.09.1979, entered into force on 01.06.1982	Ratification date: 02.05.1984 Entered into force: 01.09.1984
Protocol to the Convention on Long-Range Transboundary Air Pollution on the Financing of the Co-operative Program for Monitoring and Evaluation of the Long-Range Transmission of Air Pollutants in Europe; Geneva, 1984	23.07.1985, 18820
Convention on the Control of Transboundary Movements of Hazardous Waste and Disposal; Basel, 22.03.1989	15.05.1994, 21935
The Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention); entered into force on 21.12.1975	17.05.1994, 21937
Montreal Protocol on Substances That Deplete the Ozone Layer; Montreal, opened for signature on 16.09.1987, entered into force on 1.1.1989 (Revisions: 1990,London; 1991,Nairobi; 1992,Copenhagen; 1993,Bangkok; 1995,Vienna; 1997,Montreal; and 1999,Beijing)	28.12.1994, 22155
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); opened for signature on 3.3.1973, entered into force on 1.7.1975	20.06.1996, 22672 (entered into force on 22.12.1996)

International Convention / Protocol	Date and No of Issuing Turkish Official Gazette
United Nations Convention to Combat Desertification; Paris, 17.6.1994, entered into force in December 1996	1997
Biodiversity Convention; opened for signature at the Earth Summit in Rio de Janeiro on 5.6.1992, entered into force on 29.12.1993	27.12.1996, 22860
Convention on the Transboundary Effects of Industrial Accidents	18.03.1992
The Stockholm Convention on Persistent Organic Pollutants	30.07.2009, 27304
United Nations Framework Convention on Climate Change; 2004, and Kyoto Protocol on Global Warming; 2008 <i>General principle of Kyoto is the signatory parties should decrease their GHG emissions by 5.2% of the 2009 amount till the end of 2012. After 2012, a new agreement and new emission limits will come into picture.</i>	Turkish Parliament accepted to be a signatory of Kyoto Protocol in February 2009. However, Türkiye is not a party in the Protocol, thus has no commitment, until the end of 2012.
United Nations Educational, Scientific, and Cultural Organisation ("UNESCO"), Convention on the Protection and Promotion of the Diversity of Cultural Expressions, Paris, 20 October 2005	2 November 2017
UNESCO, Convention for the Safeguarding of the Intangible Cultural Heritage, Paris, 17 October 2003	27 March 2006
UNESCO, Convention on the Protection of World Cultural and Natural Heritage, Paris, 16 November 1972	16 March 1983
UNESCO, Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, Paris, 14 November 1970	21 April 1981
United Nations Framework Convention on Climate Change., Paris Climate Agreement. Paris, 4 November 2016	The Law Regarding the Approval of the Paris Agreement was published in the Official Gazette dated 7 October 2021 and numbered 31621

International Labour Organization (“ILO”) Conventions Ratified by Türkiye

ILO Conventions
Unemployment Convention, 1919
Right of Association (Agriculture) Convention, 1921
Weekly Rest (Industry) Convention, 1921
Minimum Wage-Fixing Machinery Convention, 1928
Forced Labour Convention, 1930
Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934
Officers' Competency Certificates Convention, 1936
Shipowners' Liability (Sick and Injured Seamen) Convention, 1936
Food and Catering (Ships' Crews) Convention, 1946
Certification of Ships' Cooks Convention, 1946
Medical Examination (Seafarers) Convention, 1946
Medical Examination of Young Persons (Industry) Convention, 1946
Final Articles Revision Convention, 1946
Labour Inspection Convention, 1947
Freedom of Association and Protection of the Right to Organise Convention, 1948
Employment Service Convention, 1948
Accommodation of Crews Convention (Revised), 1949
Labour Clauses (Public Contracts) Convention, 1949
Protection of Wages Convention, 1949
Fee-Charging Employment Agencies Convention (Revised), 1949
Right to Organise and Collective Bargaining Convention, 1949
Minimum Wage Fixing Machinery (Agriculture) Convention, 1951
Equal Remuneration Convention, 1951
Social Security (Minimum Standards) Convention, 1952
Abolition of Forced Labour Convention, 1957
Seafarers' Identity Documents Convention, 1958
Discrimination (Employment and Occupation) Convention, 1958
Radiation Protection Convention, 1960
Final Articles Revision Convention, 1961
Equality of Treatment (Social Security) Convention, 1962
Guarding of Machinery Convention, 1963
Employment Policy Convention, 1964
Maximum Weight Convention, 1967

