REPORT

Project ANKA - G4-Viranşehir-5,7,8 Solar Power Plant Project, Şanlıurfa

Environmental and Social Impact Assessment - Non-Technical Summary

Submitted to:

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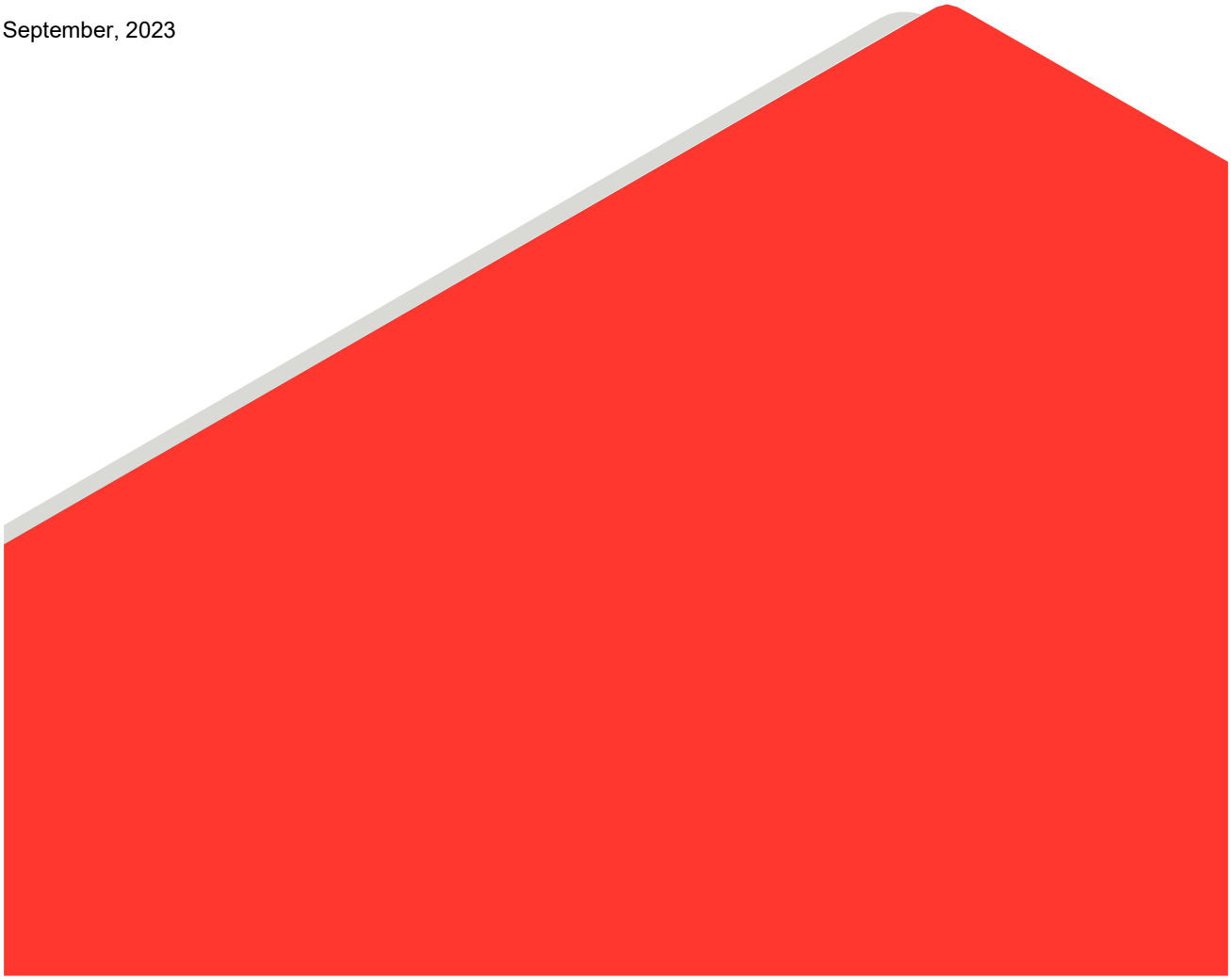

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Acronyms and Abbreviations

Abbreviation	Definition
AC	Alternating Current
AFAD	Disaster and Emergency Management Authority
AoI	Area of Influence
APL	Allocation in Return for Domestic Production
AZE	Alliance for Zero Extinction
CCTV	Closed-circuit television
CDP	Community Development Plan
CH	Critical Habitat
CHA	Critical Habitat Assessment
CIA	Cumulative Impact Assessment
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
Client	Kalyon YEKA GES 3 ve 4 Güneş Enerjisi Yatırımları A.Ş., subsidiary of Kalyon Enerji
CLO	Community Liasion Officer
CLS	Community Level Survey
CMC	Continuous Monitoring Center
CO	Carbon Monoxide
CSP	Concentrating solar-thermal power
CVD	Chemical Vapour Deposition
dBA	Decibels A
DC	Direct Current
DD	Data Deficient
EAAA	Ecologically Appropriate Area of Analysis
EBRD	European Bank for Reconstruction and Developmen
EHSS	Environment, Health and Safety, Social
E&S	Environmental and Social
EIA	Environmental Impact Assessment

Abbreviation	Definition
EMRA	Energy Market Regulatory Authority
EN	Endangered
EOO	Extent of Occurrence
EP	Equator Principles
EPC	Engineering, procurement, and construction
EPA	Environmental Protection Agency
EPFI	Equator Principles Financial Institution
EPRP	Emergency Preparedness and Response Plan
ESGA	E&S Gap Assessment
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
EU	European Union
EUNIS	European Nature Information System
FGD	Focus Group Discussion
GHG	Greenhouse Gas
GIIP	Good International Industry Practice
GN	Guidance Note
ha	hectare
HC	Hydrocarbon
HH	Household Survey
HR	Human Resources
hPA	Hectopascal
HR	Human Resources
HSE	Health and Safety and Environment
IBA	Important Bird Area
ICOMOS	The International Council on Monuments and Sites
ICP	Informed Consultation and Participation
IFC	International Finance Corporation

Abbreviation	Definition
IFI	International Financial Institutions
IPA	Important Plant Area
IUCN	International Union for Conservation of Nature
Kalyon Enerji	Kalyon Enerji Yatırımları A.Ş. (the Project Owner)
KBA	Key Biodiversity Area
KM	Kilometer
KPI	Key Performance Indicator
L	Liter
LC	Least Concern
LNG	Liquefied Natural Gas
LRP	Livelihood Restoration Plan
M	Meter
m^3	Cubic meter
MEDAŞ	MERAM Electricity Distribution Inc. Co.
mm	Milimeter
MoAF	Ministry of Agriculture and Forestry
MoC	Management of Change
MoEUCC	Ministry of Environment, Urbanisation and Climate Change
MWe	Megawatt Electric
MWp	Megawatt Power
N/A	Not Applicable
N-CP	Non-Compliance
NGO	Non-governmental Organization
NO_x	Nitrogen Oxide
NT	Near Threatened
NTS	Non-Technical Summary
OBS	Observation
OECD	The Organization for Economic Cooperation and Development
OHS	Occupational Health and Safety

Abbreviation	Definition
OHTL	Overhead Transmission Line
PA/CA	Preventative Actions/Corrective Actions
PAP	Project Affected Person
PCB	Polychlorinated Biphenyls
PDoEUCC	Provincial Directorate of Environment, Urbanization and Climate Change
PGA	Peak Ground Acceleration
PM	Particulate Matter
PPM	Public Participation Meeting
PS	Performance Standard
PV	Photovoltaic
RAP	Resettlement Action Plan
RCIA	Rapid Cumulative Impact Assessment
R&D	Research and Development
RIV	Residual Impact Value
RLE	Red List of Ecosystems
RMU	Disconnector -Breaker Unit
RSA	Regional Study Area
RWIHC	Regulation of Water Intended for Human Consumption
SCADA	Supervisory Control and Data Acquisition
Sec	second
SEA	Strategic Environmental Assessment
SEP	Stakeholder Engagement Plan
SF	Safety Factor
SHW	State Hydraulic Works
SIA	Social Impact Assessment
SO_2	Sulphur dioxide
SP	Sampling Point
SPA	Special Provincial Administration
SPP	Solar Power Plant

Abbreviation	Definition
sqm	Square Meter
SYDV	Social Assistance and Solidarity Foundation
TCFD	Task Force on Climate-related Financial Disclosures
TEDAŞ	Turkey Electricity Distribution Inc.
TEİAŞ	Turkish Electricity Transmission Corporation
TGFZ	Tuz Gölü Fault Zone
TOE	Tonne of oil equivalent
TRY	Turkish New Lira
TS	Turkish Standard
TURKSTAT	Turkish Statistical Institute
TÜBİVES	Turkish Plants Data Service
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGP	United Nations Guiding Principles on Business and Human Rights
VEC	Valued Environmental and Social Component
VU	Vulnerable
WB	World Bank
WB ESF	World Bank Environmental and Social Framework
WHO	World Health Organisation
WSP Türkiye	WSP-Golder Associates Türkiye Ltd.
WWF	World Wildlife Fund
WWTP	Wastewater Treatment Plant
YADES	Ministry of Family and Social Services Elderly Support Program
YEKA	Renewable Energy Source Area

Record of Issue

Company	Client Contact	Version	Date Issued	Method of Delivery
KALYON YEKA GES 3 ve 4 GÜNEŞ ENERJİSİ YATIRIMLARI A.Ş.	Defne Arısoy	Draft_R0	29.09.2023	E-mail
KALYON YEKA GES 3 ve 4 GÜNEŞ ENERJİSİ YATIRIMLARI A.Ş.	Defne Arısoy	Draft_R1	17.10.2023	E-mail

1.0 INTRODUCTION

1.1 Project Background

G4-Viranşehir-5,7,8 Solar Power Plant Project ("the Project") having a capacity of 195 MWp/150MWe, is planned by Kalyon Enerji Yatırımları A.Ş. ("Kalyon Enerji") and Kalyon YEKA GES 3 ve 4 Güneş Enerjisi Yatırımları A.Ş. ("Client"), a subsidiary of Kalyon Enerji. The Project will be located in Şanlıurfa Province, in the Viranşehir District, Kadıköy Neighbourhoods in Türkiye.

The Project area had been declared as an area suitable for the development of a solar project: a Renewable Energy Resource Area ("YEKA"). Consequently, Ministry of Energy and Natural Resources had launched the "Competition Announcement on the Allocation of Renewable Energy Resource Areas and Connection Capacities Based on Solar Energy"; YEKA SPP-4 Erzin-Viranşehir (including G-4-Viranşehir-5,7,8) competitions were held on 28.06.2022. YEKA Right of Use Agreements were signed on 08.08.2022 with Kalyon Enerji Yatırımları A.Ş., which won the competition held by the Ministry.

The Project consists of three sub-projects namely, G4-Viranşehir 5 Solar Power Plant Project, G4-Viranşehir 7 Solar Power Plant Project and G4-Viranşehir 8 Solar Power Plant Project. Individual Environmental Impact Assessment (EIA) reports have been prepared for these sub-projects as per the requirements of national EIA Regulation and the "EIA Positive" decisions for each Project have been acquired as shown in Table 1.

Table 1: EIA Decisions of Sub-Projects

Name of Sub Project	Allocated area (ha)	Capacity	National EIA Status	Type of the Land
G4-Viranşehir 5 Solar Power Plant Project	90	65 MWp/65 MWm/50 MWe	EIA Positive Decision Acquired (Decision No: 6998)	Pastureland and Grassland
G4-Viranşehir 7 Solar Power Plant Project	90	65 MWp/65MWm/50MWe	EIA Positive Decision Acquired (Decision No: 6996)	Pastureland and Grassland
G4-Viranşehir 8 Solar Power Plant Project	90	65 MWp/65MWm/50MWe	EIA Positive Decision Acquired (Decision No: 6997)	Pastureland and Grassland
TOTAL	**270**	**195 MWp/65MWm/150MWe**	**-**	**-**

A Gap Analysis Study, previously prepared by WSP Danışmanlık ve Mühendislik Ltd. Şti. ("WSP Türkiye") in May 2023, has identified gaps in the existing national EIA Report and available documentation obtained from Kalyon Enerji and suggest actions to close these gaps to reach a full bankable Environmental and Social Impact Assessment ("ESIA") in line with the International Conventions, IFIs Performance Standards (Equator Principles IV (EP), International Finance Corporation (IFC) Performance Standards (PS), Organisation for Economic Co-operation and Development (OECD)'s Common Approaches and Guidelines, and the best practices in the industry along with the national legislation).

Kalyon Enerji retained WSP Türkiye to prepare the ESIA for the Project in compliance with the national and international requirements detailed above and in Chapter 2.

The main components of the plant consist of solar panels, a panel carrier system, an inverter station (inverter, transformer, ring main unit and the substation). Infrastructure and utilities can be listed as the administrative building, Supervisory Control and Data Acquisition (SCADA) System and the overhead transmission line (OHTL). Once the Solar Power Plant is put into operation, it is planned to produce 390,000 MWh-electricity in annual basis, and the electricity produced will be transferred to the Viranşehir Substation via a new ~26.7 km length 154 kV OHTL. Details of the Project components are provided in Chapter 3 of this report.

The Project pre-construction activities, namely, mobilization of temporary site facilities, site preparation, grading and levelling, material delivery and storage and certain early trenching activities for cable laying have been started in August 2023. The construction period of the Project is estimated to be 10 months, test and commissioning period will be 7 months and the total operation period will be 30 years.

The Project will be established on a pasture land of 270 hectares. Adıyaman-Şanlıurfa-Diyarbakır Planning Region 1/100.000 Scaled Environmental Master Plan Amendment (M44, N42 and N43 Plan Plots, Plan Amendment Explanation Report) was approved on 07.07.2020 in accordance with Article 102 of the Presidential Decree No. 1. This Environmental Master Plan is located within the borders of "Grassland-Pastureland" as land uses in the 1/100.000 scale N43 Plan. The Project areas are also classified as "Pastureland" in terms of title deed.

The financing process is currently ongoing.

1.2 Project Owner

The Client is a renewable energy investment company established in 2016. As of August 2022, Kalyon Enerji belongs to International Energy Holding, which is affiliated with International Holding Company, one of the largest investment companies of the United Arab Emirates and the Gulf Region, and the remaining 50% belongs to Kalyon İnşaat, which is one of the leading construction companies of Türkiye and has signed many essential construction works.

Kalyon Enerji's top priority is to make energy accessible to everyone, including disadvantaged groups, by using clean and renewable energy sources. In this respect, the Client focuses on solar and wind power plant investments considering Turkey's and the world's ever-increasing energy needs with a sustainability vision and playing a leading role in the fight against climate change. When the client engages in impact investments in clean energy, due consideration is given to both the objectives of the nation in question and the global imperatives.

1.3 Project Parties

Project parties that will be involved in the SPP investment are illustrated below.

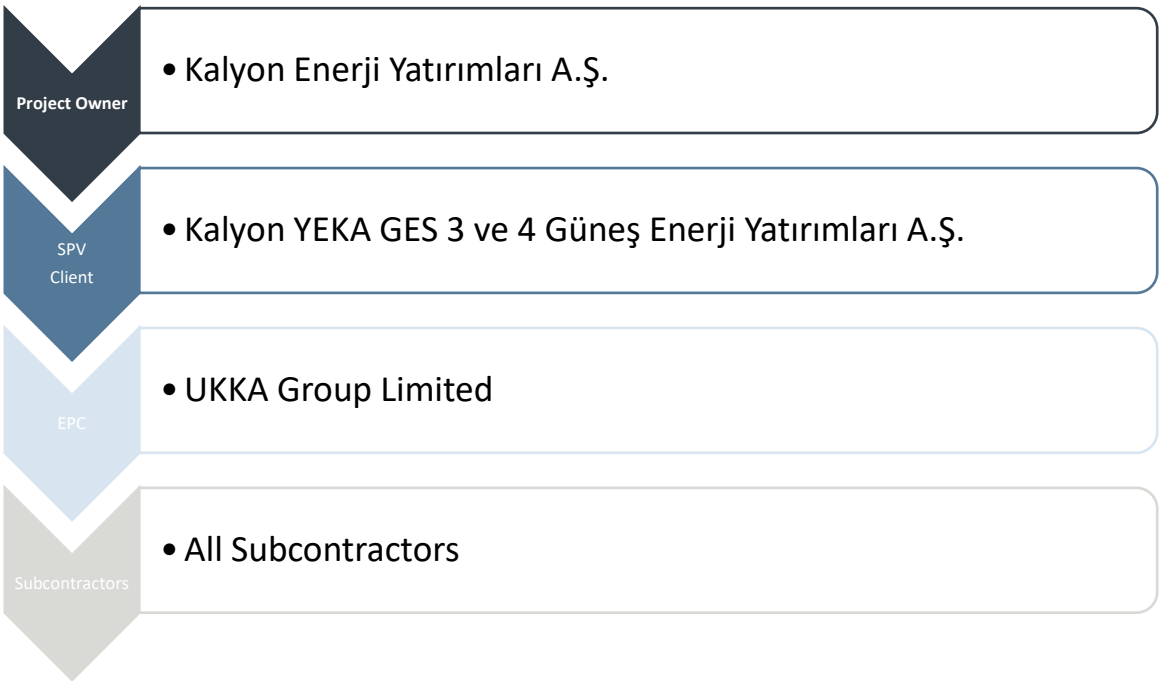

Figure 1: Illustration of Project Parties

Project Owner: Kalyon Enerji Yatırımları A.Ş.

SPV and the Client: Kalyon YEKA GES 3 ve 4 Güneş Enerji Yatırımları A.Ş., special purpose vehicle established for construction and operation of the facility, subsidiary of Kalyon Enerji Yatırımları A.Ş.

EPC: UKKA Group Limited, responsible for engineering, procurement, and construction during the construction phase of the facility.

TEİAŞ: Turkish Electricity Transmission Corporation, a public government company, that operates and owns the transmission of electricity, is responsible for the planning of a transmission investment for the new transmission facilities to be established, to establish new transmission facilities. The right of ownership and operation boundary of TEİAŞ starts at the connection point to the transmission system. In case the connection of the generation or consumption facility to the transmission system is carried out through the switchyard of another generation or consumption facility, the right of use, operation, and maintenance of the connected feeder belongs to TEİAŞ. However, TEİAŞ may request the operation and maintenance of such equipment to be performed by the relevant generation or consumption facility at a specified cost.

Global Enco Energy: contractor responsible for the construction of energy transmission lines for all YEKA Projects under an ordinary partnership that will be established with the participation of YEKA Project Owners including Kalyon Enerji.

1.4 Project Rationale

Solar power is a clean and renewable energy source that utilizes sunlight to generate electricity. By establishing a solar power plant, dependence on fossil fuels can be reduced and climate change can be mitigated by reducing greenhouse gas emissions.

Solar power provides an opportunity for countries to achieve energy independence. By generating electricity locally from the sun, reliance on imported fossil fuels can be reduced and energy costs can be stabilized. Once the initial investment is made to set up the solar power plant, the operational costs are relatively low. Solar power has a long lifespan, and the fuel source (sunlight) is infinite and free, making it a financially viable and sustainable option.

Solar power plants offer scalability and modularity. Depending on the available space and energy demand, the plant's capacity can be expanded by adding more solar panels. This flexibility allows for the customization and optimization of the project to meet specific energy needs.

Solar power technology has been advancing rapidly, resulting in improved efficiency and reduced costs. Continued investments in solar power plants can help drive further technological innovations, making solar energy even more accessible and cost-effective.

In this respect, the Project aims to:

- create a balanced portfolio in electricity generation by increasing the share of renewable energy resources,
- increase the resource diversity in total electricity generation,
- reduce the cost of electricity purchased from renewable energy generation facilities.

With the realization of the Project:

- Domestic production in renewable energy technologies will be developed,
- The capacity of qualified human resources will increase,
- Renewable energy soruces will increase across the country.

1.5 The Goal of this Document

An Environmental and Social Impact Assessment study has been conducted by WSP Türkiye regarding the realization of the Viranşehir SPP Project. This document, non-technical summary (NTS) of the ESIA, aims to summarize the ESIA findings, which was conducted according to the national and international regulations and standards of international Lenders, and mitigation measures for the management of the Project's environmental and social issues which was proposed by Kalyon Enerji; and aims to provide clear and valid information for the stakeholders by using a non-technical language.

1.6 Standards to be Applied in the Project

Kalyon Enerji commits to adhere to the provisions of Turkish laws and requirements applicable to the Project during the life-time of the Project. These requirements include (but are not limited to) the Environment Law, Occupational Health and Safety Law, Labour Law and other applicable Turkish legislation.

The Project will also comply with the International Finance Corporation Performance Standards (IFC PSs), Equator Principles and the Turkish laws and requirements.

1.7 Project Categorisation

The requirements from IFC and Equator Principles 4 regarding the Environmental and Social Assessment process and outcomes differ depending on the category of the project. Projects are categorized as follows:

Table 2: Project Categorisation

Applicable Standard	Category Explanation
IFC PSs (2012)	Category A: Business activities with potential significant adverse environmental or social risks and/or impacts that are diverse, irreversible, or unprecedented.
EPIV (2020)	Category A: Projects with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible, or unprecedented.

Project is proposed as "Category A" in reference to Equator Principles 4 and IFC for project categorization.

2.0 PROJECT DESCRIPTION

2.1 Project Overview and the Location

G4-Viranşehir-5,7,8 Solar Power Plant Project having a capacity of 195 MWp/150MWe, is planned by Kalyon Enerji Yatırımları A.Ş. ("Kalyon Enerji") and this Project will be developed and constructed by Kalyon YEKA GES 3 ve 4 Güneş Enerjisi Yatırımları A.Ş ("Client"), a subsidiary of Kalyon Enerji. The Project will be located in Şanlıurfa Province, Viranşehir District, Kadıköy Neighbourhoods in Türkiye. Once the Project is put into operation, it is planned to produce -390000 MWh electricity in annual basis, and the electricity produced will be transferred to the Viranşehir Substation via a new ~26.7 km-length 154 kV OHTL.

The Project pre-construction activities, namely, mobilization of temporary site facilities, site preparation, grading and levelling, material delivery and storage and certain early trenching activities for cable laying was planned to be started in August 2023. On the other hand, according to the latest information given by the Client, pre-construction activities have not started in the ESIA Report preparation phase.

Figure 2 represents the actual site conditions and Project location and layout are presented in Figure 3 and Figure 4, respectively. Nearest settlements are shown in Figure 5.

Figure 2: Photos of General Site Activities (Dated 2022, taken by EIA Consultant (EN-ÇEV)

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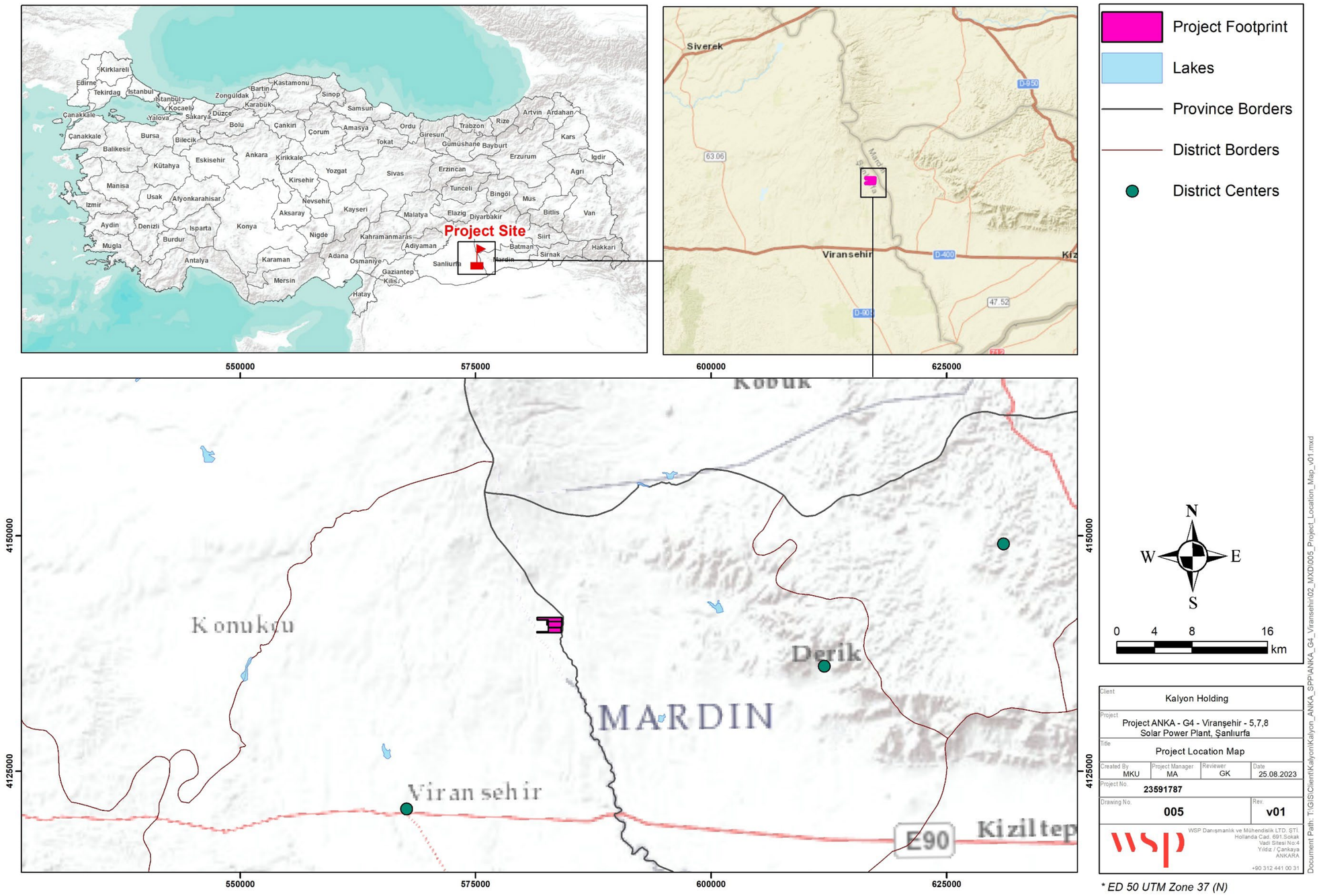


Figure 3: Project Location Map

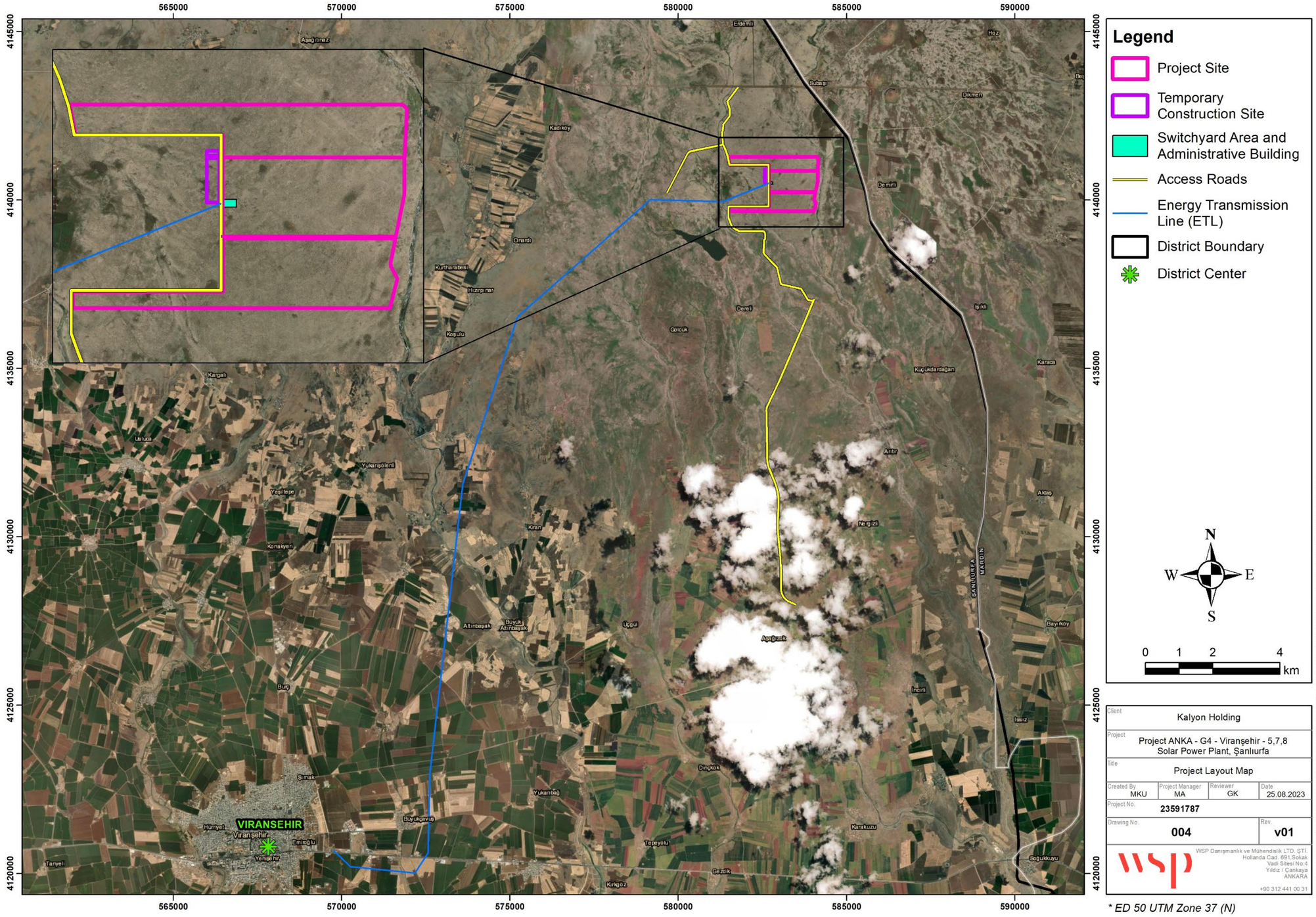


Figure 4: General Project Layout

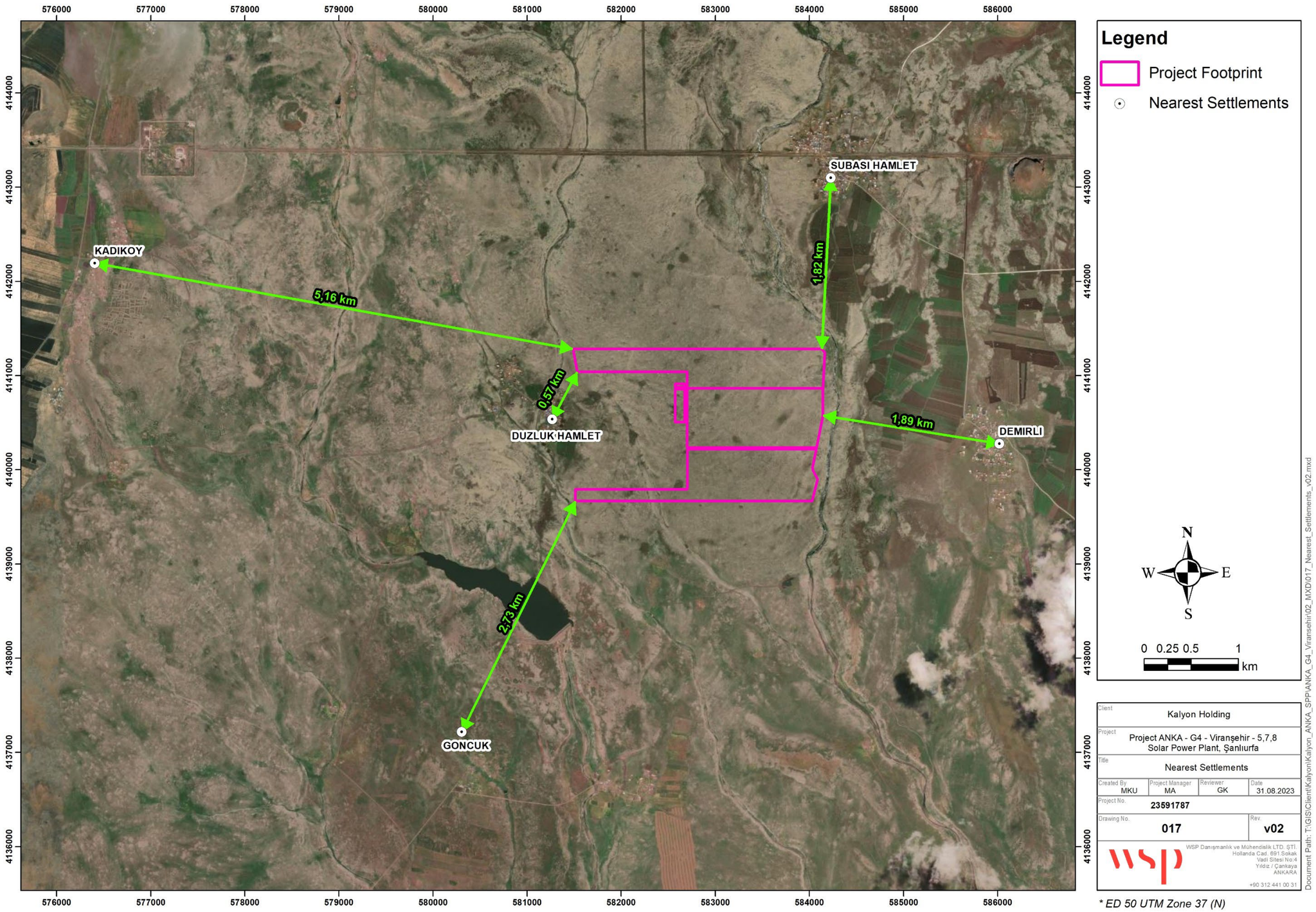


Figure 5: Nearest Settlements

2.2 Project Components

The main components of the plant consist of solar panels, PV module carrier system (one-axis solar tracker), DC Combiner Boxes, inverter stations and a substation. Other infrastructure and utilities can be listed as the Transformer Center Building (Supervisory Control and Data Acquisition (SCADA)), administration buildings (including dining hall, security building, personnel workshop).

Main components, their arrangements and working principles are presented in Figure 6.

Cables

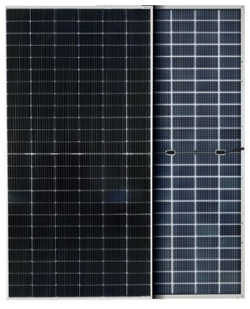
Cables

Cables

PV Module & Tracker (Panel Carrier) System

- PV Cells converts the sunlight into electricity.
- Parallel and serial connections PV Cells creates the PV Modules.
- PV Modules are mounted on tracker system. One Axis Tracker System supports PV Modules produce more energy with following up the sun during the daytime from East to West direction.

MONOPERC PV MODULE kalyon PV



Panel Power: 400 W
Panel QTY: 487728 PCS

SINGLE AXIS TRACKER SYSTEM PVH

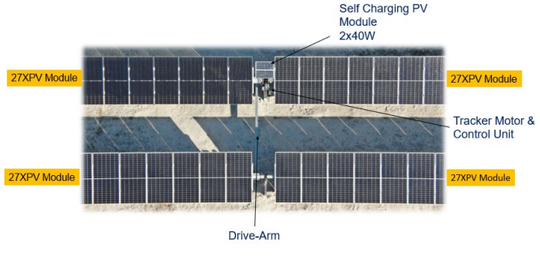


Figure 6: Project Illustration

DC Combiner Box

- Electricity produced by PV Modules are collecting trough DC Combiner Boxes.
- DC Combiner Boxes able to provide the information of the PV Module series Current/Voltage values for the monitoring purpose to check status of the PV Module Strings.