ILO Conventions
Accommodation of Crews (Supplementary Provisions) Convention, 1970
Prevention of Accidents (Seafarers) Convention, 1970
Workers' Representatives Convention, 1971
Minimum Age Convention, 1973
Human Resources Development Convention, 1975
Tripartite Consultation (International Labour Standards) Convention, 1976
Seafarers' Annual Leave with Pay Convention, 1976
Labour Relations (Public Service) Convention, 1978
Occupational Safety and Health (Dock Work) Convention, 1979
Hours of Work and Rest Periods (Road Transport) Convention, 1979
Occupational Safety and Health Convention, 1981
Termination of Employment Convention, 1982
Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983
Occupational Health Services Convention, 1985
Health Protection and Medical Care (Seafarers) Convention, 1987
Repatriation of Seafarers Convention (Revised), 1987
Safety and Health in Construction Convention, 1988
Safety and Health in Mines Convention, 1995
Worst Forms of Child Labour Convention, 1999
Promotional Framework for Occupational Safety and Health Convention, 2006
Unemployment Convention, 1919

Relevant European Regulations

European Regulations	
Environmental Issues	
Impact Assessment	■ Council Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment
Air Quality	■ Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control). Directive 2010/75/EU replaces definitively, with effect from 7 January 2014 ■ Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe ■ Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC ■ Regulation (EU) 2024/590 of the European Parliament and of the Council of 7 February 2024 on substances that deplete the ozone layer, and repealing Regulation (EC) No 1005/2009 ■ Directive (EU) 2016/802 of the European Parliament and of the Council of 11 May 2016 relating to a reduction in the sulphur content of certain liquid fuels (codification) ■ Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC
Energy Conservation	■ Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 ■ Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) ■ IPPC Reference Document on Best Available Techniques for Energy Efficiency. February 2009 (corrected version as of 09/2021)
Water and Wastewater Quality	■ Council Directive 91/271/EEC of 21 May 1991 Concerning Urban Wastewater Treatment ■ Directive (EU) 2020/2184 of the European Parliament and of the Council of 16 December 2020 on the quality of water intended for human consumption ■ Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration

European Regulations	
	■ Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration ■ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy ■ Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council
Water Conservation	■ Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy ■ Directive 2008/105/EC of the European Parliament and of the Council of 16 December 2008 on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council
Hazardous Materials Management	■ Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC ■ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 ■ Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 ■ Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods
Waste Management	■ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives

European Regulations	
	■ Directive 94/62/EC of the European Parliament and of the Council of 20 December 1994 on packaging and packaging waste ■ Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) ■ Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment ■ Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC ■ Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives ■ Directive 2000/53/EC of the European Parliament and of 18 September 2000 on end-of life vehicles ■ 32012L0019: Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)
Noise	■ Council Directive of 6 February 1970 on the approximation of the laws of the Member States relating to the permissible sound level and the exhaust system of motor vehicles ■ Directive 2000/14/EC of the European Parliament and of the Council of 8 May 2000 on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors ■ Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise
Soil Quality	■ Directive 2004/35/CE of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage
Nature Conservation and Biodiversity	■ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ■ Council Decision 98/145/EC of 12 February 1998 on the approval, on behalf of the European Community, of the amendments to Appendices I and II to the Bonn Convention on the conservation of migratory species of wild animals as decided by the fifth meeting of the Conference of the parties to the Convention ■ Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds
Occupational and Community Health and Safety Issues	

European Regulations	
Occupational and Community Health and Safety	■ Directive 2009/104/EC of the European Parliament and of the Council of 16 September 2009 concerning the minimum safety and health requirements for the use of work equipment by workers at work (second individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) ■ Council Directive 89/654/EEC of 30 November 1989 concerning the minimum safety and health requirements for the workplace first individual directive within the meaning of Article 16 (1) of Directive 89/391/EEC) ■ Council Directive 89/655/EEC of 30 November 1989 concerning the minimum safety and health requirements for the use of work equipment by workers at work (amending directives 95/63/EC and 2001/45/EC) ■ Council Directive 89/656/EEC of 30 November 1989 on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace ■ Directive 2009/148/EC of the European Parliament and of the Council of 30 November 2009 on the protection of workers from the risks related to exposure to asbestos at work ■ Council Directive 90/269/EEC of 29 May 1990 on the minimum health and safety requirements for the manual handling of loads where there is a risk particularly of back injury to workers ■ Council Directive 90/270/EEC of 29 May 1990 on the minimum safety and health requirements for work with display screen equipment ■ Directive 2004/37/EC of the European Parliament and of the Council of 29 April 2004 on the protection of workers from the risks related to exposure to carcinogens or mutagens at work ■ Directive 2000/54/EC of the European Parliament and of the Council of 18 September 2000 on the protection of workers from risks related to exposure to biological agents at work ■ Council Directive 92/57/EEC of 24 June 1992 on the implementation of minimum safety and health requirements at temporary or mobile construction sites ■ Council Directive 92/58/EEC of 24 June 1992 on the minimum requirements for the provision of safety and/or health signs at work ■ Council Directive 92/85/EEC of 19 October 1992 on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding ■ Directive 1999/92/EC of the European Parliament and of the Council of 16 December 1999 on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres

European Regulations	
	■ Directive 2002/44/EC of the European Parliament and of the Council of 25 June 2002 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (vibration) ■ Directive 2003/10/EC of the European Parliament and of the Council of 6 February 2003 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (noise) ■ Directive 2004/40/EC of the European Parliament and of the Council of 29 April 2004 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) ■ Commission Directive 2000/39/EC of 8 June 2000 establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work ■ Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work ■ Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work ■ Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC
Other	
Other	■ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment ■ Directive 2010/75/EC of the European Parliament and of the Council of 24 November 2010 concerning industrial emissions (integrated pollution prevention and control)