Inverter Station

- Inverter Station combines the electricity from the DC Combiner Boxes.
- Inverter convert the electricity from DC form to the AC form which is the national grid transmission form.
- Inverter injects the electricity to transformer with 690V voltage level, Transformer placed in the Inverter Station step-up the voltage level to the 34.5kV.
- Through the RMU (Ring Main Unit) switchgears the AC electricity combining together from couple of Inverter Stations and sending to the Substation.

4.73 MW CENTRALIZED INVERTER STATION

154/34.5 kV Substation and Switchyard

- Combined AC electricity from the Solar feeders is collecting with MV Switchgears in the Substations.
- Main Transformers in the substation steps-up the AC electricity voltage level required in the system connection agreement. (154kV)

154 kV Overhead Transmission Line

- HV electricity injecting to the national grid trough the overhead transmission line.

2.3 Associated Facilities

According to the OECD and IFC Performance Standards, Associated Facilities are defined as:

- OECD - “Associated facilities are those facilities that are not a component of the project but that would not be constructed or expanded if the project did not exist and on whose existence the viability of the project depends; such facilities may be funded, owned, managed, constructed and operated by the buyer and/or project sponsor or separately from the project.”
- IFC – PS1 par. 8 – “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”.

2.3.1 OHTL

Transmission line is the system that provides electrical energy transmission between substations and end consumers. An overhead transmission line consists of a copper or aluminium conductor cable, a carrier pole and an insulating insulator that provides the connection between the pole and the conductor.

According to Electricity Market Law in Türkiye, OHTL investments can be constructed or financed jointly by the legal entity or entities requesting connection to facilities in the following cases:

- Where it is necessary to construct a new transmission facility for the connection of generation and consumption facilities to the transmission system and new transmission lines to connect this facility to the transmission system,
- Where TEİAŞ does not have sufficient financing for the construction of these facilities
- Investment cannot be planned on time by TEİAŞ,

The investment cost is repaid by deducting from the transmission system usage fee within the framework of a facility contract to be signed between the relevant legal entity or entities and TEİAŞ, and connection and system usage agreements.

According to the information obtained from the Client, once the Solar Power Plant is put into operation, it is planned to produce 390,000 MWh electricity annually, and the electricity produced will be transferred to the Viranşehir Substation via a new ~26.7 km-length 154 kV OHTL. This new OHTL will serve for the other solar power plants in the vicinity of the Project Area. Therefore, it is not clear whether OHTL will be counted as an associated facility for these reasons mentioned. Therefore, it is not considered as an associated facility within the scope of the ESIA report.

2.3.2 Water Pipeline

A patrolling office is planned to be built near the project area and a groundwater well will be drilled for the patrolling office. Kalyon will plan to use water from that well for potable water requirements of the personnel and utility during the construction and operation phase patrolling officeand installation and operation of the well will be under the responsibility of the patrolling office. Since patrolling office will be very close to the mobilization area of the Project, no pipeline construction is of concern at this stage of the ESIA. Therefore, the well and the water pipeline is not considered as an associated facility within the scope of the ESIA report.

2.4 Alternative Analysis

IFC PS1 requires full and detailed justification for any proposed alternatives through the environmental and social risks and impacts identification and assessment process. The purpose of this section is to summarize how the Project siting and components represent an optimized design that is technically and financially viable while minimizing overall environmental and social impacts.

2.4.1 Site Alternatives

The Project area was declared as an area suitable for the development of solar projects: a Renewable Energy Resource Area (“YEKA") by the Ministry of Energy and Natural Resources. Consequently, it was launched the "Competition Announcement on the Allocation of Renewable Energy Resource Areas and Connection Capacities Based on Solar Energy"; YEKA SPP-4 Erzin-Viranşehir (including G-4-Viranşehir-5,7,8) competitions were held on 28.06.2022. YEKA Right of Use Agreements were signed on 08.08.2022 with Kalyon Enerji Yatırımları A.Ş., which won the competition held by the Ministry of Energy and Natural Resources.

Since YEKA areas are assessed, defined and declared by the Ministry of Energy and Natural Resources and allocated for the investors who win the relevant competitions, there is no other site alternatives for the Project.

2.4.2 Technology Alternatives

There are two main types of solar energy technologies: photovoltaics (PV) and concentrating solar-thermal power (CSP).

Concentrating solar-thermal power (CSP) systems use mirrors to reflect and concentrate sunlight onto receivers that collect solar energy and convert it to heat, which can then be used to produce electricity or stored for later use. It is used primarily in very large power plants.

CSP technology often relies on water for cooling and steam generation whereas PV technology requires minimal to no water for electricity generation, PV systems typically require occasional cleaning to maintain optimal performance, while CSP systems involve more extensive maintenance and monitoring due to the use of mirrors, tracking mechanisms, and heat transfer fluids.[1]

CSP systems typically require large open areas with specific land requirements and solar resource availability whereas PV panels can be installed on various surfaces. It is worth noting that CSP technology has its own advantages, such as the ability to incorporate thermal energy storage, which allows for continuous electricity generation even when the sun is not shining.[2] The choice between PV and CSP depends on factors such as project scale, location, energy requirements, and other specific considerations.

The Ministry identified photovoltaic solar energy as the project technology during the tender stage. Therefore, no other technology alternative is available for the Project.

2.4.3 No-Project Alternative

The ‘No Project’ alternative is the situation where the Project, does not proceed. Under this scenario, there would not be any negative impacts on the environment, the beneficial environmental (especially in terms of GHG emissions and climate change), socio-economic outcomes, economic benefit to local and national stakeholders and contribution to a sustainable environment would not happen. With the realization of the Project, annual amount of electricity to be generated by the Project is estimated as 300,000 MWh/year. Within this regard, based on the Turkish National Electricity Grid Emission Factor (0.6488 t CO2/MWh) defined by the Turkish Ministry of Energy and Natural Resources, 194,640 tonne CO2/year of GHG emissions will be avoided in annual basis in the energy sector with the realization of the Project. However, considering that the Project area has been designated as YEKA and set aside for such projects, the Project area would still be used for other renewable energy projects of other companies if the "No Project" option was chosen.

[1] https://www.sciencedirect.com/topics/earth-and-planetary-sciences/solar-energy-technology

[2] https://www.solarfeeds.com/mag/csp-and-pv-differences-comparison/

2.5 Land Use

The total land use area in Şanlıurfa Province is 1,921,985,24 hectares. The Siverek district of Şanlıurfa is the largest district in terms of surface area. The latest information available on land use of Şanlıurfa is based on the 2018 data of CORINE Land Use Classification System. The distribution of land use of Şanlıurfa according to the latest data available is provided in the figure below.

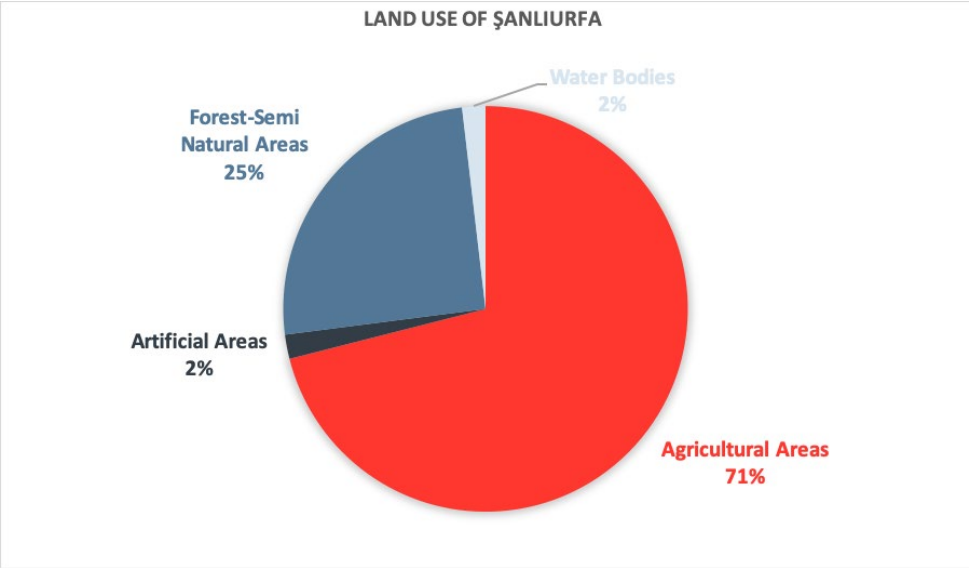


Figure 7: Land Use of Şanlıurfa

In Şanlıurfa, forest, semi-natural, and agricultural areas comprise almost all the land. Water Bodies and artificial areas comprise 4% of the total land.

According to the 2018 data from the CORINE Land Use Classification System, Viranşehir's land use distribution is provided in the figure below.

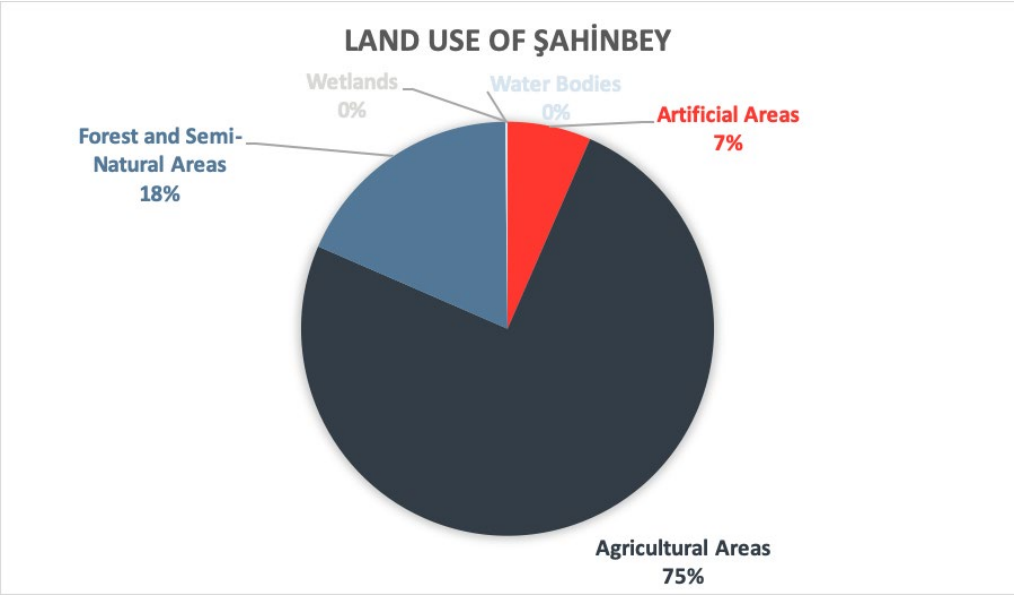


Figure 8: Land use of Viranşehir

In Viranşehir, land use distribution is similar to Şanlıurfa. Agricultural and forest-semi natural areas make up most of the land.

2.6 Project Schedule

A summary of the Project schedule is presented below. According to the schedule, the construction period of the Project is estimated to be 10 months, test and commissioning period will be 7 months and the total operation period will be 30 years.

Activity	Start Date	End Date
Permitting		
Ministry Approval of Design	15-Mar-23	10-Aug-23
Construction Permit	15-Sep-22	10-Aug-23
Final Delivery Acceptance Certificate Application & Issuance	01-Mar-24	05-Mar-24
The signing of the YEKA Contract	08-Aug-22	
Master Plan Approval	20-Nov-22	14-Sep-23
EMRA (EPDK) Pre-License Approval	09-Nov-22	09-Mar-23
Base Plan Approval of the Site	04-Oct-22	30-Oct-22
Environmental Impact Assessment Approval	15-Sep-22	25-Jan-23
Signing TEİAŞ Connection Agreement	05-Oct-22	22-Jun-23
Transfer of Land Ownership	18-Nov-22	18-Aug-23
Land Allocation Approval	25-Nov-23	29-Nov-23
Electricity Generation License Approval	19-Oct-23	13-Nov-23
Baseline Studies (Physical Measurements & Biodiversity Monitoring)	04-Apr-23	05-Jun-23
Engineering	**06-Sep-22**	**30-Aug-23**
SPP Engineering	28-Sep-22	24-Jun-23
Substation Contracting & Engineering	06-Sep-22	01-Jul-23
OHTL Contracting, Engineering	04-Oct-22	15-Jun-23
CCTV & Lighting Engineering	01-Aug-23	30-Aug-23
Procurement	**11-Apr-23**	**07-Sep-23**
Early Works	**01-Jun-23**	**29-Feb-24**
Rock Removal from Site Surface (Under Responsibility of Municipality)	15-Aug-23	29-Aug-23
Mobilization Works	15-Aug-23	13-Sep-23
Reptile & Mammal Nest Monitoring Prior to Earthworks	15-Aug-23	13-Sep-23
Construction	**15-Aug-23**	**21-Jun-24**
Solar System	15-Aug-23	21-Jun-24
Substation	15-Aug-23	11-Mar-24
OHTL	15-Aug-23	11-Mar-24
Test & Commissioning & Provisional Acceptance	**18-Dec-23**	**03-Jul-24**
Solar System	18-Dec-23	03-Jul-24
Substation	17-Mar-24	31-Mar-24
154 kV OHTL	12-Mar-24	16-Mar-24

Figure 9: Project Schedule

3.0 IMPACT ASSESSMENT SUMMARY

In order to assess the environmental and social impacts of the Project, an Environmental and Social Impact Assessment Report has been prepared with the following objectives:

- Identification and assessment of environmental and social impacts, both adverse and beneficial, in the Project's area of influence,
- Evaluation of the main environmental and social risks and potential impacts of the Project,
- Presentation of Environmental and Social Management and Monitoring Plan (ESMMP), Environmental and Social Management System (ESMS), Stakeholder Engagement documentation, and grievance mechanism (GM) in line with the Equator Principles (EP) 4 and IFC Performance Standards (PSs),
- Description of the management, mitigation, monitoring and compensation measures, including the ESMS, the ESMMP, and the thematic action or management plans,
- Cumulative impact assessment (CIA) (as required by the EP 4 and IFC PSs),
- Assessment of associated facilities,
- Main components of the assessment include:
    - The potential environmental and social impacts of the Project throughout the full life cycle,
    - A public consultation to ensure that local communities and other key stakeholders are informed of the Project and have an opportunity to express their opinions concerning the Project,
    - Proposed mitigation activities to minimize adverse environmental and social 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.

The ESIA Report aims to assess the environmental and social impacts of all Project sections as a whole.

First key step in the ESIA process was the preparation of the gap analysis to identify gaps in the national EIA Report and existing documentation provided by the Client with respect to the relevant international standards, and to suggest actions to address these gaps. The overall objective of the study was to review existing technical documents, reports and studies to evaluate the possibility of using the already available data in the preparation of the international ESIA.

An additional step of the ESIA preparation has been the review of supplementary documentation that has become available with the progress of the Project design. The review of the documentation has allowed the ESIA team to complete the gap analysis of the existing data and information as well as defining the methodology and structure of the ESIA and related documents.

Baseline information to be used in the ESIA is obtained from the Project-specific social and environmental baseline studies that have been initiated during Gap Analysis process and carried out as part of this ESIA, utilising both desktop study and field-based approaches. However, due to the opposition of the local communities, a robust social baseline study and biodiversity study could not be conducted up to this stage of the ESIA. Therefore, social impact assessment part of this ESIA Report was written based on media analysis, Mukhtar interview, key institution interview and expert judgement since the local community had not participated to such a social survey and the biodiversity baseline was written based on the information given in the national EIA report and literature research. On the other hand, within the scope of the environmental baseline study, baseline measurements for water, soil, air, groundwater, surface water, noise, vibration and settled dust were

carried out in April 2023. E&S pre-construction survey including biodiversity component was carried out by the Client on February 21, 2023 and survey report was provided to WSP Türkiye.

The Area of Influence (“AoI”) of the Project which a direct or indirect impact on the biological, physical and social components might occur is given in Figure 15.