Air Quality

Ambient Air Quality Standards*

Pollutant	Time/ Averaging Period	Maximum Allowable Limit			
		EU ¹	Turkish ²	IFC / WHO ³	Project Standards
SO ₂ (µg/m ³)	Hourly	350	470 (for 2015) 440 (for 2016) 410 (for 2017) 380 (for 2018) 350 (for 2019-2023) 350 (2024 and after)	-	350
	24 hour	125	225 (for 2015) 200 (for 2016) 175 (for 2017) 150 (for 2018) 125 (for 2019-2023) 125 (2024 and after)	125 (Interim target-1) 50 (Interim target-2) 20 (guideline)	125
	LTLV ⁵	-	60	-	60
	Yearly and winter season (Oct 1 st – March 31 st) (for wildlife and ecosystem)	-	20	-	20
NO ₂ (µg/m ³)	Hourly	200	280 (for 2016) 270 (for 2017) 260 (for 2018) 250 (for 2019-2023) 200 (for 2024 and after)	200 (guideline)	200

Pollutant	Time/ Averaging Period	Maximum Allowable Limit			
		EU ¹	Turkish ²	IFC / WHO ³	Project Standards
	Yearly	40	52 (for 2016) 48 (for 2017) 44 (for 2018) 40 (for 2019-2023) 40 (for 2024 and after)	40 (guideline)	40
PM₁₀ (µg/m³)	24 hour	50	80 (for 2016) 70 (for 2017) 60 (for 2018) 50 (for 2019-2023) 50 (for 2024 and after)	150 (Interim target-1) 100 (Interim target-2) 75 (Interim target-3) 50 (guideline)	50
	Yearly	40	52 (for 2016) 48 (for 2017) 44 (for 2018) 40 (for 2019-2023) 40 (for 2024 and after)	70 (Interim target-1) 50 (Interim target-2) 30 (Interim target-3) 20 (guideline)	40
Fine particles (PM_{2.5}, µg/m³)	Yearly	25 (effective from 1 January 2015) 20 (effective from 1 January 2020) ¹	-	35 (Interim target-1) 25 (Interim target-2) 15 (Interim target-3) 10 (guideline)	20
	24 hour	-	-	75 (Interim target-1) 50 (Interim target-2) 37.5 (Interim target-3) 25 (guideline)	75
Settled Dust (mg/m²/day)	24 hour	-	390	-	390
	Yearly	350	210	-	210

* Türkiye is a candidate country in joining European Union and thus along with other environmental requirements, air quality limit values explained in the regulations of Türkiye have been aligned to the EU standards. IFC General EHS Guidelines (i.e., EHS Guidelines: Environmental - Air Emissions and Ambient Air Quality) states that IFC air quality standards will be applied in the absence of national

relevant ambient quality guidelines and standards. Therefore, Turkish regulatory air quality limit values will be taken into consideration in assessing Project's possible air quality impacts.

¹ Directive 2008/50/EC, 21 May 2008, ambient air quality and cleaner air

² Regulation on Control of Industrial Air Pollution

³ IFC General Environmental, Health, and Safety (EHS) Guidelines (WHO stands for World Health Organization)

⁴ Heavy metals are maximum allowable limits from the total content of the PM10 fraction averaged over one year. Limits are from Directive 2004/107/EC

⁵ LTLV: Long term limit value

Limits for Atmospheric Emissions from Stationary Sources

Source	Pollutant	Turkish ¹	IFC ²	Project Standards
Diesel Generators	NO _x (mg/Nm ³)	1,000	1,460 ³ 1,850 ⁴	1,000
	SO ₂ (mg/Nm ³)	900	. ⁵	900
	PM (mg/Nm ³)	75	50	50
	CO (mg/Nm ³)	250	-	250

¹ Regulation on Control of Industrial Air Pollution² IFC General Environmental, Health, and Safety (EHS) Guidelines³ IFC Standard: exhaust bore size diameter [mm] < 400⁴ IFC Standard: exhaust bore size diameter [mm] > or = 400⁵ 1.5 percent Sulphur or up to 3.0 percent Sulphur