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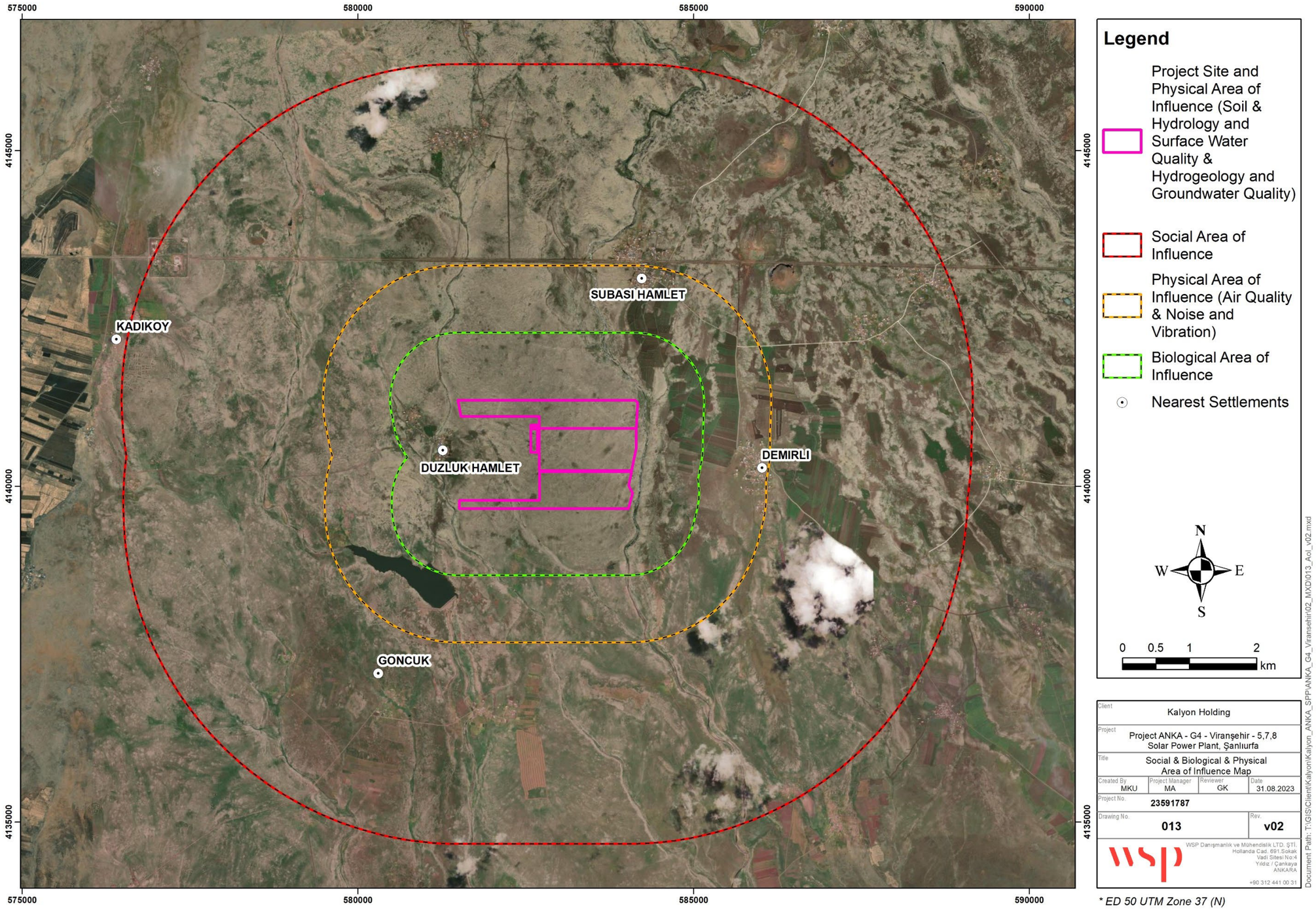

** ED 50 UTM Zone 37 (N)*

Figure 10: Area of Influence Map of the Project

Summary of the Impacts and Mitigation&Monitoring Activities

Component	Phase	Project action	Mitigation measures	Monitoring measures
Social Components				
Population and Demography	Construction	General engineering/construction works;	■ Camp Site and Offsite Accommodation Management will be implemented. ■ During the workers' accommodation design and planning process, IFC - EBRD Guiding Notes on Workers' Accommodation will be followed to ensure that the document's requirements are met. ■ Accommodation will be fully contained with meals, entertainment, medical clinic. By this way interaction of the workers with local communities will be prevented as much as possible. The potential negative results of the interaction with the community residents will be explained to workers via social induction/trainings. Workers will not need to go into communities and if they pass through communities to get to the site at the beginning and end of their shift, they will be discouraged from interacting negatively with community residents. ■ Priority for the employment opportunities will be given to local residents, where applicable. ■ Workers' accommodations will be designed in compliance with the processes and standards of the IFC and the EBRD (2009), and the basic needs of the workers will be provided within the borders of the accommodation to limit the interaction of the workers with the local communities to prevent the pressure on the local utilities and the services. ■ In case of the recruitment of workers outside the local area, cultural awareness training will be provided to workers to prevent any cultural conflicts with the local communities. ■ Employee Code of Conduct will be prepared and applied. ■ The mukhtars of the villages will be informed about the construction of the workers' accommodation, and the workers that will be accommodated in the camps will be registered in the village system. ■ A grievance mechanism will be applied to record any gender-based complaints, and necessary measures will be taken accordingly.	
	Operation	SPP/infrastructure operation	■ Priority for the employment opportunities will be given to local residents where applicable, ■ In case of the recruitment of workers outside the local area, cultural awareness training will be provided to workers to prevent any cultural conflicts, ■ Employee Code of Conduct will be prepared and applied, ■ A grievance mechanism will be applied to record any gender-based complaints, and necessary measures will be taken accordingly.	

Component	Phase	Project action	Mitigation measures	Monitoring measures
Economy and Employment	Construction	General engineering/construction works	The Project will implement human resource policies and procedures and Labor Management Plan in compliance with the IFC PS-2 on Labour and Working Conditions. Job opportunities provided by the Project will be an essential source of income, especially for unemployed people, households living in poverty and the younger population in the AoI. The following enhancement actions will be implemented in order to improve the opportunities emerging from the Project and to enhance the positive impacts of the Project. ■ The Project will implement human resource policies and procedures in compliance with the IFC PS-2 on Labour and Working Conditions. Such policies are expected to provide more predictable employment opportunities for direct and indirect employees, ■ The Project will enhance local employment, and referential employment will be given to qualified local people. Hiring preference criteria will prioritize settlements directly affected by the current activities of the Project, ■ Individuals whose livelihood sources are affected by the Project impacts will be given priority in the recruitment process of the Project, ■ Formal and transparent recruitment process will be implemented to provide equal opportunity to the applicants, ■ The mukhtars of the villages will be informed about the recruitment opportunities of the Project (announcements, banners) to reduce the requirement of the non-local labour force, ■ Where applicable, vocational training will be provided to local people to maximize the local labour force, ■ Before the procurement, local suppliers will be identified, and priority on purchases will be given to goods and services from local businesses, ■ Capacity development will be applied, including the OHS and HR, ■ Equal procurement opportunities will be provided to local small businesses through the Supplier Management Plan, ■ EPC, subcontractors and suppliers will be monitored to prevent child and forced labour through Contractor Management Plan and Supplier Management Plan, ■ An equal tender process will be applied, ■ Equal pay for equal jobs will be provided to the local and non-local labour forces, ■ Bank accounts will be provided to workers, and payments will be made via these bank accounts, ■ The Worker Grievance mechanism will be implemented	■ Employment agreements made with contractors and subcontractors, ■ Training Records (training materials, participant list, training planning, photos), which will be performance indicators for ESMS, to be prepared for the Project, ■ Employment records (contracts, employee register), which will be performance indicators for ESMS, to be prepared for the Project, ■ Grievance Records in accordance with the grievance mechanism to be produced for the Project.
	Operation	SPP/infrastructure operation	■ To contribute to regional and global energy security, ■ To be a regional trade center in energy, ■ To consider social and environmental impacts in the context of sustainable development in every phase of the energy chain.	■ annual energy production information
Labour and Working Conditions	Construction	General engineering/construction works	■ All workers are required to provide criminal record, Social Security Institution service breakdown, place of residence, family declaration, and health checks, ■ The recruitment processes will be transparent, public, and non-discriminatory, providing equal opportunities with respect to ethnicity, religion, language, gender and sexual orientation. The Contractors will provide information on the recruitment process, with particular emphasis on informing local communities of employment opportunities through different channels such as headmen and local associations, ■ All workers will have freedom to join an association and union in compliance with Turkish Labour Law, ■ The Client will follow Turkish law, while applying equal opportunities to women in all other branches where law does not prohibit women workers. Further measures will remain and Non-Discrimination and put in place to	■ Employment agreements made with contractors and subcontractors, ■ Training Records (training materials, participant list, training planning, photos), ■ records (contracts, employee register, ■ Incident records, ■ Grievance Records, ■ Collective Agreements (if any), ■ Occupational health and safety records.

Component	Phase	Project action	Mitigation measures	Monitoring measures

	Operation	SPP/infrastructure operation	encourage female participation in non-employee workforce, such as Positive Equal Opportunity providing specific training where required, enabling flexibility and job-sharing opportunities for women with children to participate,
			■ The minimum age for the employment will be 18 and any use of child labour will be prohibited,
			■ Forced labour will be prohibited by ensuring full compliance with national legislation and the provisions of relevant conventions and other international standards. These measures will be reflected in the Project's Employment Policy Document,
			■ The ILO standards ratified by Turkey will be applied,
			■ The Client will be responsible of monitoring of the contractors' and supply chain companies,
			■ It should be noted that the Project will not cause retrenchment of existing personnel, but collective dismissal of the construction personnel will be required, after the completion of the construction phase. However, contract of limited duration will be used, and the workers will be informed on the duration of their work,
			■ The accommodation of the workers will be clean and safe, and it will meet the basic needs of workers, providing minimum amounts of space for each worker; sanitary, laundry and cooking facilities. Overcrowding will be avoided,
			■ Heating, air-conditioning, and ventilation will be appropriate for the climatic conditions and provide workers with a comfortable and healthy environment to rest and spend their spare time,
			■ Drinking water to be provided to Project workforce and water to be supplied to food preparation, washing and bathing areas will meet the requirements of the Turkish Regulation Concerning Water Intended for Human Consumption,
			■ Adequate lavatory facilities (toilets, urinals, washbasins, and showers) will be provided for the number of people expected to work in the facility and allowances will make for indicating whether the toilet facility is "In Use" or "Vacant". Toilet facilities will also be provided with adequate supplies of hot and cold running water, soap, and hand drying devices,
			■ First aid and medical facilities as well as provisions for safety against potential hazards (fire, etc.) will be provided at the camp sites,
			■ Domestic wastewater and waste to be produced at camp sites will be properly managed and disposed of in line with the requirements of Waste Management Plan,
			■ Workers who accommodate in the camps will be made aware of any rules governing the accommodation,
			■ Project's Grievance Mechanism will provide means to the Project personnel to lodge their complaints. The Client will ensure that the workers are informed of the grievance mechanism at the time of recruitment and make it easily accessible to them,
			■ The following plans will be implemented:
			  ■ Camp Management Plan and Offsite Accommodation Management Plan
			  ■ Community Health and Safety Plan
			  ■ Security Management Plan
			  ■ Labour Management Plan
			■ It will be ensured that the employees and any suppliers have access to human resources policies. Workers will be provided with information including, but not be limited to, entitlement to wages, hours of work, overtime arrangements and overtime compensation, and any benefits (such as leave for illness, maternity / paternity, or holiday),
			■ Independent audits and inspections should be undertaken.
			■ The Client will implement Human Resources policy which observes wage standards, working hour regulation, freedom of association and staff encouragement. The policy will also eliminate child and forced labour, discrimination on the basis of religion, language, gender or social status, bullying and harassment,
			■ All workers will be able to join trade unions of their choice and have the right to collective bargaining,
			■ Contracts will be verbally explained to all workers where this is necessary to ensure that workers understand their rights prior to any employment contract to be signed,
			■ Wages, benefits and conditions of work offered will be comparable to those offered by equivalent employers in Şanlıurfa and the same sector.
			■ The Project and all contractors will put in place a formal worker grievance mechanism.	

Component	Phase	Project action	Mitigation measures	Monitoring measures
Land Use (Livelihoods and Land Access Restrictions)	Construction	General engineering/construction works;	■ Economic displacement impacts will be minimized during the design phase of the Project. ■ Community Development Plan will be prepared and implemented to bridge the gaps between Turkish Expropriation Law and IFC PS-5. The following implementations are planned within the scope of the CDP: ▪ Local employment (prioritizing Düzlük hamlet households),	

			▪ Capacity building/development trainings for this employment, ▪ Local procurement, ▪ Pasture improvement project in coordination with Viranşehir District Directorate of Agriculture, ▪ Equipment supply for animal breeders, ▪ Veterinary support, ▪ Equipment supply for agricultural activities, ▪ Improvement of the village roads ▪ Infrastructure improvements/supports to increase human life quality and welfare. ■ Vulnerable people that will be affected due to Project will be determined and specific assistance will be provided. ■ During the recruitment process priority will be provided to people who lost their livelihoods as a result of the establishment of the Project. ■ All construction works will be continuing within the borders of the designated areas and in case of an unplanned damage, loss of the affected PAPs will be compensated by the contractors. ■ Community Liaison Officer will be hired and collect grievances. ■ If compensation alone is not sufficient to restore livelihoods, implementation of livelihood restoration in accordance with IFC requirements. ■ Grievance mechanism will be established. ■ Impacts to agricultural and pasture lands will be minimized as far as possible by keeping the Project construction footprint as narrow as possible, and efficiently restoring any damaged areas. ■ Any business losses will be compensated at a full replacement value. ■ Any loss of or damage to crops caused by Project activities will be compensated. ■ Hunting and collection of wild animals will be strictly prohibited within the Project area. ■ Kalyon Energy will initiate the Grazing Pilot Project at the site after the construction works are completed. If this project is successful, the site will be opened to controlled grazing. ■ A CDP will be developed and implemented and one of the main target groups will be the ecosystem users. ■ Following assessment and coordination will be undertaken to prevent the impacts on the pastureland based livelihoods; ▪ Baseline Assessment: A baseline assessment will be conducted for the evaluation of the grazing capacity in detail taken into consideration of vegetation type, soil quality, and climate and the number of the animals and the households depended to the affected pastureland. ▪ **Collaboration with Expert Organizations:** Official cooperation will be made with NGOs and universities specialized in pasture management and their expertise will be used to enhance the accuracy of the grazing assessment. ▪ **Grazing Assessment Report:** A comprehensive report will be prepared detailing the findings of the grazing assessment, recommendations for sustainable grazing practices, consideration environmental and ecological factors will be taken into the consideration. ▪ **Grazing Procedure Development:** A detailed grazing procedure will be prepared based on the results of the assessment report that includes guidelines for optimal stocking rates, rotational grazing, and fallowing periods for vegetation recovery. ▪ **Government Collaboration:** The outcomes of the cooperation with the NGOs and the universities will be shared with the Ministry of Agriculture in a transparent way and further communication will be developed for their endorsement and support for widespread implementation.	

Component	Phase	Project action	Mitigation measures	Monitoring measures
			▪ **Shepherd Recruitment and Training:** Shepherds who have received training in sustainable grazing practices will be hired to prevent over usage on the ecosystem services, to protect the life of the animals, and to prevent any damage on the power plant, ▪ **Livestock Development:** Mitigation measures will be implemented to increase the number of sheep in the area, considering factors such as breeding programs, veterinary care, and access to quality feed. ▪ **Monitoring and Adaptive Management:** Continuous monitoring of grazing activities and livestock development will be conducted throughout the project lifespan of the Project. The results will be discussed with the PAPs and the relevant stakeholders to identify areas for improvement and take necessary actions. The grazing procedure and livestock development strategies will be updated if required. ▪ **Construction Phase Mitigation:**To mitigate the impact of construction on grazing land and livestock: – Alternative feeding options will be provided. – Animal feed seeds will be distributed to promote vegetation growth and compensate for potential losses during the construction phase. ▪ **Community Engagement:** PAPs will be engaged continuously during the implementation phase to ensure their understanding and cooperation. The awareness programs will be implemented to convey the on the benefits of sustainable grazing practices and the economic potential of increased sheep farming. ▪ **Documentation and Reporting:** Detailed records of grazing activities, livestock development initiatives, monitoring results, and any implemented measures will be recorded and regular reports will be submitted rto the Ministry of Agriculture to keep them informed of project progress. ▪ **Project Dissemination:** Work with the Ministry of Agriculture to disseminate successful practices to other regions. Facilitate workshops and knowledge-sharing sessions for farmers and stakeholders. ▪ **Project Evaluation:** Conduct a comprehensive evaluation of the project's impact on the field's ecosystem, grazing capacity, livestock development, and community livelihoods. Use the results to refine future projects and contribute to the broader understanding of sustainable grazing management and livestock development and include the results in the annual Environmental and Social Report.	

Community Health and Safety	Construction	General engineering/construction works	A Traffic Management Plan have been prepared within the scope of the Project to maintain traffic safety on the roads to be used and to prevent the risks which may outcome due to Project activities ensuring a “safe site, safe vehicle and safe driver” at all times. The following points will be considered as a minimum regarding traffic management: ■ Referring to the Stakeholder Engagement section of this ESIA Report, a continuous stakeholder engagement process and grievance mechanism will be in place: ▪ To exchange information on the Project with the local community and other stakeholders; and ▪ To record and respond to complaints and concerns from the local community members and other stakeholders. ■ Considerations will be given to traffic volumes at the rush hours of the day, and transportation of equipment and materials will be utilized at quieter periods to avoid increased congestion on the roads used by the local communities, ■ It will be ensured that the roads will be made suitable for heavy vehicle use by taking necessary permits and making necessary arrangements. In case of any road damage, necessary maintenance works will be undertaken, ■ Project site will be equipped with suitable and sufficient lighting to ensure sufficient visibility, ■ Community Health and Safety Plan (CHSP) will be implemented, ■ Village roads will be improved, ■ In case construction activities are required on the existing roads will only start after the relevant permits are obtained; all necessary precautions will be taken as signage, barrier, fence, lighting, ■ Vulnerable and critical points will be identified in the Project site (including sensitive receptors such as hospitals and schools) to envisage the access routes for construction traffic, ■ Construction vehicles will only operate in the defined routes; vehicles will be monitored via an In Vehicle Monitoring System, ■ Cameras will be placed in appropriate places on the roads so that construction vehicles belong to different projects can be distinguished and monitored, ■ At all times, vehicles will be kept on designated site roads where established. Off-road driving is prohibited except in emergencies or if no roads have been established, ■ If reversing cannot be avoided in the work areas, necessary reversing procedures will be identified, including installing reversing aids on vehicles, reversing sensors etc. Trained banksman will be used when reversing cannot be avoided, ■ Parking areas will be designated with signs, and reverse parking will be implemented for emergencies, ■ The routes to be used by pedestrians will be segregated from heavy vehicle routes where possible, ■ Appropriate traffic signs, signals, lights and markings will be placed in the required areas to prevent potential accidents/incidents. Barriers will be placed in the required areas to protect human health and assets, ■ The speed limits will be implemented. Vehicle speeds will be monitored randomly through speed gun tools, ■ Seatbelts will be worn in vehicles and machinery when being operated, ■ No vehicle/equipment/material will be allowed to enter work areas before obtaining approval from security, ■ Loading areas will be designed appropriately to prevent/minimize vehicle/pedestrian contact and property damages, ■ All operators will be licensed/certified for the type of vehicle being driven and will undergo medical surveillance, ■ Repair and maintenance of vehicles will be done by the authorized bodies, ■ Changes in the condition of the roads will be monitored regularly, and road improvement works will be carried out, when necessary, ■ Fatigue and distraction procedures will be established considering the local legal requirements and the nature of the work, ■ Project disclosure activities will include informing communities about the project traffic management controls, planned road closures, blasting activities and grievance mechanisms. Collaboration with local communities and	■ Record of the number of traffic-related incidents involving contractor workers, subcontractor workers and external persons, ■ Investigation of the incidents and accidents and use of lessons learned to improve traffic mitigations, ■ Record of and tracking Training Records of Drivers and Training Records on Community Health and Safety, ■ The licenses and medical surveillance of the operators to ensure they are up to date, ■ Visual inspections ■ Environmental monitoring records ■ Record of the number of total road closures caused by the Project activities, ■ Maintenance records of the vehicles to ensure regular maintenance activities take place, ■ Weather forecast monitoring to ensure the safety of the operators, ■ Keeping a record of and tracking the traffic accident/emergency response actions, ■ Keeping a record of the number of grievances related to the traffic received and the percentage of grievances resolved positively, ■ Please See Air Quality Chapter of the table ■ Please see Noise Chapter of the table. ■ Community grievances registers by the grievance mechanism to be formed for the Project, ■ Stakeholder Engagement and consultation registers and records by the Stakeholder Engagement Plan to be produced for the Project, ■ Percentages of the local employees (which will be a performance indicator for ESMS to be prepared for the Project), ■ Population figures of the settlements according to TURKSAT data. ■ Training records on community health and safety, ■ Records of communicable diseases. ■ Licenses and permits of quarries and excavation material storage/recycling facilities will be recorded, ■ Document review (e.g., permits, waste recycling/disposal agreements) and visual checks at the work sites. ■ Training records of the security personnel.