Water Quality

Surface Water Chemical and Physiochemical Parameters Criteria¹

Water Quality Parameters		Water Quality Classes ^(a)		
		I (very good)	II (good)	III (mediocre)
Colour (m-1)	RES 436 nm:	≤ 1.5	3.0	> 4.3
	RES 525 nm:	≤ 1.2	2.4	> 3.7
	RES 620 nm:	≤ 0.8	1.7	2.5
pH		6-9	6-9	6-9
Conductivity (µS/cm)		< 400	1000	> 1000
Oil and Grease (mg/L)		< 0.2	0.3	> 0.3
Dissolved Oxygen (mg/L)		> 8	6	< 6
Chemical Oxygen Demand (COD) (mg/L)		< 25	50	> 50
Biochemical Oxygen Demand (BOD ₅) (mg/L)		< 4	8	> 8
Ammonium Nitrogen (mg NH ₄ ⁺ -N/L)		< 0.2	1	> 1
Nitrate-N (mg NO ₃ ⁻ -N/L)		< 3	10	> 10
Total Kjeldahl nitrogen (mg N/L) (b)		< 0.5	1.5	> 1.5
Total Nitrogen (mg N/L) (c)		< 3.5	11.5	> 11.5
Orthophosphate Phosphorus (mg o-PO ₄ -P/L)		< 0.05	0.16	> 0.16
Total Phosphorous (mg P/L)		< 0.08	0.2	> 0.2
Fluoride (µg/L)		≤ 1000	1500	> 1500
Manganese (µg/L)		≤ 100	500	> 500
Selenium (µg/L)		≤ 10	15	> 15
Sulphur (µg/L)		≤ 2	5	> 5

¹Appendix 5 Table 2, Regulation on Surface Water Quality, Changed in the Official Gazette on 10/08/2016- No. 29797

(a) Water use purposes according to their quality classes:

I. Class- High quality water (I. class water quality means the condition of the water is "Very Good".);

- 1) Surface water with a high potential of being drinking water,
- 2) Water that can be used for recreational purposes, including those such as swimming that include body contact,
- 3) Water that can be used for trout farming,
- 4) Water that can be used for animal husbandry and agricultural needs.

II. Class- Water with low pollution levels (II. Class water quality means the condition of the water is "Good".);

- 1) Surface Waters with potential to be drinking water,
- 2) Water which can be used for recreational purposes,
- 3) Water which can be used for farming fish other than trout,
- 4) Irrigation water upon the condition that it reaches the criteria of the irrigation water quality of the respective legislation.

III. Class- Polluted water (III. Class water quality means the condition of the water is "Mediocre".;

Facilities needing water, with the exception of those for food and textile, once the water has undergone the appropriate treatment it can be used for water product farming and industry.

(b) TKN: NH₃-N + Organic Nitrogen

(c) TN: TKN + NO₃-N + NO₂-N

Maximum Permissible Environmental Quality Standards for River/Lakes According to Regulation on Surface Water Quality

Parameters	Unit	Yearly Annual Limit Values	Maximum Limit Values
Aluminum (Al)	mg/L	0.0022	0.027
Antimony (Sb)	mg/L	0.0078	0.103
Arsenic (As)	mg/L	0.053	0.053
Barium (Ba)	mg/L	0.68	0.68
Beryllium (Be)	mg/L	0.0025	0.0039
Biochemical Oxygen Demand (BOD5)	mg/L	50	50
Boron (B)	mg/L	0.707	1.472
Cadmium (Cd)	mg/L	<0,00008 (Class 1) 0,00008 (Class 2) 0,00009 (Class 3) 0,00015 (Class 4) 0,00025 (Class 5)	< 0,00045 (Class 1) 0,00045 (Class 2) 0,0006 (Class 3) 0,0009 (Class 4) 0,0015 (Class 5)
Chemical Oxygen Demand (COD)	mg/L	125	125
Chromium (Cr)	mg/L	0.0016	0.142
Cobalt (Co)	mg/L	0.0003	0.0026
Copper (Cu)	mg/L	0.0016	0.0031
Cyanide	mg/L	1	1
Cyanide, Weak Acid Dissociable	mg CN/L	0.5	0.5
Iron (Fe)	mg/L	0.036	0.101
Lead (Pb)	mg/L	0.0012	0.014
Mercury (Hg)	µg/L		0.07
Nickel (Ni)	mg/L	0.004	0.034
Silicon (Si)	mg/L	1.83	1.83
Silver (Ag)	mg/L	0.0015	0.0015
Tin (Sn)	mg/L	0.013	0.013
Titanium (Ti)	mg/L	0.026	0.042
Total Suspended Solids	mg/L	50	50
Vanadium (V)	mg/L	0.0016	0.097
Zinc (Zn)	mg/L	0.0059	0.231
Oil and Grease	mg/L	10	10
1,2-dichloroethane	µg/L	10	

Irrigation Water Classification³⁷

Salinity Hazard Class	EC ₂₅ (µS/cm)	Irrigation Water Class	Sodium Hazard Class	SAR	Irrigation Water Class
C1	100-250	Low Salinity	S1	<10	Low Sodium
C2	250-750	Medium Salinity	S2	10-18	Medium Sodium
C3	750-2250	High Salinity	S3	18-26	High Sodium
C4	>2250	Very High Salinity	S4	>26	Very High Sodium

Groundwater Monitoring Parameters

Parameter	Unit	Limit Value
Arsenic	mg/L	-
Cadmium	mg/L	-
Lead	mg/L	-
Mercury	µg/L	-
Ammonium	mg/L	-
Chloride	mg/L	-
Sulphate (Dissolved)	mg/L	-
Trichloroethylene	µg/L	-
Tetrachloroethylene	µg/L	-
Electrical Conductivity	µS/cm	-
Nitrite	mg/L	-
Total Phosphorus	mg P/L	-
Nitrate	mg/L	50
Pesticides	mg/L	0.0001
Pesticides, Total	mg/L	0.0005

Effluent Wastewater Standards for Domestic Wastewater

Parameters	Unit	Turkish Standard ¹ (Population: <2000)	EU Guid. ²	IFC Std. ³	Project Standards
		Composite sample – 2 hr			
pH index	mg/l	6-9	-	6-9	6-9
Biochemical Oxygen Demand	mg/l	50	25	30	25

³⁷ Richards, L. A. (1954). Diagnosis and Improvement of Saline and Alkali Soils. Washington D.C.: US Department of Agriculture.

Parameters	Unit	Turkish Standard ¹ (Population: <2000)	EU Guid. ²	IFC Std. ³	Project Standards
		Composite sample – 2 hr			
Chemical Oxygen Demand	mg/l	160	125	125	125
Total nitrogen	mg/l	-	15	10	10
Total phosphorus	mg/l	-	2	2	2
Total Suspended Solids	mg/l	60	35	50	35
Oil and grease	mg/l	-	-	10	10
Total coliform bacteria	MPN ⁵ /100 ml	-	-	400 ⁴	400

¹ Regulation on the Control of Water Pollution concerning domestic wastewater discharge limit value

² EU standards from Directive 91/271/EEC concerning urban wastewater treatment

³ IFC General Environmental, Health, and Safety (EHS) Guidelines

⁴ Not applicable to centralized, municipal, wastewater treatment systems which are included in EHS Guidelines for Water and Sanitation.

⁵ MPN = Most Probable Number

Drinking Water Standards

Parameter	Units	Turkish Standard ¹	EU Standard ²	WHO	Project Standards
Microbiological Parameters					
<i>E. coli</i>	number/250 ml	0	0	-	0
<i>Enterococcus</i>	number/250 ml	0	0	-	0
Coliform Bacteria	number/250 ml	0	-	-	0
<i>P. aeruginosa</i>	number/250 ml	0	-	-	0
Sulphide-reducing bacteria with anaerobic spores	number/250 ml	0	-	-	0
Pathogen <i>Staphylococcus</i>	number/250 ml	0	-	-	0
Maximum in the sample from the source: Colony count at 22 °C Colony count at 37 °C	Number/ml	20 5	-	-	20 5
Chemical Parameters					
Antimony (Sb)	mg/l	0.005	0.005	0.02	0.005
Acrylamide	mg/l	0.0001	0.0001	0.0005	0.0001
Arsenic (As)	mg/l	0.01	0.01	0.01	0.01
Benzene	mg/l	0.001	0.001	0.01	0.01
Benzopyrene	µg/l	0.01	0.01	0.7	0.01
Boron (B)	mg/l	1.0	1.0	2.4	1.0
Bromate	µg/l	10	10	10	10
Cadmium (Cd)	mg/l	0.005	0.005	0.003	0.003
Chromium (Cr)	mg/l	0.05	0.05	0.05	0.05
Copper (Cu)	mg/l	2	2	2	2
Cyanide (CN)	mg/l	0.05	0.05	-	0.05

Parameter	Units	Turkish Standard ¹	EU Standard ²	WHO	Project Standards
1,2-Dichloroethane	µg/l	3	3	30	3
Epichlorohydrin	µg/l	0.1	0.1	0.4	0.1
Fluoride (F ⁻)	mg/l	1.5	1.5	1.5	1.5
Lead (Pb)	mg/l	0.01	0.01	0.01	0.01
Mercury (Hg)	mg/l	0.001	0.001	0.006	0.001
Nickel (Ni)	mg/l	0.02	0.02	0.07	0.02
Nitrate (as NO ₃ ⁻)	mg/l	50	50	50	50
Nitrite (as NO ₂ ⁻)	mg/l	0.5	0.5	3	0.5
Pesticides	µg/l	0.1	0.1	-	0.1
Total pesticides	µg/l	0.5	0.5	-	0.5
Polycyclic aromatic hydrocarbons	µg/l	0.1	0.1	-	0.1
Selenium (Se)	mg/l	0.01	0.01	0.04	0.01
Tetrachloroethane and Trichloroethane	µg/l	10	10	40, 20	10
Trihalomethanes-total	µg/l	100	100	-	100
Vinyl chloride	µg/l	0.5	0.5	0.3	0.3
Radiological Quality					
Tritium	Bq/l	100	100	-	100
Total indicator dosage	mSv/year	0.1	0.1	-	0.1
Indicator Parameters					
Aluminium	µg/l	200	200	-	200
Ammonium	mg/l	0.50	0.50	-	0.50
Chloride	mg/l	250	250	-	250
<i>Clostridium perfringens</i>	number/100 ml	0	0	-	0
Colour		Acceptable to	Acceptable to	-	Acceptable to consumers and no