			responsible authorities will be ensured to improve signage, visibility, and road safety conditions, especially near the roads and other locations where children may be present., ■ In SEP of the Project, these information-sharing methods and schedules will be defined. In order to minimize the particulate matter emission and noise that will occur within the scope of the Project: ■ The transportation routes to be used will be watered regularly with water sprinklers, ■ The removal and laying operations of the materials will be carried out without tossing as much as possible. ■ Pollution Prevention Plan will be followed. ■ All machines to be used under normal operating conditions will not run simultaneously, ■ Monthly and annual maintenance of machinery and equipment will be done periodically, ■ Pollution Prevention Plan will be followed. ■ Quality spare parts and lubrication products will be used. Considering the expected population influx and the insufficient infrastructure system in some of the settlements in the AoI identified in the socioeconomic baseline, mitigation measures have been defined to prevent the pressure and negative impact on infrastructure and services caused by the population influx, especially during the construction phase. Certain negative impacts related to the population influx due to the Project on infrastructure and services are as follows: ■ The inability of vulnerable groups to equally access social and health services due to supply-demand imbalance, ■ Population influx due to the Project intensifying health services and decreasing the quality of service, ■ Delays in responding to emergencies on time, ■ The emergence of inadequacies due to increased demand for drugs and medical needs. The population increase may lead increase in communicable and infectious diseases in the Project Area of Influence. The following are the essential control measures to be implemented to avoid the spread of communicable diseases: ■ Pre-employment health screening and regular medical checks of workers per Turkish regulatory requirements, ■ Regular cleaning principles to be applied in the Project site, ■ Community Health and Safety Management Plan should be implemented for the Project that includes medical surveillance, ■ Awareness-raising on healthy lifestyles for workers and community-level training. ■ All waste or excess material that may be remained due to the activities in the Project area will be disposed of under laws and regulations. ■ Measures defined in Chapter 7.1 of the ESIA Report and Waste Management Plan and Pollution Prevention Plan will be followed. A Security Management Plan have been prepared in line with the national (Private Security Services Law No: 5188, 2004) and international (e.g., IFC PS4) standards within the scope of the Project to manage the security-related impacts and ensure the security of the activities, assets, work premises at the Project and avoid potential impacts on workers and the local community. The following measures will be considered as a minimum regarding security arrangements: ■ Security will be provided at the Project area by third-party company or in-house security personnel with no criminal histories or history of abuse, ■ Security personnel will be trained adequately in their envisaged roles and responsibilities, the use of force (and, where applicable, firearms), and appropriate conduct toward workers and affected communities and the applicable law, ■ Security patrols will be done at regular intervals, ■ Entry of unauthorized persons will be prevented by using appropriate tools and gadgets. Warning signs about unauthorized entry will be available at various locations at the Project crossings, ■ Entry and removal of equipment/material will be controlled at the control points; the movement of equipment/material will be allowed after the approval of the relevant department,	

Component	Phase	Project action	Mitigation measures	Monitoring measures
			■ A grievance mechanism will be in place for the affected communities to express their concerns about the security arrangements and acts of the security personnel, ■ Relevant Project officials will continuously accompany the visitors during their stay on the Project site, and all visitors will be recorded, ■ All visitors will be given brochures explaining the Project area, site rules and what to do in case of emergencies, ■ Personal Protective Equipment will be provided to visitors coming to the Project site, ■ All areas that may be dangerous to visitors will be locked, ■ All areas that pose a danger at the Project area will be marked with appropriate signs.	

	Operation	Plant/infrastructure operation	■ Referring to Stakeholder Engagement section of this ESIA Report, a continuous stakeholder engagement process and grievance mechanism will be in place:
			  ▪ to exchange information on the Project with the local community and other stakeholders; and
			  ▪ to record and respond any complaints and concerns raised by the local community members and other stakeholders.
			■ Project site will be equipped with suitable and sufficient lighting to ensure sufficient visibility.
			■ At all times vehicles will be kept on designated site roads where established. Off-road driving will not be permitted other than emergency situations, or if no roads have been established yet.
			■ Parking areas will be designated with signs and reverse parking will be implemented for emergency situations.
			■ The routes to be used by pedestrians will be segregated from vehicle routes where possible.
			■ The speed limits will be implemented.
			■ Project disclosure activities will include informing communities about the project traffic management controls, planned road closures, blasting activities and grievance mechanism. Collaboration with local communities and responsible authorities will be ensured to improve signage, visibility, road safety conditions especially near the roads and other locations where children may be present.
			■ Appropriate traffic signs, signals, lights and markings will be placed at the required areas to prevent potential accidents/incidents. Barriers will be placed at the required areas to protect both human health and assets.
				■ The record of the number of traffic-related incidents involving contractor workers, subcontractor workers and external persons,
				■ The record of the number of full road closures caused by Project activities,
				■ The record of the number of grievances received and percentage of grievances resolved positively,
				■ The record Stakeholder engagements,
				■ Traffic accident /emergency response actions,
				■ Training Records of Drivers.

Infrastructure, Utilities and Services	Construction	General engineering/construction works	■ An Emergency Preparedness and Response Plan will be prepared and implemented during the construction phase of the Project, ■ A Traffic Management Plan will be prepared and implemented, ■ Before the establishment of the construction and the workers' accommodations, an engagement with the local authorities, including the Municipalities, will be held, and energy, transportation and water demand of the Project will be shared, ■ Workers' accommodation will provide health services to the Project workers to not create pressure on the health services of the local communities, ■ At minimum first aid and the medical unit will be established, ■ District or province government hospitals will be used when required, ■ In case of damage to the local infrastructure, including but not limited to telecommunication, electricity, road and water sources, immediate maintenance will be applied, ■ A Project-specific Grievance Mechanism will be used to record, avoid, and solve the incident caused by the Project on the local infrastructure.	■ The record of the number of traffic-related incidents involving contractor workers, subcontractor workers and external persons, ■ The record of the number of full road closures caused by Project activities, ■ The record of the number of grievances related to access to education and health received from the external stakeholders and percentage of grievances resolved positively, ■ The record of emergency response actions, ■ The usage of water sources affecting the local communities.

Component	Phase	Project action	Mitigation measures	Monitoring measures
	Operation	Plant/infrastructure operation	■ An Emergency Preparedness and Response Plan will be prepared and implemented during the construction phase of the Project, ■ A Traffic Management Plan will be prepared and implemented, ■ Before the establishment of the construction and the workers' accommodations, an engagement with the local authorities, including the Municipalities, will be held, and energy, transportation and water demand of the Project will be shared, ■ Workers' accommodation will provide health services to the Project workers to not create pressure on the health services of the local communities, ■ At minimum first aid and the medical unit will be established, ■ District or province government hospitals will be used when required, ■ In case of damage to the local infrastructure, including but not limited to telecommunication, electricity, road and water sources, immediate maintenance will be applied, ■ A Project-specific Grievance Mechanism will be used to record, avoid, and solve the incident caused by the Project on the local infrastructure.	
Gender Issues	Construction	General engineering/construction works	Since these inequalities in the existing social structure are at risk of emerging in the activities originating from the Project and in the opportunities offered by the Project, necessary measures will be developed and implemented. In addition to the measures to be taken by the Project, enhancement measures will be implemented to increase women's use of the Project opportunities. ■ For the job opportunities and benefits created within the scope of the Project to be equally beneficial, it will be ensured that the vulnerable groups, especially those affected by the Project, and women are informed at a sufficient level, ■ Priority will be given to women when for the local employment and procurement opportunities. ■ The Project will ensure that women of the local communities are informed about the Project on a sufficient level; women-only participation meetings will be held, when necessary, It is recommended to develop and implement the Gender-Based Violence and Sexual Harassment contractor procedure to eliminate the risks of Gender-Based Violence and Sexual Harassment that may arise within the scope of the project. This procedure will include and define the following topics: ■ Contractor policy prohibiting sexual harassment, ■ Sexual harassment incident referral and reporting plan, ■ Notice to employees of the policy against sexual harassment, ■ Orientation training on policy against sexual harassment and gender-based violence, ■ Monitoring and reporting of employee participation in orientation training, ■ Contractor participation in sexual harassment meetings and workshops, ■ Zero tolerance policy against violence and harassment, ■ Mechanisms for reporting prohibited behaviour, consequences of violations, and suspected violations, ■ Planning not to leave dark areas and blind spots during the operation and construction process, ■ Effective Use of the Grievance Mechanism for these measures is one of the most important tools to detect and prevent risks early. The Project-specific GRM Procedure for the effective use of the grievance mechanism is included in the Project SEP document. ■ In parallel with the actions included in this document, support will be provided to ensure that women have access to the Project's GRM. The Minimum Requirements defined above against Sexual Harassment and gender-based violence will be implemented at all Phases of the Project.	■ The record of women's participation in public information disclosure meetings, ■ The record of the number of grievances related to gender-based violence and sexual harassment received percentage of grievances resolved positively, ■ The record of Project workers' training on gender-based violence and sexual harassment, ■ The usage of water sources affecting the local communities.
	Operation	Plant/infrastructure operation		

Component	Phase	Project action	Mitigation measures	Monitoring measures
Cultural Heritage	Construction	General engineering/construction works	■ Cultural Heritage Management Plan and Chance Find Procedure, which are necessary for the management of the “chance finds”, prepared in compliance with the project organization will be implemented. All operators, who are to be engaged in the soil works, and project workers should receive training related to “project requirements, protection of cultural and archaeological heritage, laws and legislations related with the archaeological and cultural heritage and cultural heritage management plan and chance find procedures”. ■ In case any chance find is encountered during the construction activities, the further steps should be taken in accordance with the plans and procedures and the relevant bodies and the Directorate of the Museum will be notified immediately. In cases where any find or information associated with archaeological potential of the site is already discovered, relevant instructions about the sensitivity of the site will be shared with all construction teams a few days before the construction activities. The construction activities will be conducted with appropriate equipment and methods. The appropriate equipment will be identified together with the directorate of the museum and the construction teams. ■ Protection of site: chance find should not be moved, removed or further disturbed ■ In particular, all operators and Project workers assigned to land preparation works should receive training on project requirements, protection of cultural and archaeological heritage, laws and regulations regarding archaeological and cultural heritage, Cultural Heritage Management Plan and Chance Find Procedure;	■ Presence of two settlements within four km of Project Area. ■ Absence 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.
Visual Aesthetics	Construction	General engineering/construction works	■ There are no industry standards or best practice guidance regarding with landscape mitigation and management within the scope of the national legislation. The proposed mitigation measures associated with the Project comprises of professional judgement. ■ After the completion of construction, the areas used as construction area will be returned to their original use. ■ During the construction phase, restricted hours of working will be proposed especially for built up areas. Using machinery during those hours should be avoided in residential properties. ■ The housekeeping of the entire Project Area will be given importance throughout the life of the Project. ■ To minimize light spillage from the site, every effort should be made to minimize the number of lights consistent with health and safety standards. In a similar way, all lights should be shielded and as much as possible pointed to the ground to avoid direct light effects on sensitive receptors around the Project Area. ■ Regular monitoring of the affected people’s grievances with regard to visual impacts. For this, the external grievance mechanism should be implemented properly, and all stakeholders should have access to this mechanism. ■ Implementation of dust suppression during construction.	■ Grievance records

Component	Phase	Project action	Mitigation measures	Monitoring measures
	Operation	Plant/infrastructure operation	There are no industry standards or best practice guidance regarding with landscape mitigation and management within the scope of the national legislation. The proposed mitigation measures associated with the Project comprises of professional judgement. ■ The housekeeping of the entire Project Area will be given importance throughout the life of the Project. ■ To minimize light spillage from the site, every effort should be made to minimize the number of lights consistent with health and safety standards. In a similar way, all lights should be shielded and as much as possible pointed to the ground to avoid direct light effects on sensitive receptors around the Project Area. ■ Regular monitoring of the affected people's grievances with regard to visual impacts. For this, the external grievance mechanism should be implemented properly, and all stakeholders should have access to this mechanism.	■ Grievance records
Physical Components				
Air Quality	Construction	General engineering/construction works (i.e., land clearing, ground excavation, cut and fill operations, camp site operations) Material transportation	■ Dust will be supressed by spraying water at construction sites and transportation routes, especially in hot-dry seasons and in windy conditions; ■ Loads in all trucks transporting dust-generating materials will be sprayed with water to suppress dust (keeping the material moist) and trucks carrying fine material (excavation soil or fine material, etc.) will be covered with tarpaulin to prevent dust emissions; ■ Skidding will be avoided during loading and unloading; ■ Completed earthworks will be covered and sealed - as soon as reasonably practicable after completion; ■ In case alternative roads are present, construction traffic will avoid passing through the settlements. If roads through settlements cannot be avoided, necessary measures (i.e., speed limits) will be taken to prevent/minimise transportation related emissions and communities will be informed about the activities and schedule; ■ Speed limits will be enforced, vehicle movements will be limited and idling will be prohibited;; ■ Campfires or burning materials will be prohibited; ■ Activities will be conducted trying to use the minimum required number of means at the same time; ■ Transportation distances will be minimized where possible; ■ Vehicle engines and other machinery will be idled for short periods during duty, to avoid unnecessary emissions by turning the vehicles off and on frequently; ■ Machinery and equipment will be periodically checked and maintained to ensure their good working condition and for compliance with standards and technical regulations for the protection of the environment and have appropriate certifications; ■ Emergency generator working hours will be recorded and necessary emission measurements will be conducted in case of exceeding 500 working hours in a year. Monthly operating hours of the previous year and the records regarding the amount of gas/fuel consumed in emergency situations and the frequency of the emergency (year/day) will be reported to Provincial Directorate of Environment, Urbanization and Climate Change (PDEUCC) until January 31st of each year; ■ Exhaust gas emission arising from the engine land vehicles in traffic will comply with the Regulation on Control of Exhaust Gas Emissions. Vehicles will be subjected to appropriate routine maintenance programs and emission measurements as required by the regulation. The use of vehicles that do not comply with the emission limits will not be permitted until such vehicles will be serviced and re-tested. Emission measurements of heating centers in the construction camps (if any) will be conducted according to Regulation on Control of Air Pollution from Heating if the thermal power is below 1000 kW and Regulation on Control of Industrial Air Pollution if the thermal power is above 1000 kW; ■ Stockpiles will be kept for the shortest possible time; ■ Consider the prevailing wind direction when siting stockpiles to reduce the likelihood of affecting sensitive receptors; ■ Slow down or cease the dust generating work under strong winds, such as reducing work activities or using water spray to reduce dust dispersion; ■ Minimize material handling and avoid double handling; ■ Electric small-scale mechanization and technical tools will be used when available and feasible; ■ Provide dust masks to workers on site where dust levels are likely to be excessive;	■ Grievances records ■ Air quality monitoring results ■ Regular (daily) visual monitoring ■ Maintenance records of vehicles and equipment ■ Warnings/penalties given by public authorities

Component	Phase	Project action	Mitigation measures	Monitoring measures
			■ During the second half of the August 2023, ■ additional dust water suppression methods will be applied, such as increasing the water spraying; ■ the number of the vehicles in this period will be kept at a minimum, as much as possible.	
	Operation	Plant/infrastructure operation	■ Vehicle engines and other machinery will be kept turned on only if necessary, avoiding any unnecessary emission; ■ Vehicles will be periodically checked and maintained to ensure their good working condition; ■ Number of vehicles operating simultaneously will be kept at a minimum.	■ Maintenance records of vehicles and equipment
Noise and Vibration	Construction	General engineering/construction works Material transportation.	The following control measures will be applied where possible: ■ Selection of equipment with lower sound power levels; ■ Installing silencers for fans; ■ Installing suitable mufflers on engine exhausts and compressor components; ■ Installing acoustic enclosures for equipment casting radiating noise; ■ Limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas; ■ Speed limits applied throughout site for the Project vehicles that will transport construction materials / equipment; ■ Properly refurbished and/or new machinery, equipment and vehicles will be used to the extent possible; ■ Any component of machinery or equipment, which is thought to generate excessive noise (e.g., a defective muffler, broken or loosely placed engine hood) will be discarded if said components cannot be maintained/repaired and they will be replaced as appropriate; ■ Engine covers will be kept closed when the equipment is in operation to minimize noise; ■ Workers will be trained in noise abatement best practices, including avoiding unnecessary operation of engines and switching off equipment when it is not required; ■ Idling of construction vehicles will be avoided; ■ Best management practices (e.g., selection of equipment and work methods) will be used to limit vibration impacts, particularly nuisance vibration. Heightened attention to vibration control will occur when working within 50 meters of residences and other sensitive receptors with high vibration creating equipment. Significant changes to the vibration levels can occur based on the soil conditions and the driving energy of the hammer; ■ Re-locating noise sources to less sensitive areas to take advantage of distance and shielding; ■ Reducing the Project traffic routing through community areas wherever possible; ■ Developing a grievance mechanism to record and respond to complaints; ■ Carrying out the regular maintenance of the construction equipment in order to minimize the possible high noise levels generated by the equipment; and ■ Performing quarterly monitoring campaigns at the baseline noise measurement locations during the construction phase. ■ In case of any Project related noise grievance, noise measurement campaign will be carried out immediately at the area where noise related grievance is received. If monitoring results indicate that noise levels are above the defined limits, at the first stage construction schedule in order to limit the hours of operation or to limit the number of equipment to be operated simultaneously will be reviewed and revised accordingly, if possible. Secondly, if it	■ Grievances records ■ Noise monitoring results ■ Maintenance records of vehicles and equipment ■ Warnings/penalties given by public authorities