Parameter	Units	Turkish Standard ¹	EU Standard ²	WHO	Project Standards
		consumers and no abnormal change	consumers and no abnormal change		abnormal change
Conductivity	$\mu\text{S cm}^{-1}$ at 20°C	2,500	2,500	-	2,500
Hydrogen ion concentration	pH units	≥ 6.5 and ≤ 9.5	≥ 6.5 and ≤ 9.5	-	≥ 6.5 and ≤ 9.5
Iron	$\mu\text{g/l}$	200	200	-	200
Manganese	$\mu\text{g/l}$	50	50	-	50
Odour		Acceptable to consumers and no abnormal change	Acceptable to consumers and no abnormal change	-	Acceptable to consumers and no abnormal change
Oxidizability	mg/l O_2	5.0	5.0	-	5.0
Sulphate	mg/l	250	250	-	250
Sodium	mg/l	200	200	-	200
Taste		Acceptable to consumers and no abnormal change	Acceptable to consumers and no abnormal change	-	Acceptable to consumers and no abnormal change
Colony count 22°C		No abnormal change	No abnormal change	-	No abnormal change
Coliform bacteria	number/100 ml	0	0	-	0
Total organic carbon (TOC)		No abnormal change	No abnormal change	-	No abnormal change
Turbidity		Acceptable to consumers and no	Acceptable to consumers and no	-	Acceptable to consumers and no

Parameter	Units	Turkish Standard ¹	EU Standard ²	WHO	Project Standards
		abnormal change	abnormal change		abnormal change

¹ Regulation Concerning Water for Human Consumption

² EU Standard is EU Directive 98/83/EC on Drinking Water Quality

³ This value is a guide value, not a maximum allowable limit value.

Notes: The table shows upper limit values, unless indicated otherwise as a range or lower limit value.

EU Standard for radioactivity expressed as Tritium 100 Bq/l with a total indicative dose of 0.1 mSv/year

Soil Quality

Project baseline data will be used as Project Standard

Soil Standards¹

Measured Parameters	Units	National Standards			
		Soil ingestion and absorpti on through skin contact	Inhalation of fugitive dust in the external environme nt	Transport of pollutants to groundwater and use of groundwater for drinking ² (mg/kg oven-dry soil)	
				SF = 10	SF = 1
Extractable Metals / Major Cations					
Antimony	mg/kg	31	-	2	0.2
Arsenic	mg/kg	0.4	471	3	0.3
Barium	mg/kg	15643	433702	288	29
Beryllium	mg/kg	0.1	843	0.1	0.01
Cadmium	mg/kg	70	1124	27	3
Chromium +3	mg/kg	117321	-	-	-
Chromium +6	mg/kg	235	24	10	1
Total Chromium	mg/kg	235	24	900,000	1
Cobalt	mg/kg	23	225	5	0.5
Copper	mg/kg	3129	-	514	51
Lead	mg/kg	400	-	135	14
Mercury	mg/kg	23	-	3	0.6
Molybdenum	mg/kg	391	-	14	1
Nickel	mg/kg	1564	-	13	1

Measured Parameters	Units	National Standards			
		Soil ingestion and absorpti on through skin contact	Inhalation of fugitive dust in the external environme nt	Transport of pollutants to groundwater and use of groundwater for drinking ² (mg/kg oven-dry soil)	
				SF = 10	SF = 1
Selenium	mg/kg	391	-	0.5	0.05
Silver	mg/kg	391	-	16	2
Thallium	mg/kg	5	-	2	0.2
Tin	mg/kg	46929	-	54794	5479
Titanium	mg/kg	312857	-	-	146,029
Vanadium	mg/kg	548	-	2556	256
Zinc	mg/kg	23464	-	6811	681
BTEX					
Benzene	mg/kg	12	-	0.006	0.0006
Toluene	mg/kg	6257	-	5	0.5
Ethylbenzene	mg/kg	7821	-	4	0.4
Meta-¶-Xylene	mg/kg	156429	-	444	80
Ortho-Xylene	mg/kg	156429	-	297	81
Sum of xylenes	mg/kg	15643	-	81	8
Halogenated Volatile Organic Compounds					
Vinyl Chloride	mg/kg DW	0.4	-	0.0002	0.00002