Component	Phase	Project action	Mitigation measures	Monitoring measures
			is not possible to revise the construction schedule, noise barriers without any gaps and with a continuous minimum surface density of 10 kg/m2 could be installed as a second option, in order to minimize the transmission of sound through the barrier. Barriers should be located close to the source or to the receptor location to be effective. The exact specifications, location and number of the noise barriers will be determined, if deemed necessary.	
	Operation	Plant/infrastructure operation	■ In case of any noise related grievance, noise measurement campaign will be carried out immediately at the area where noise related grievance is received; ■ Noise levels will be monitored at the receptors where the defined noise limit values are exceeded, at least for a year on monthly basis; and ■ In cases when monitoring results indicate that noise levels are above the defined limits, then noise abatement measures will be implemented (e.g. noise barriers at the source, soundproofing, etc.).	■ Maintenance records of vehicles and equipment ■ Noise monitoring results ■ Grievances records
Soil and Subsoil	Construction	General engineering/construction works; Material Storage Accommodation and management of the workforce	■ Project Soil Management and Erosion Control Plan will be developed and implemented. ■ Land preparation and construction activities will be re-scheduled during extreme weather conditions, when possible, to avoid erosion risk. ■ Erosion control measures, including installation of drainage channels will be implemented as necessary, to prevent movement of sediment off-site, prior to the start of construction operations. ■ Drainage channels and dikes will be installed to prevent runoff to adjacent lands and loss of soil around the temporary excavated material storage areas and bedding, padding, back filling, and aggregate materials. ■ Topsoil management will be prioritized and in case vegetated/uncontaminated land is expected to be permanently removed, the topsoil will be properly stored in accordance with the Regulation on Excavation, Construction and Demolition Wastes issued on March 18, 2004, at Official Gazette no.25406 and re-used for reclamation as necessary. In addition, Kalyon Enerji will ensure that topsoil management will be carried out in line with international standard as well as national standards. ■ Subsoil removal will be completed in compliance with the Regulation on Control of Excavated Soil, Construction and Demolition Wastes issued on March 18, 2004, at Official Gazette no: 25406. ■ Loss of subsoil will be minimized through use of suitable equipment, planning, development of procedures and schedules. ■ Soil stripping will not be carried out during construction activities, unless necessary, to minimize disturbance to vegetation, ground species and soils. ■ Licensed quarries will be used to purchase bedding, padding, backfilling, and aggregate materials. ■ Any excess excavated material will be disposed at licensed storage/recycling facilities as required by the Regulation on Excavation, Construction and Demolition Wastes issued on March 18, 2004 at Official Gazette no.25406. ■ In case a licensed disposal facility is not available, Kalyon Enerji will identify parcels, for which usage rights will be obtained from the respective right holders as per the requirements of the applicable legislation. Environmental and social assessment studies as per Management of Change Procedure will be implemented during selection and entry to the off-site excavated material storage sites. Criteria such as selecting brownfields, that are not used for agricultural or grazing purposes and having a sufficient distance to settlement areas and will be considered in the selection of excavated material storage sites. ■ The Project will comply with relevant legal and project safety requirements to avoid leakages from hazardous materials (chemicals, liquids etc.) storage facilities on-site; ■ The areas, where the hazardous materials (chemicals, liquids etc.) storage tanks are located (i.e., hazardous material storage areas), will be designed and constructed to avoid potential contamination into the soil (paved areas with sufficient secondary containment, proper drainage systems, storage as per Safety Data Sheet (SDS) requirements etc.). ■ Project Pollution Prevention Plan and Waste Management Plan will be developed and implemented to ensure that the amount of release and spills are avoided or managed in a timely manner before reaching substantial amounts that may potentially affect the soil quality. ■ The temporary waste storage areas will be constructed in accordance with the Regulation on Waste Management issued on April 02, 2015, Official Gazette no: 29314 and GIIP. ▪ The area will away from any traffic, the facilities, or the buildings. ▪ There will be a designated area for the licensed vehicles to receive the wastes. ▪ Hazardous wastes and non-hazardous wastes will be stored separately, with separate access.	■ Visual Site inspection ■ Monitoring report results ■ Maintenance records of vehicles and equipment ■ Grievances records ■ Waste disposal records ■ Records of the contractual agreements for disposal of wastes

Component	Phase	Project action	Mitigation measures	Monitoring measures
			▪ Precautions against possible fires and spills (fire extinguisher, spill kit, etc.) will be available at the storage area. ▪ The waste storage areas will be covered at the top and on four sides, shielded from precipitation and the elements. Adequate containment and drainage systems will be installed. ▪ Storage area will be closed and locked at all times. ▪ The contact information of the personnel in charge of the waste storage area and warning signs will be posted at the temporary storage areas. ▪ The floor will be concrete, the edges of the floor will be raised with concrete walls/parapets for hazardous waste containment. ▪ To ensure impermeability; cured concrete with a minimum thickness of 25 cm will be applied, where the concrete meets C30 (STS) standard. If this condition is not met, impermeability will be ensured by laying a of impermeable layer at least 1 mm between the concrete and the soil floor. ▪ All wastes will be stored separately from each other, in tanks and containers. Labels indicating the type of waste will be placed for each type of waste. ▪ Disposal of wastes at sufficient frequencies will be scheduled in order not to exceed the storage capacities at the temporary waste storage areas/storage compartments. ▪ Hazardous wastes (except for the medical waste) will be temporarily stored at the waste storage areas for a maximum of 6 months and non-hazardous waste for a maximum of one year. ■ Industrial Waste Management Plans for all temporary waste storage areas established by contractors (including hazardous and non-hazardous waste) will be submitted to the relevant Provincial Directorate of MoEUCC as per the format defined by the MoEUCC and will be renewed prior to expiry of the approvals. ■ Temporary Waste Storage Permit will be obtained from the related Provincial Directorate of MoEUCC for temporary waste storage sites at the site generating hazardous waste of more than 1,000 kg per month. ■ Waste reuse/recycling/recovery/disposal agreements with the Municipality and licensed recovery/disposal - companies will be executed for the management of hazardous and non-hazardous waste. ■ Hazardous Materials and Hazardous Waste Compulsory Liability Insurance will be available as per the relevant provisions of the Regulation on Waste Management for the hazardous waste temporary storage areas/containers regardless of the amount of hazardous waste stored; ■ Official waste declarations for all waste generated will be submitted to the online system of MoEUCC, starting from January each year until the March of each year at the latest. ■ Waste storage outside the designated storage areas will be prohibited. Wastes stored in the interim storage areas will be transferred to the temporary storage area daily; ■ Regular maintenance of vehicles and machinery/equipment will be undertaken to ensure that leakages of oil/fuel or any other hazardous material is prevented; ■ Impervious (concrete etc.) surfaces will be designated for the refuelling and maintenance of the machinery/vehicles. If it is not possible according to the nature of the Project, all refuelling tankers and all heavy machinery used at the site will have drip trays, and these trays will be placed under the pipe connection points to prevent accidental leakage to the soil during refuelling operations; ■ Secondary containments, ponds and drip trays will be checked regularly, especially during extreme weather conditions; ■ Generators will be equipped with drip trays and will be checked regularly to prevent spills; ■ Portable spill containment and clean-up materials (spill kits) with instructions will be made available and easily accessible at the construction site; ■ Training on spill response, use of containment and clean-up material (spill kits) will be provided to all workers; ■ Accidental spills and leakages will be managed through implementation of the Emergency Preparedness and Response Plan. Procedure for management of contamination will be prepared and in case of any spill/leakage, sampling and analyses will be conducted by accredited laboratories. Provisions of the Soil Pollution Control and Point Source Contaminated Sites Regulation will be implemented for investigation, management and reporting of any contamination.; ■ Any equipment, machinery, pumps and trans mixers will be washed only at designated concrete plants, concrete slurry will not be discharged into environment; ■ Project-specific Pollution Prevention Plan will be implemented for the management of sewage wastewater and implemented during the construction and operation phases of the Project. ■ Leakproof report of the septic tanks will be ensured and necessary measures will be taken to prevent them from deforming in extreme weather conditions;	

Component	Phase	Project action	Mitigation measures	Monitoring measures
			■ No untreated wastewater discharges of any type to land will be allowed. Polluted water (if any generated as a result of accidental leakages) will be properly collected or managed to prevent the soil pollution; ■ Discharge of wastewater will be in compliance with the applicable regulatory requirements given in Appendix B.	
	Operation	Plant/infrastructure operation	■ Project Pollution Prevention Plan and Waste Management Plan will be developed and implemented to ensure that the amount of release and spills are avoided or managed in a timely manner before reaching substantial amounts that may potentially affect the soil quality. ■ The areas, where the hazardous materials (chemicals, liquids etc.) storage tanks are located (i.e., hazardous material storage areas), will be designed and constructed to avoid potential contamination into the soil (paved areas with sufficient secondary containment, proper drainage systems, storage as per Safety Data Sheet (SDS) requirements etc.). ■ The temporary waste storage areas will be constructed in accordance with the Regulation on Waste Management issued on April 02, 2015, Official Gazette no: 29314 and GIIP. ▪ The area will away from any traffic, the facilities or the buildings. ▪ There will be a designated area for the licensed vehicles to receive the wastes. ▪ Hazardous wastes and non-hazardous wastes will be stored separately, with separate access. ▪ Precautions against possible fires and spills (fire extinguisher, spill kit, etc.) will be available at the storage area. ▪ The waste storage areas will be covered at the top and on four sides, shielded from precipitation and the elements. Adequate containment and drainage systems will be installed. ▪ Storage area will be closed and locked at all times. ▪ The contact information of the personnel in charge of the waste storage area and warning signs will be posted at the temporary storage areas. ▪ The floor will be concrete, the edges of the floor will be raised with concrete walls/parapets for hazardous waste containment. ▪ To ensure impermeability; cured concrete with a minimum thickness of 25 cm will be applied, where the concrete meets C30 (STS) standard. If this condition is not met, impermeability will be ensured by laying a of impermeable layer at least 1 mm between the concrete and the soil floor. ▪ All wastes will be stored separately from each other, in tanks and containers. Labels indicating the type of waste will be placed for each type of waste. ▪ Disposal of wastes at sufficient frequencies will be scheduled in order not to exceed the storage capacities at the temporary waste storage areas/storage compartments. ▪ Hazardous wastes (except for the medical waste) will be temporarily stored at the waste storage areas for a maximum of 6 months and non-hazardous waste for a maximum of one year. ■ Industrial Waste Management Plans for all temporary waste storage areas established by contractors (including hazardous and non-hazardous waste) will be submitted to the relevant Provincial Directorate of MoEUCC as per the format defined by the MoEUCC and will be renewed prior to expiry of the approvals. ■ Temporary Waste Storage Permit will be obtained from the related Provincial Directorate of MoEUCC for temporary waste storage sites at the site generating hazardous waste of more than 1,000 kg per month. ■ Hazardous Materials and Hazardous Waste Compulsory Liability Insurance will be available as per the relevant provisions of the Regulation on Waste Management for the hazardous waste temporary storage areas/containers regardless of the amount of hazardous waste stored. ■ Waste reuse/recycling/recovery/disposal agreements with the Municipality and licensed recovery/disposal firms will be executed for the management of hazardous and non-hazardous waste. ■ Official waste declarations for all waste generated will be submitted to the online system of MoEUCC, starting from January each year until the March at least. ■ Waste storage out of the designated storage areas will be prohibited. Wastes generated in the interim storage areas will be transferred to the temporary storage area; ■ Regular maintenance of vehicles and machinery/equipment will be undertaken to ensure that leakages of oil/fuel or any other hazardous material is prevented; ■ Impervious (concrete etc.) surfaces will be designated for the refueling and maintenance of the machinery/vehicles. If it is not possible according to the nature of the Project, all refueling tankers and all heavy	■ Visual Site inspection ■ Monitoring report results ■ Maintenance records of vehicles and equipment ■ Grievances records ■ Waste disposal records ■ Records of the contractual agreements for disposal of wastes

Component	Phase	Project action	Mitigation measures	Monitoring measures
			machinery used at the facility will have drip trays, and these trays will be placed under the pipe connection points to prevent accidental leakage to the soil during refueling operations; ■ Generators and any equipment containing chemicals will be placed in localised bunded & kerbed areas for containment of drainage, spillages and leaks in order to minimise contaminated water routed to the drains; ■ Secondary containments, ponds and drip trays will be checked regularly, especially during extreme weather conditions; ■ Portable spill containment and clean-up materials (spill kits) will be made available and easily accessible at the facility, instructions on how to use spill containment and clean-up materials will be included in the kits; ■ Training on spill response, use of containment and clean-up material (spill kits) will be provided to works; ■ In case of a spill/leakage incident on-site, contamination levels will be identified by means of sampling and analyses studies to be conducted by accredited laboratories and the results will be compared with baseline concentrations of the related parameters to plan corrective actions where necessary; ■ Accidental spills and leakages will be managed through implementation of the Emergency Preparedness and Response Plan. ■ Project-specific Pollution Prevention Plan will be implemented for the management of sewage wastewater and backwash wastewater resulting from potable water treatment plant and implemented during the operation phase of the Project. ■ If deemed necessary, leakproof of the septic tanks will be ensured, and necessary measures will be taken to prevent them from deforming in extreme weather conditions; ■ No untreated wastewater discharges of any type to land will be allowed. Polluted water (if any generated as a result of accidental leakages) will be properly collected or managed to prevent the soil pollution;	
Geology and Geomorphology	Construction	General engineering/construction works;	■ Detailed studies on geological and geotechnical components (including seismicity) have already been completed for the Project before the construction phase within the scope of the local EIA. Recommendations in these studies should be implemented. ■ Worksite will be minimized to the smallest extent possible in order to meet Project's works and activities. ■ Construction site will be minimized to the smallest extent possible in order to meet Project's works and activities. ■ The foundations' footprints and depths have been properly dimensioned; hence the excavations and the consequent physical-mechanical disturbances will be minimized. ■ The flattening and excavation operation will be minimized to the extent possible in order to limit the morphological disturbances. ■ Part of the removed material will be re-used as a fill material at the Project Area, if it presents the suitable geotechnical characteristics, in order to limit the use of raw material.	■ Visual Site inspection ■ Monitoring report results ■ Grievances records
Seismicity	Construction	General engineering/construction works; Material Storage Accommodation and management of the workforce	■ Before and during the construction activities in the study area, the provisions of "Türkiye Building Earthquake Regulation" (OG Number: 30364 Date: 18.03.2018) will be complied with. ■ Detailed investigations will be conducted for assessing the stability conditions for the structural elements for both normal operation loads and under seismic loads. Türkiye Building Earthquake Regulation requires certain parameters to be determined prior to the construction. These parameters were determined by the geological and geotechnical investigations for the Project Area. ■ Several structures will be developed as part of the Project and these will all be designed according to Turkish and international design standards requiring specific structural characteristics related to slopes of cuts and fills, footing sizes and many other considerations. ■	■ Prepared geological, geotechnical, and hydrological studies, flood risk assessments ■ Warnings/penalties given by public authorities
	Operation	Plant/infrastructure operation		
Hydrology and Surface Water	Construction	General engineering/construction works; Accommodation and management of the workforce	■ The Project will comply with safety requirements to avoid leakages from hazardous chemicals/materials and liquids (diesel fuel, oil etc.) stored on-site. ■ The areas where the diesel/fuel storage tanks are located (can be named hazardous material storage areas), will be designed and constructed to avoid potential contamination of the soil (paved areas with sufficient secondary containment, proper drainage systems, collection ponds etc.). ■ The temporary waste storage areas will be constructed based on the requirements listed in "Regulation on Regular Storage of Wastes" issued on *Official Gazette* No:27533, Dated: 26/03/2010 (Amended: OG-24/06/2022-31876) and "Regulation on Waste Management" issued on *Official Gazette*, Dated: 02/04/2015, No: 29314 (Amended: OG-23/03/2017-30016).	■ Incident/accident reports ■ Monitoring report results ■ Visual Site inspection ■ Warnings/penalties given by public authorities ■ Training records

Component	Phase	Project action	Mitigation measures	Monitoring measures

			■ Considering the flooding risk, the following engineering studies were taken into account during the Project design phase.
			  ▪ By adding the reinforced concrete structure under the fences, the safety of the work site improved by increasing the height of the security fence, and the site was protected from flood and surface water.
			  ▪ The foundation of the inverter station was raised 60 cm from the ground level against the risk of water rising.
			  ▪ The infrastructure of the inverter station is designed in such a way that the surface and storm water infiltration will be prevented, and water is collected in the water collection -pit -constructed -on the ground level of the station and discharged with the help of a pump.
			  ▪ The manhole cover located at the entrance of the foundation of the inverter station is manufactured as leakproof.
			  ▪ Waterproofing is provided with XPS Board and Membrane insulation materials inside the concrete foundation.
			■ The General Directorate of State Hydraulic Works (abbreviated as DSI in Turkish), and General Directorate of Water Management (abbreviated as SYGM in Turkish) will be consulted regarding hydrological studies and surface water quality and any additional studies will be conducted upon their opinions prior to the construction phase based on the opinions of these institutions.
			■ Safe Fueling and Gasoline Handling Guidelines will be developed in the construction areas. No fueling of vehicles or equipment will take place within excavated areas. If heavy equipment cannot be moved to appropriate fueling points, an impervious surface (such as a drip-tray) will be used for refueling this equipment to prevent accidental releases to groundwater aquifers.
			■ Hazardous materials will not be stored in excavated areas and all handling of all hazardous materials will be in accordance with the Control of Substances Hazardous to Health Procedure. These procedures will be in line with Environmental, Health, and Safety (EHS) Guidelines: Environmental Hazardous Material Management (IFC, 2007).
			■ Procedure for management of the construction site during periods of heavy rainfall will be developed. Exposed surfaces and stored materials will be covered if necessary to reduce the erosion of sediments into surface waters.
			■ Treated domestic wastewater would be reused for local watering of vegetation, dust control or as a fire-fighting reserve in accordance with the standards defined in the Wastewater Treatment Plants Technical Procedures Communique if it is deemed feasible. In case it is decided to reuse wastewater, a Wastewater Reuse Plan will be prepared during the construction phase describing which types of wastewater are suitable for each reuse application and effective control measures will be implemented to prevent misuse of reused water.
			■ The specific items in the management plans will address the measures below related to surface water and protection:
			  ▪ Design and management of spoil and soil storage areas and opening stores of construction materials to control sediment loss into runoff by minimizing the length and angle of slopes.
			  ▪ Schemes to prevent new ground surface eruptions from rainfall erosion or to avoid construction activities during periods of heavy rainfall.
			  ▪ Diversion of external ‘clean’ runoff around the construction area to prevent mixing of ‘clean’ and ‘dirty’ runoff and reduce the size of the required sediment basins.
			  ▪ Conveyance of all 'dirty' runoff to the proposed sediment basins.
			  ▪ Establishment of barrier fences and/or markings to determine the extent of the structure/work area that may be damaged.
			  ▪ Limitation of exposure to the soil and the minimum amount of deterioration required for the construction.
			  ▪ Covering and protection of degraded fertile ground with soil, vegetation, mulch or erosion-resistant material.
			  ▪ Collection and management of polluted water (if any generated by accidental leakages) in order to prevent mixing with any water body.
			  ▪ Protection of existing drainage and irrigation channels, sediment barriers, green areas, protection strips, such as drains, and drainage and erosion control pits by taking appropriate measures.
			  ▪ Collection and settlement of drainage from excavations to remove suspended materials prior to discharge in accordance with required permits. Construction of local perimeter drains around working areas to collect suspended runoff and direct it to a system of settlement basins before discharge following required permits, where practicable.	

Component	Phase	Project action	Mitigation measures	Monitoring measures
			▪ Regular inspection and maintenance of all structures and facilities to ensure proper and efficient operation, especially after heavy rainfall. Removing sediment deposits and disposing of them either by spreading them on site (if uncontaminated) or at a suitably licensed facility. ▪ Training workers (including subcontractor workers) on spill response, use of containment and clean-up materials (spill kits).	
	Operation	Plant/infrastructure operation	■ The project will comply with safety requirements to avoid leakages from hazardous chemicals/materials and liquids stored on-site. ■ The temporary waste storage areas will be constructed based on the requirements listed in “Regulation on Regular Storage of Wastes” issued on *Official Gazette* No:27533, Dated: 26/03/2010 (Amended: OG-24/06/2022-31876) and “Regulation on Waste Management” issued on *Official Gazette*, Dated: 02/04/2015, No: 29314 (Amended: OG-23/03/2017-30016). ■ Leak-proof quality septic tanks will be provided for the collection of the generated domestic wastewater. Collected wastewater will either be collected by vacuum trucks and disposed of at the nearest licensed WWTP as per the agreements/protocols to be executed with the related municipalities/licensed companies or to the main campsite package WWTPs.	■ Incident/accident reports ■ Monitoring report results ■ Visual Site inspection ■ Warnings/penalties given by public authorities
Hydrogeology and Groundwater	Construction	Groundwater Usage General engineering/construction works; Material Storage Accommodation and management of the workforce	■ Safe Fuelling and Gasoline Handling Guidelines will be developed in the construction areas. No fuelling of vehicles or equipment will take place within excavated areas. If heavy equipment cannot be moved to appropriate fuelling points, an impervious surface (such as a drip-tray) will be used for refuelling this equipment to prevent accidental releases to groundwater aquifers. ■ Hazardous materials will not be stored in excavated areas and all handling of all hazardous materials will be in accordance with the Control of Substances Hazardous to Health Procedure. These procedures will be in line with Environmental, Health, and Safety (EHS) Guidelines: Environmental Hazardous Material Management (IFC, 2007). As an example, secondary containment structures will consist of berms, dikes, or walls capable of containing the larger 110 percent of the largest tank or 25 percent of the combined tank volumes in areas where hazardous materials are handled (e.g., fuel stores and loading areas, concrete mixing, hazardous material stores) to prevent hazardous materials entering the site drainage. ■ An Emergency Response Plan (ERP) will be developed in line with Environmental, Health, and Safety (EHS) Guidelines: General EHS guidelines (IFC, 2007) for handling spills of hazardous materials including fuels that will be handled during construction works. ■ The specific items in the management plans will address the measures below related to groundwater and protection: ▪ Preventing the discharge of untreated wastewater, residues or other waste into groundwater or surface water. ▪ Controlling and avoiding wastewater flows from any field activities (i.e., excavations, and vehicle/equipment washing). ▪ Collecting and managing contaminated water (if any generated as a result of accidental leakages) in order to prevent mixing with any water body and topsoil/soil pollution. ▪ Assuring the maintenance of vehicles and equipment (if necessary) in designated areas with impermeable surfaces (concrete floors, etc.) and if necessary, secondary containment systems. ▪ Making portable spill containment and clean-up materials (spill kits) available and easily accessible at the construction site, including instructions on how to use spill containment and clean-up materials. ▪ Training workers (including subcontractor workers) on spill response, use of containment and clean-up materials (spill kits). ▪ Providing adequate and properly maintained tanks, paved ground, spill containment materials and proper secondary containment systems with sufficient volume for fuel/oil storage and for the storage of other fluids and hazardous substances to prevent loss to the soil.	■ Incident/accident reports ■ Monitoring report results ■ Visual Site inspection ■ Warnings/penalties given by public authorities
	Operation	Plant/infrastructure operation	■ The Project will comply with safety requirements to avoid leakages from hazardous chemicals/materials and liquids stored on-site. ■ The temporary waste storage areas will be constructed based on the requirements listed in “Regulation on Regular Storage of Wastes” issued on *Official Gazette* No:27533, Dated: 26/03/2010 (Amended: OG-24/06/2022-31876) and “Regulation on Waste Management” issued on *Official Gazette*, Dated: 02/04/2015, No: 29314 (Amended: OG-23/03/2017-30016). ■ Leak-proof quality septic tanks will be provided for the collection of the generated domestic wastewater. Collected wastewater will either be collected by vacuum trucks and disposed of at the nearest licensed WWTP	■ Incident/accident reports ■ Monitoring report results ■ Visual Site inspection

Component	Phase	Project action	Mitigation measures	Monitoring measures
			as per the agreements/protocols to be executed with the related municipalities/licensed companies or to the main campsite package WWTPs.	
Traffic	Construction	General engineering/construction works	■ A Traffic Management Plan will be prepared within the scope of the Project to maintain traffic safety on the roads to be used and to prevent the risks which may outcome due to Project activities ensuring “safe site, safe vehicle and safe driver” at all times. Following points will be considered as a minimum regarding traffic management: ■ Referring to Stakeholder Engagement section of this ESIA Report, a continuous stakeholder engagement process and grievance mechanism will be in place: ▪ to exchange information on the Project with the local community and other stakeholders; and ▪ to record and respond any complaints and concerns raised by the local community members and other stakeholders. ■ Considerations will be given to traffic volumes at the rush hours of the day and transportation of equipment and materials will be utilized at quieter periods to avoid increased congestion on the roads used by the local communities. ■ It will be ensured that the roads will be made suitable for the heavy vehicle use by taking necessary permits and making necessary arrangements. In case of any damage on the roads, necessary maintenance works will be undertaken. ■ Project site will be equipped with suitable and sufficient lighting to ensure sufficient visibility. ■ At all times vehicles will be kept on designated site roads where established. Off-road driving will not be permitted other than emergency situations, or if no roads have been established yet. ■ If reversing cannot be avoided at the work areas, necessary reversing procedures will be identified including installing reversing aids on vehicles, reversing sensors etc. Trained banksman will be used when reversing cannot be avoided. ■ Parking areas will be designated with signs and reverse parking will be implemented for emergency situations. ■ The routes to be used by pedestrians will be segregated from heavy vehicle routes where possible. ■ The speed limits will be implemented. ■ Seatbelts will be worn in vehicles and machinery when being operated. ■ No vehicle/equipment/material will be allowed to enter work areas before obtaining approval from the security. ■ Loading areas will be designed appropriately to prevent/minimize vehicle/pedestrian contact and property damages. ■ All operators will be licensed/certified for the type of vehicle being driven and will undergo medical surveillance. ■ Repair and maintenance of vehicles will be done by the authorized bodies. ■ Fatigue and distraction procedures will be established considering the local legal requirements and the nature of the work. ■ Project disclosure activities will include informing communities about the project traffic management controls, planned road closures, blasting activities and grievance mechanism. Collaboration with local communities and responsible authorities will be ensured to improve signage, visibility, road safety conditions especially near the roads and other locations where children may be present. ■ Appropriate traffic signs, signals, lights and markings will be placed at the required areas to prevent potential accidents/incidents. Barriers will be placed at the required areas to protect both human health and assets.	■ Visual inspection ■ Monitoring report results ■ Maintenance records of vehicles and equipment ■ Grievances records ■ Traffic accident records ■ Training records on drivers
	Operation	Plant/infrastructure operation	■ A Traffic Management Plan will be prepared within the scope of the Project to maintain traffic safety on the roads to be used and to prevent the risks which may outcome due to Project activities ensuring “safe site, safe vehicle and safe driver” at all times. Following points will be considered as a minimum regarding traffic management: ■ Referring to Stakeholder Engagement section of this ESIA Report, a continuous stakeholder engagement process and grievance mechanism will be in place: ▪ to exchange information on the Project with the local community and other stakeholders; and ▪ to record and respond any complaints and concerns raised by the local community members and other stakeholders.	■ Visual inspection ■ Monitoring report results ■ Maintenance records of vehicles and equipment ■ Grievances records ■ Traffic accident records ■ Training records on drivers

Component	Phase	Project action	Mitigation measures	Monitoring measures
			■ Project site will be equipped with suitable and sufficient lighting to ensure sufficient visibility. ■ At all times vehicles will be kept on designated site roads where established. Off-road driving will not be permitted other than emergency situations, or if no roads have been established yet. ■ Parking areas will be designated with signs and reverse parking will be implemented for emergency situations. ■ The routes to be used by pedestrians will be segregated from vehicle routes where possible. ■ The speed limits will be implemented. ■ Seatbelts will be worn in vehicles and machinery when being operated. ■ No vehicle/equipment/material will be allowed to enter work areas before obtaining approval from the security. ■ All operators will be licensed/certified for the type of vehicle being driven and will undergo medical surveillance. ■ Repair and maintenance of vehicles will be done by the authorized bodies. ■ Project disclosure activities will include informing communities about the project traffic management controls, planned road closures, blasting activities and grievance mechanism. Collaboration with local communities and responsible authorities will be ensured to improve signage, visibility, road safety conditions especially near the roads and other locations where children may be present. ■ Appropriate traffic signs, signals, lights and markings will be placed at the required areas to prevent potential accidents/incidents. Barriers will be placed at the required areas to protect both human health and assets.	
Greenhouse Gas (GHG) Emissions	Construction	General engineering/construction works;	■ The Best Available Techniques should be taken into consideration in Project design as much as possible. The applicability of the Best Available Techniques (BATs) developed within the European regulatory framework [i.e., Integrated Pollution Prevention and Control, "IPPC", BAT Reference Documents (BREFs) according to the European Directive 2010/75/EU (IED)] should be evaluated and integrated into the Project design. ■ All employees will be provided climate, resource and energy efficiency awareness training. ■ The most efficient equipment in terms of fuel usage and effective operation will be chosen. Maintenance of all machinery and equipment will be periodically conducted to ensure efficient fuel use and effective operation as well. ■ Efficient resource and material use will be promoted through the development and implementation of a management plans to reduce direct and indirect GHG emissions due to the Project. Other aspects of resource efficiency regarding water usage are covered in Project Description and related impact assessment section. ■ No idling and out-of-scope operation of the machinery and equipment will be allowed. ■ Vegetation cover will not be disturbed if not necessary ■ In order to reduce the GHG emissions resulting from waste disposal processes, amount of wastes generated as a result of project actions will be minimized and generated wastes will be recycled accordingly. ■ During the closure phase, rehabilitation of land will help to recover lost carbon sink by converting the disturbed land to its original state as much as possible, which will act as a long-term mitigation measure.	■ Resource consumption records ■ Records on data resources invoices ■ Training records ■ Records on amount of generated wastes ■ Maintenance records of machinery and equipment
	Operation	Plant/infrastructure operation		
Biological Components				
Biological Components	**Construction**	General engineering/construction works Material transportation Material storage	Avoidance measures have been considered particularly during the design of the facilities and include: ■ minimisation of the footprint of individual facilities; ■ utilization of the existing modified habitat for placement of temporary facilities was prioritized as much as possible. 1) vegetation and topsoil disturbance: ■ limiting natural vegetation disturbance to the minimum necessary during construction works. For this purpose, limits of temporary and permanent facilities will be clearly signed in order to reduce the risk of footprint creep; ■ in order to minimize the mortality of wildlife species, biological surveys (pre-construction surveys) will be implemented to identify and eventually relocate fauna species. Company's Biodiversity Assistant Specialist will perform pre-construction surveys in the areas where temporary and permanent facilities will be located (not earlier than 7 days before). The survey will focus on fauna species with limited mobility (e.g., mammals and reptiles) that cannot move ahead of construction. If any of these species are observed, they will be collected by the -Company's Biodiversity Assistant Specialist and translocated to undisturbed but similar sites within the AoI. – Reptiles will be caught and moved to a suitable receptor site, no smaller than the capture site and containing the same habitat characteristics and prey availability, at a minimum distance of 50 m from	■ Monitoring reports results of invasive flora species within and around the construction site ■ Observations records of fauna species, and in particular of the identified reptile species of conservation concern within and around the AoI ■ Records of accidents involving wildlife ■ Records of observation of live animal or carcasses along the access road or on the construction site ■ Weekly monitoring results of the riverbank

Component	Phase	Project action	Mitigation measures	Monitoring measures
			the Project footprint during construction phase. If essential works are required in winter, when tortoise are hibernating, then the works area should be checked carefully for hibernation burrows. If a reptile is found during such works and it is hibernating, it should be carefully moved to an alternative part of the site that will remain undisturbed. If this is not possible, then the animal should be taken in to care until it can be released on site, the following spring. – The monitoring of the activity of the identified species of conservation concern Marbled Polecat (*Vormela peregusna*, VU) will be performed, through the use of endoscopic cameras located within the burrows. If any living specimen is observed and essential works that involve breaking ground are required in the areas where burrows are present, a gradual increase of the level of disturbance over a few days (at least 4 consecutive days) will be implemented, in order to allow for the animal to autonomously leave the burrow before it is fully excavated (e.g., day 1 machinery and equipment bought to the working area, day 2 manual excavation, day 3 mechanical excavation in the vicinity of the borrow). ▪ vehicle movement will be restricted to the Project Site and the existing roads that connect the construction sites with the surrounding areas. Off road driving will be prohibited in order to avoid any unnecessary disturbance of natural vegetation. ▪ 2) emission of noise: ▪ night works will be avoided to reduce impacts on nocturnal fauna species; ▪ limiting the number and the speed of vehicle movements along the existing access roads. 3) emission of particulate matter: ▪ Dust deriving from construction material handling will be minimized by using covers and/or control equipment (water suppression, bag house, or cyclone) and increasing the moisture content by water spraying. ▪ Speed limit for all vehicles will be implemented so as not to generate dust emissions, and all trucks will be properly maintained at all times. ▪ Internal roads will be adequately compacted, maintained, and sprayed with water if needed, to minimize dust from vehicle movements. If water spraying is deemed insufficient, other means of surface treatment (e.g., hygroscopic media, such as calcium chloride, and soil natural–chemical binding agents) for unpaved internal roads will be implemented, by using a sprinkler system or a “water-mist cannon”. 4) increase of traffic: ▪ install speed limits and animal crossing signs on the access roads. ▪ avoid the accumulation of stagnant water and organic waste within the construction site and on the roads, that could attract wildlife. ▪ if fauna species are encountered employees and contractors will wait until it moves on by itself or they will ask the assistance of the - authorized personnel trained in reptile transport and/or Company’s Biodiversity Assistant Specialist for its safe removal and relocation in a suitable environment. ▪ awareness among employees and contractors working on site about the protected species/habitats potentially present in the area will be developed, in order to ensure constant monitoring and promote actions to be taken if wildlife is encountered. 5) accidental introduction and spreading of alien species: ▪ the use of non-native flora species, and especially of species classified as invasive alien species must be avoided during rehabilitation/restoration works. ▪ if the spreading of invasive species is observed, an appropriate eradication program will be developed and implemented. Areas cleared during construction for temporary use will be restored, as soon as possible, with the goal of producing a stable vegetative cover to minimize erosion, dust deposition and spreading of invasive alien species, and the aim of re-establish the original habitat with a positive impact on biodiversity. Only plants that are native to the region will be used for restoration and habitat rehabilitation. Seeding and planting of grass and shrub species typical of the local flora will be implemented to ensure optimal ground cover. The use of	