Measured Parameters	Units	National Standards			
		Soil ingestion and absorption through skin contact	Inhalation of fugitive dust in the external environment	Transport of pollutants to groundwater and use of groundwater for drinking ² (mg/kg oven-dry soil)	
				SF = 10	SF = 1
Chloromethane	mg/kg DW	49	-	0.01	0.001
Methyl Bromide	mg/kg DW	110	-	0.1	0.01
Chloroform	mg/kg DW	105	-	0.8	0.08
1,2 - dichloroethane	mg/kg DW	7	-	21	2
Cis 1,3-dichloropropane	mg/kg DW	6	-	0.003	0.0003
Bromo dichloromethane	mg/kg DW	10	-	0.003	0.0003
1,3- Di chloropropane	mg/kg DW	6	-	0.003	0.0003
1,1,2-Trichloroethane	mg/kg DW	11	-	0.004	0.0004
Dibromochloromethane	mg/kg DW	6	-	0.003	0.0003
1,1,1,2-Tetrachloroethane	mg/kg DW	3	-	0.001	0.0001
Chlorobenzene	mg/kg DW	1564	-	5	0.5
Bromoform	mg/kg DW	61	-	0.3	0.03
1,1,2,2-Tetrachloroethane	mg/kg DW	3	-	0.001	0.0001
1,2-Dichlorobenzene	mg/kg DW	7039	-	11	1
1,4-dichlorobenzene	mg/kg DW	118	-	3	0.3

Measured Parameters	Units	National Standards			
		Soil ingestion and absorption through skin contact	Inhalation of fugitive dust in the external environment	Transport of pollutants to groundwater and use of groundwater for drinking ² (mg/kg oven-dry soil)	
				SF = 10	SF = 1
1,2-Dichloropropane	mg/kg DW	18	-	0.1	0.01
Nonhalogenated Volatile Organic Compounds					
Styrene	mg/kg DW	15643	-	0.2	0.02
Methyl Tertiary-Butyl Ether	mg/kg DW	355	-	0.08	0.008
Polycyclic Aromatic Hydrocarbons (PAHs)					
Naphthalene	mg/kg DW	1147	-	28	3
Aliphatic Fractions of Petroleum Hydrocarbons					
Total Petroleum Hydrocarbons (Aliphatic) (EC5 - EC8)	mg/kg	4693	-	4	0.4
Total Petroleum Hydrocarbons (Aliphatic) (EC8> - EC16)	mg/kg	7821	-	7	0.7
Total Petroleum Hydrocarbons (Aliphatic) (EC16> - EC35)	mg/kg	156429	-	146	15
Aromatic Fractions of Petroleum Hydrocarbons					
Total Petroleum Hydrocarbons (Aromatic) (EC5 - EC9)	mg/kg	15643	-	15	1
Total Petroleum Hydrocarbons (Aromatic) (EC9> - EC16)	mg/kg	1564	-	1	0.1
Total Petroleum Hydrocarbons (Aromatic) (EC16> - EC35)	mg/kg	2346	-	2	0.2

¹ Regulation on Control of Soil Pollution and Contaminated Lands by Point Sources

² If the distance to the aquifer is less than 3m, the aquifer is cracked or karstic, or the pollution source area is 10 hectares or more, the dilution factor SF is taken as "1"; in other cases, SF should be taken as "10".

Noise Standards

Noise Standards (dBA)^{1, 2}

Pollutant / Source	Receptor	IFC		Regulation on Control of Environmental Noise			Project Standards
		Day (07:00-22:00)	Night (22:00-07:00)	Day (07:00-19:00)	Evening (19:00-23:00)	Night (23:00-07:00)	
Resources	Industrial facilities, transportation sources	-	-	65	60	55	For Project areas (since classified as industrial facilities, transportation sources): 65 (day) 60 (evening) 55 (night)
	Businesses			Background Noise Levels + 5		Background Noise Levels + 3	
	In case of multiple businesses			Background Noise Levels + 7		Background Noise Levels + 5	
	Residential; institutional; educational	55	45	-	-	-	For settlement areas during all phases of Project: 55 (day) 45 (night)
	Industrial; commercial	70	70	-	-	-	

¹ Regulation on Control of Environmental Noise

² According to the IFC General EHS Guideline Noise measurement levels sourced from Project activities should not exceed the levels presented above or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.

Vibration Standards

The maximum permissible values for ground vibrations generated by pile driving and similar vibration-generating operations in construction, and by construction machinery, outside the nearest structure (in the frequency bands between 1 Hz and 80 Hz)¹

	Maximum Allowed Vibration Velocity	
	Continuous Vibration	Intermittent Vibration
Residential Areas	5	10
Commercial Areas	15	30
Historical and Natural Structures ²	2	5

¹ Regulation on Control of Environmental Noise

² These limit values determined for historical and natural structures may be limited by precise, comprehensive vibration measurements and scientific studies to be carried out on-site

The highest allowable values of ground vibrations to be generated by railway and road transportation vehicles, workplaces and industrial facilities in the nearest structure and ground vibrations to be generated by machinery and equipment inside the building¹

Structures	Vibration Frequency (Hz)	Maximum Permissible Vibration Rate (rms value (mm/s))
In Residences	1	1.5
	8-100	0.3
In Offices	1	3.5
	8-100	0.6
In Historical and Natural Structures	1	0.8
	8-100	0.1

¹ Regulation on Control of Environmental Noise

ICNIRP Exposure Limits for General Public Exposure to Electric and Magnetic Fields¹

Frequency	Electric field (V/m)	Magnetic Field (μT)
50 Hz	5000	100
60 Hz	4150	83

¹ IFC Environmental, Health and Safety Guidelines for Electric Power Transmission and Distribution

APPENDIX B

BIODIVERSITY SURVEY PLAN

APPENDIX C

SCOPING LEAFLET

Proje Hakkında

Sivas Güneş Enerji Santrali (GES) Projesi, Sivas ili Kangal ilçesi sınırları içerisinde yer alan Mancılık, Havuz, Beyyurdu ve Akpınar köyleri mevkiinde planlanan büyük ölçekli bir güneş enerjisi üretim projesidir. İnşaat aşamasının 36 ayda tamamlanması planlanmaktadır. Proje kapsamında yaklaşık 1.000 MW kurulu güce sahip, monokristal (Mono-C Silikon Çift Yüzlü PERC) fotovoltaik (PV) teknolojiye dayalı bir güneş enerji santralinin kurulması ve 25 yıl süreyle işletilmesi planlanmaktadır. Projenin tam kapasiteyle işletilmesi halinde yıllık yaklaşık 1.752 GWh elektrik enerjisi üretimi öngörülmektedir.

Proje Alternatifleri

Proje'nin hayata geçirilmesi, yaklaşık 500.000 kişinin yıllık elektrik ihtiyacını karşılayabilecek üretim kapasitesiyle Türkiye'nin yenilenebilir enerji payını artırarak dışa bağımlılığın azaltılmasına, enerji güvenliğine ve sürdürülebilir kalkınma hedeflerine önemli katkılar sağlayacaktır. Buna karşılık, Proje'nin gerçekleştirilmemesi halinde yenilenebilir enerji üretim potansiyeli kullanılamayacak; bu durum enerji talebinin karşılanmasında dışa bağımlılığın devam etmesine ve enerji arz güvenliği açısından risklerin artmasına yol açabilecektir.

ÇSED Süreci

Çevresel ve Sosyal Etki Değerlendirmesi (ÇSED), ulusal mevzuata ek olarak uluslararası standartlar doğrultusunda yürütülen kapsamlı bir çalışmadır. Bu süreç; projenin kamulaştırma, inşaat, işletme ve kapanış aşamalarında çevre ve toplum üzerindeki olası etkilerinin belirlenmesini ve ortaya çıkabilecek olumsuz etkilerin etkin bir şekilde yönetilmesini amaçlamaktadır. ÇSED, yürürlükteki Çevresel Etki Değerlendirmesi (ÇED) sürecine ek olarak yürütülmekte olup, ÇED onay sürecini tamamlayıcı nitelikte ve daha geniş kapsamlı bir değerlendirme sunan bir çalışmadır.

Çevresel ve sosyal etkilerin belirlenmesi sürecinde, alanında uzman yerli ve yabancı bağımsız danışmanlar ile akademisyenler görev alacaktır. ÇSED kapsamında ele alınacak konular, ön risk değerlendirmesi ve kapsam belirleme çalışmaları ile belirlenecek; ardından bu başlıkların her biri için sahada detaylı incelemeler gerçekleştirilecektir. Bu çerçevede; hava kalitesi, gürültü, toprak ve su kaynakları ile biyolojik çeşitlilik gibi çevresel unsurların yanı sıra arazi kullanımı, kültürel miras, istihdam olanakları, iş sağlığı ve güvenliği ile halkın sağlık, emniyet ve güvenliği gibi sosyal konular da kapsamlı bir şekilde değerlendirilecektir. Ayrıca, projenin yerel sosyo-kültürel yapı üzerindeki olası etkileri de dikkate alınacaktır.

Bu süreçte sahada çeşitli çalışmalar yürütülecek; veri toplama, görüşmeler ve anketler aracılığıyla mevcut çevresel ve sosyal durum ortaya konulacaktır. Elde edilen veriler, bilimsel yöntemlerle analiz edilerek olası etkiler değerlendirilecektir. Bu değerlendirmeler doğrultusunda, olumsuz etkilerin önlenmesi, azaltılması veya giderilmesine yönelik çevresel ve sosyal yönetim ile izleme planları hazırlanacaktır. Aynı zamanda biyolojik çeşitliliğin korunması ve sürdürülebilirliğin sağlanmasına yönelik önlemler geliştirilecektir. Bu sürecin her aşamasında bölgedeki halk ve paydaşlarla istişare edilecek olup, ÇSED raporu hazırlandıktan sonra 60 gün süreyle kamuoyunun görüşüne sunulacaktır.

Paydaş Katılımı

Paydaş katılımı süreci, ÇSED kapsamında Proje alanında veya çevresinde bulunan ilgili paydaşların bilgilendirilmesini ve geri bildirimlerinin alınmasını amaçlamaktadır. Proje ile ilgili soru, görüş, öneri ve şikâyetlerin iletilmesi için bir şikâyet mekanizması oluşturulacak olup, başvurular aşağıdaki iletişim bilgileri üzerinden yapılabilecektir.

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