Component	Phase	Project action	Mitigation measures	Monitoring measures
			autochthonous adult plants and/or of seeds collected at the shortest distance possible from the restoration sites will be of fundamental importance in order to maximize the success of the translocation operations (Abeli & Dixon, 2016[3]).	
	Operation	Plant/infrastructure operation	Avoidance measures have been considered particularly during the design of the facilities and include: ▪ minimisation of the footprint of individual facilities. ▪ utilization of the existing modified habitat for placement of temporary facilities was prioritized as much as possible. 1) Presence of permanent infrastructures: ▪ The areas occupied by the new permanent infrastructures will be fenced but modification to fencing will be made in order to minimize the barrier effect. Modifications to fencing can involve maintaining gaps between the base of the fence and the These gaps will occur at regular intervals along the fence line, with a frequency of 1 gap every 100 m. In addition, each single gap could have a height of 10 cm and a width of 1 m. ▪ Non-reflective coating are applied to the panels to minimize reflection, which can attract aquatic insects and possibly birds, as it mimics reflective surfaces of waterbodies. ▪ Flora and fauna specific monitoring campaigns within and without the areas occupied by the new permanent infrastructures will be implemented (see section **Error! Reference source not found.**). ▪ Vehicle movement will be restricted to the existing roads that connect the operation sites with the surrounding areas. Off road driving will be prohibited in order to avoid any unnecessary disturbance of natural vegetation. 2) Emission of noise: No additional minimization measures are deemed necessary in addition to those included in Chapter 7.1.2. 3) Emission of light: ▪ it is recommended to keep the number of light sources to the minimum; ▪ preferred types of light in exterior lighting (e.g.: lights on site due to security reasons) applications are: - low pressure sodium lamps (SOX); - light emitting diodes (LEDs): light source of choice, emitted more directional, warmer colour temperatures (closer to 3000°K); - light triggered by presence detectors, and lights oriented to the ground. ▪ these types of lights should be avoided: – mercury lamps (MBF): bluish-white lamps (attract insects and tolerant bat species); – high pressure sodium lamps (SON): brighter pinkish-yellow lamps, used as road lighting. 4) Introduction of alien species ▪ the use of non-native flora species, and especially of species classified as invasive alien species must be avoided during rehabilitation/restoration works. ▪ if the spreading of invasive species is observed, an appropriate eradication program will be developed and implemented. Areas cleared of vegetation under the PV panels will be restored, as soon as possible, with the goal of recreating the original natural habitat and possibly enhancing flora species richness and diversity. The restoration will be based on a long-term plan, with the aim of producing a stable vegetative cover to minimize erosion, dust deposition and spreading of invasive alien species. Only plants that are native to the region will be used for restoration and habitat rehabilitation. Seeding and planting of grass and shrub species typical of the local flora will be implemented to ensure optimal ground cover. The use of	▪ Floristic and vegetational monitoring report results. ▪ Monitoring results of invasive flora species in the areas under the photovoltaic panels ▪ Terrestrial fauna monitoring results ▪ Records of accidents involving wildlife or the observation of live animal or carcasses along the permanent access roads or in the areas occupied by permanent infrastructures

[3] Abeli T. & Dixon K. (2016). Translocation ecology: the role of ecological sciences in plant translocation. Plant Ecology. 217. 10.1007/s11258-016-0575-z.

Component	Phase	Project action	Mitigation measures	Monitoring measures
			autochthonous adult plants and/or of seeds collected at the shortest distance possible from the restoration sites will be of fundamental importance in order to maximize the success of the translocation operations (Abeli & Dixon, 2016[3]). Literature shows that the construction of Solar Power Plants (SPPs) in desertic and steppe areas, which are often chosen because of their insolation rates and subsequent great potential for producing solar power, could determine positive effects for biodiversity, in terms of increased plant diversity and increased plant biomass (Bai *et al.*, 2022[4]; Graham *et al.*, 2021[5]; Hassanpour *et al.*, 2018[6]). The positive effects derive primarily from the shade offered by the PV panels, which determines a decrease in temperature and in increase in soil moisture in the areas under the panels (Tanner *et al.*, 2020[7]). There could be beneficial effects also per terrestrial fauna species, in particular for small-sized mammals, reptiles and birds, which could find protection from predators offered by the fence and the PV panels themselves.	

[4] Bai Z., Jia A., Bai Z., Qu S., Zhang M., Kong L., Sun R., Wang M. (2022). Photovoltaic panels have altered grassland plant biodiversity and soil microbial diversity. Front Microbiol. 2022 Dec 15;13:1065899. doi: 10.3389/fmicb.2022.1065899. PMID: 36590393; PMCID: PMC9797687.

[5] Graham M., Ates S., Melathopoulos A., Moldenke A., DeBano S., Best L. and Higgins C. (2021). Partial shading by solar panels delays bloom, increases floral abundance during the late-season for pollinators in a dryland, agrivoltaic ecosystem. Scientific Reports. 11. 7452. 10.1038/s41598-021-86756-4.

[6] Hassanpour E., Selker J. and Higgins C. (2018). Remarkable agrivoltaic influence on soil moisture, micrometeorology and water-use efficiency. PLOS ONE. 13. e0203256. 10.1371/journal.pone.0203256.

[7] Tanner K. E., K. A. Moore-O'Leary, I. M. Parker, B. M. Pavlik, and R. R. Hernandez. (2020). Simulated solar panels create altered microhabitats in desert landforms. Ecosphere 11(4):e03089. 10.1002/ecs2.3089.

Environmental and Social Management System

The ESMS of the Project is developed and under continuous improvement to ensure the appropriate management of environmental and social risks to meet the objectives set by existing Kalyon Enerji policies and directives regarding E&S. Environmental and social management system at all phases is required to meet national, international standards, best practices, and Projects' documents and requirements. Referring to the integrated policies, there are targets to achieve the Projects with zero waste, zero incidents, and full respect for humans including vulnerable groups.

Nine elements of ESMS help to assess, control, and continually improve the E&S performance, The Project ESMP has to comply with these elements.

Figure 11: Map Showing Nearest Settlements to the Project Site Elements of ESMS (IFC, 2015)

The E&S mitigation measures defined in the ESIA process were transposed into a Commitments Register serving as a tool which informs the ESMP as well as the associated ESMS planning and processes to be implemented at the various levels of the Project organization to ensure that the Project requirements, regulations, and standards are met.

Kalyon Enerji has developed a set of ESMPs and procedures consistent with their policies and commitments, addressing the environmental and social impacts and relevant mitigation measures identified in the ESIA for each component. The full set of ESMPs that are prepared and will be implemented for fulfilling the commitments undertaken by the Project are presented in the table below with the relevant IFC PSs that each will contribute to comply with.

Table 3: ESMPs

Relevant IFC PS	Plans / Procedures
IFC PS1 5-24: Assessment and Management of Environmental and Social Risks and Impacts	■ ESMP ■ Stakeholder Engagement Plan
IFC PS2: Labour and Working Conditions	■ Human Rights Management Plan ■ Camp Site and Offsite Accommodation Management Plan

Relevant IFC PS	Plans / Procedures
	■ Labor Management Plan ■ Contractor Management Plan ■ Supplier Management Plan
IFC PS3: Resource Efficiency and Pollution Prevention IFC EHS Guidelines	■ Resource Efficiency Management Plan ■ Pollution Prevention Plan (e.g., air, noise, wastewater, soil, groundwater contamination, hazardous material management, etc.) ■ Waste Management Plan ■ Soil Management and Erosion Control Plan ■ Hazardous Material Management Plan
IFC PS4: Community Health, Safety, and Security IFC EHS Guidelines	■ Traffic Management Plan ■ Community Health and Safety Management Plan ■ Security Management Plan ■ Emergency Preparedness and Response Plan
IFC PS5: Land Acquisition and Involuntary Resettlement	■ Not applicable
IFC PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	■ Biodiversity Management Plan
IFC PS7: Indigenous Peoples	■ Not applicable
IFC PS8: Cultural Heritage	■ Cultural Heritage Management Plan and Chance Find Procedure

The ESMPs will be implemented:

- across the Project organization, including, EPC, its sub-contractors, and primary suppliers over which the Client has control or influence.
- inside the Project Area of Influence including the associated facilities (as defined by IFC PS1: “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”).

The ESMPs contain the following components:

- Objectives of the document
- Reference to relevant legal requirements
- Roles and responsibilities for implementation
- Links to other management plans, as necessary
- List of management and mitigation measures
- Monitoring and reporting requirements
- Qualitative or quantitative Key Performance Indicators (KPIs) and measures for assessing the effectiveness of the mitigation measures identified during the impact assessment process

- Training and awareness requirements, as needed
- Inspections, audits, and reviews.

Each management plan has a similar structure, but the level of detail and complexity is appropriate to the expected impacts and risks of the Project identified in the ESIA. The mitigation measures identified in the relevant sections of the ESIA are included in each management plan, which will be disclosed to stakeholders in accordance with the SEP.

The ESMPs will be shared with EPC and subcontractors to ensure they develop their own equivalent management plans, procedures, and work instructions that align with the ESMP. Additional mitigation measures specific to their activities will be included as necessary.

4.0 STAKEHOLDER ENGAGEMENT

A Stakeholder Engagement Plan (SEP) is prepared for the Project within the scope of the Environmental and Social Impact Assessment as a public document. The aim of SEP is to organise, record and formalise all engagement and consultation processes with the various stakeholders and corporate their views and concerns and addressed in them in the entire Project life.

Engagement and Disclosure Process

According to IFC PS1, it is necessary to have effective stakeholder engagement to prevent and reduce social risks and to ensure that the Project maintains a long-term social license to operate. Stakeholder engagement plays a crucial role in establishing strong, positive, and responsive relationships, which are essential for effectively managing the environmental and social risks and impacts associated with a project.

The main objective of effective stakeholder engagement is to provide stakeholders with relevant information about the Project's potential environmental and social impacts through transparent disclosure. This helps ensure that stakeholders have accurate perceptions of the proposed development. It also involves consulting with stakeholders to gather their feedback and opinions, as well as providing a mechanism for addressing any concerns or complaints they may have. Stakeholders can be either external or internal to the Client (presumably the organizations involved in the project) and can include individuals or groups who:

- Directly or indirectly affected by the Project,
- Interested in the Project and its activities,
- Able to influence the Project and the expected results.

The stakeholder engagement process helps to:

- identify and involve all stakeholders potentially affected by the Project,
- ensure a good understanding of the Project activities and potential impacts/benefits,
- identify issues early in the Project cycle that may pose risks to the Project or its stakeholders,
- ensure that mitigation measures are appropriate (implementable, effective, and efficient),
- establish a system for long-term and mutual communication between the Project and stakeholders that benefits all parties.

The stakeholder identification process has been performed by the Client supported by Project consultants during direct meetings with authorities, key stakeholders, and representatives of local communities. Detailed information on stakeholder engagement activities performed and planned are presented in the SEP and included:

- Publication of planned activity (which is the legal definition for the project) through regional and local newspapers and the Project website,
- Public hearings in a frame of public discussion procedure,
- Consultations with public authorities at national, regional, and local levels.

The SEP outlines a systematic approach to stakeholder engagement to support the Client in developing and maintaining strong and constructive relationships with the stakeholders and in addressing their concerns about the Project. The SEP and its implementation fall under the Client's responsibility. In particular, the SEP for the construction phase includes:

- provisions for the disclosure to the affected communities of relevant information on:
  - The purpose, nature and scale of the Project,
  - The duration of proposed Project activities,
  - Potential risks/impacts and relevant mitigation measures,
  - The stakeholder engagement process envisaged going forward and,
  - A Grievance Mechanism is consistent with IFC PS1 requirements scaled to the risks and impacts of the project.
- Provisions for a stakeholders' consultation and participation process appropriate for the potentially affected communities, their decision-making process and the need to reach/include disadvantaged or vulnerable groups,
- Documents to demonstrate how the feedback from stakeholders' consultation and participation has been included in the Client management decision-making process and used to identify specific mitigation measures, as needed,
- The provision of periodic reports to the potentially affected communities to update them on progresses of the implementation of the ESMPs, also addressing eventual grievances received,
- an internal Grievance Mechanism for all employees and contractors and,
- an external Grievance Mechanism with a procedure providing a framework for receiving, recording, and facilitating the resolution of concerns raised by affected communities.

The SEP is considered a living document and will be regularly monitored, reviewed and updated by the Client throughout all stages of the Project implementation to ensure:

- it remains fit for the purpose at each phase of the Project,
- it addresses the outcomes of stakeholders' consultation activities,
- it addresses the grievances received from stakeholders.

The internal communication amongst the various functions and roles and the different Project parties is addressed in the ESMP.

A team was assigned for engagement activities and the grievance mechanism management for the construction phase of the Project.

Project website: kalyonenerji.com

Address: Ehlibeyt Mahallesi Mevlana Bulvarı No:201 Balgat-Çankaya/ANKARA

Hotline: +90 536 271 81 **13**

e-mail: enerji-iletisim@kalyonenerji.com

For the grievances and the requests related with the Project please contact: Site Social Impact Specialist and CLO Mehmet Yüksekyayla myuksekyayla@kalyonholding.com

For the operation phase of the Project, a separate team will be assigned to perform the stakeholder engagement activities. These activities include identification of stakeholders, update stakeholder list, disclose Project related information, conduct consultation with the target stakeholder groups with the identified tools, manage the external grievances and report to top management periodically.

5.0 GRIEVANCE MECHANISM

5.1 Internal Grievance Mechanism

An internal grievance mechanism has been developed for the Project. All direct and indirect Project workers will follow the procedure. The procedure defines grievances as a statement of dissatisfaction over any condition that allegedly harms the employee. A grievance may relate to matters involving internal communication, responsibilities abuse, abuse in the authority line, race, colour, ancestry, national origin, religion, age, sex, sexual orientation, gender identity, sexual harassment, or disability status.

In case requested, all grievance holders will have the right to remain anonymous and maintain their confidentiality. The client will not disclose any grievance holder's credentials without ensuring their consent first. If such consent is given, only the managers and personnel related to that specific grievance will be informed.

5.2 External Grievance Mechanism

An external grievance mechanism of the Client has been developed for the Project. The external grievance mechanism is a part of the management system, and it is responsive to any concerns and complaints, particularly from affected stakeholders and communities. Special care will be focused on training the designated staff involved in the management of the grievance mechanism. The overarching aim of the grievance mechanism is to provide all stakeholders with the opportunity to obtain information about the Client's activities and facilities, deliver their complaints and requests in a structured and formal manner and receive prompt, fair and effective responses.

Any comments or concerns will be brought to the Company's attention verbally or in writing (by post or e-mail) or by filling in a grievance form. The grievance form will be made available on the Company website, at the Project site, at the Mukhtar's office, alongside a description of the grievance mechanism. Grievance forms can then be submitted to the contact points. All grievances will be:

- Acknowledged within seven working days after receipt; and
- Responded no later than within 30 working days after receipt.

Specifically, nominated, and trained members of staff will record grievance information in a grievance register the information in the grievance register will include the Stakeholder name and contact details and details of the grievance and how and when it was submitted, acknowledged, responded to and closed out.

The grievance mechanism is widely announced to the public with stakeholder meetings held for project-affected communities. Additional meetings will be organized to target women Project Affected People (PAPs) and vulnerable groups for sharing information on grievance mechanism that also allows anonymous grievances.

Gender equality is observed by the Client. There is a woman environmental engineer in the Project. She will deal with the complaints and demands of women in the Project area. The grievances will be reviewed by the team according to the Project's human rights and grievance mechanism.

Stakeholder request and grievance form of the Project is presented in Appendix A and ESIA Feedback Form is presented in Appendix B.

APPENDIX A

Stakeholder Request and Grievance Form

kalyon enerji	PAYDAŞ İLETİŞİM FORMU	Doküman No: Yayın Tarihi: 21.09.2020 Rev No: 00 Rev. Tarihi: -

İLETİŞİME GEÇEN KİŞİNİN BİLGİLERİ (İsminizin gizli kalmasını tercih ediyorsanız lütfen boş bırakın. Bildirimleriniz Proje Yönetimi tarafından aynı şekilde değerlendirilecektir.)

Tarih:

İrtibat Bilgisi: (Nasıl irtibata geçilmesini istiyorsanız buna göre gerekli bilgileri veriniz)

Posta yolu ile .....

Telefonla .....

E-posta yolu ile.....

Tepkinizi belirtin: □ Yorum □ Şikayet **Kaydeden:** □ Yorum/ şikayeti sunan kişi □ Diğer (lütfen kim olduğunu belirtin)	**Doldurulmuş İletişim formu suretinin alındığını teyit eden imza** .....

PROJE HAKKINDAKİ YORUMLARINIZ (Gerekirse sayfanın arka kısmından devem edebilirsiniz)

YORUM/ ŞİKAYETİNİZ HAKKINDA BİLGİLER

Yorum/Şikayetinizi tanımlayın (Gerekirse sayfanın arka kısmından devem edebilirsiniz)

Yorum/Şikayetle İlgili Olay Tarihi

□ Tek seferli olay / şikayet (Tarih: .....)

□ Bir defadan fazla mı oldu (Kaç kez? .....)

□ Devam ediyor (Problem halen yaşanıyor)

Problemi çözümlemek için ne öneriyorsunuz? (Gerekirse sayfanın arka kısmından devem edebilirsiniz)

Bu kısım Proje Yönetimi tarafından doldurulacaktır.

YORUM DURUMU		
Yorum Kayıt (E/H)	**Sunum tarihi:**	**Kaydeden:**
Gerekli Tepki (E/H)	**Müdahale tarihi:**	
ŞİKAYETÇİ DURUMU		
Şikayet Kayıt (E/H)	**Sunum tarihi:**	**Kaydeden:**
Cevap Gönderim Tarihi:	**Şikayet kapatıldı (E/H):**	**Kapama tarihi ve imzası:**
İrtibat Numarası	**0536 271 81 13**	

APPENDIX B

ESIA Feedback Form

You can write your questions and opinions about the Environmental and Social Impact Assessment study prepared Project to the following addresses.

ESIA Feedback Form	
Name-Surname	
Address	
Phone Number	
Date	
Concerns, expectations, questions or complaints on the ESIA report	

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