TÜRKİYE PETROLLERİ ANONİM ORTAKLIĞI

OTC OFFSHORE TECHNOLOGY CENTER

SAKARYA GAS FIELD DEVELOPMENT PROJECT

CONTRACT NO: SC26-2-PRJ-PU-CNT-00036

SUPPLEMENTARY LENDER INFORMATION PACKAGE FOR PHASE 3

COMPANY Doc. No. SC26-3-OTC-PRJ-EN-REP-000003

wsp

CONTRACTOR Project No. 24687407

Rev. N°	Date	Issue Type	Prepared by	Checked by	Approved by	COMPANY Acceptance Code
05	11.03.2026	Reissued Final	WSP			
04	11.02.2026	Issued as Final	WSP			
03	11.02.2026	Issued for Review	WSP			
02	03.02.2026	Issued for Review	WSP			
01	24.12.2025	Issued for Review	WSP			
00	18.12.2025	Issued for Review	WSP			
					Classification:	**Internal**

REVISION TRACKING TABLE		
Rev. N°	**Modification Description**	**Modified Page No.**
00	Issued for review with [HOLD]s – excluding Biodiversity Assessment	N/A
01	Issued for review - previous [HOLD] sections completed; Phase 3 Biodiversity baseline updates pending	N/A
02	Issued for review – client comments addressed, Offshore Survey (dated 28.01.2026, and named SC26-3-PER-PRJ-SU-REP-600031_R02) results incorporated	N/A
03	Issued for review – client comments addressed	N/A
04	Issued as final	N/A
05	Reissued as final – Lender comment incorporated: Owner/Executor clarified (TPAO/TP-OTC)	

Information Classification

Code	Description of Information Classification
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Executive Summary

This Supplementary Lender Information Package (SLIP) has been prepared to provide information about the Phase 3 expansion of the Sakarya Gas Field Development (SGFD) Project, summarising the additional assessments conducted, the updated environmental and biodiversity baseline, and the measures in place to ensure continued compliance with IFC Performance Standards, the Equator Principles 4, and Turkish regulatory requirements.

Phase 1 and Phase 2 of the SGFD established the core offshore and onshore infrastructure. Phase 1 achieved first gas in 2023 through an initial set of subsea wells tied back to the Onshore Processing Facility (OPF) via a 165 km Subsea Umbilicals Risers Flowlines (SURF). Phase 2 further expanded the system with an additional 10 wells, a new gas export pipeline to shore, and a Floating Production Unit (FPU), increasing total processing capacity to approximately 20.5 million Sm^3/day. The environmental and social impacts associated with these phases were assessed through full two ESIA processes, and the resulting Environmental and Social Management System (ESMS) has been in implementation since Phase 1.

The SGFD Phase 3 covers three offshore fields within the Western Black Sea: Sakarya, the main production area where the initial wells and infrastructure were developed; Amasra, located northeast of Sakarya and now being incorporated into Phase 3 development; and Göktepe, positioned west of Sakarya and evaluated for future optional tie-ins. Each field has been subject to baseline surveys and technical studies to inform subsea layout and environmental sensitivities.

Phase 3 adds 26 new wells, a new SPS/SURF network, a new-build Floating Production Unit (FPU), and an approximately 180 km gas export pipeline, increasing total production capacity to approximately 46.5 million Sm^3/day.

The SGFD Project has gone through extensive ESIA processes completed for Phases 1 and 2 and new studies have been carried out specifically for Phase 3. The Phase 3 will be managed within the established Environmental and Social Management System (ESMS) already in place for Phases 1 and 2 and the majority of previously developed mitigation, monitoring, and management measures remain applicable.

Key assessments conducted for Phase 3 include updated offshore physical and biological surveys, onshore biodiversity surveys in the landfall area, updated critical habitat assessment, and a comprehensive gap analysis against Lender standards. Results show that environmental and social baseline conditions remain broadly consistent with previous phases, with no new or significant sensitivities identified. Offshore physical parameters, including seafloor morphology, sediment quality, seawater quality, currents and waves, and underwater noise, remain within natural variation. Biological communities (plankton, benthos, fish, and marine mammals) exhibit stable patterns aligned with previous monitoring. Offshore Critical Habitat remains triggered only by three endemic cetacean subspecies, consistent with earlier findings, and no new critical habitat triggers were identified onshore.

At the landfall, direct impacts on sensitive habitats (B1.4 grey dunes, B1.6 coastal dune scrub, G1.1 riparian woodland) require continued application of translocation, restricted-access, and habitat reinstatement measures already defined in the Biodiversity Management Plan. No cultural heritage impacts are expected onshore or

offshore. Social impacts remain limited due to the confined footprint and absence of land acquisition; effects on fisheries remain consistent with earlier phases as the Phase 3 offshore footprint falls on already restricted areas.

The gap analysis against IFC PSs and EP 4 identified only Low and Medium gaps, primarily requiring procedural updates rather than new assessments. These include updates to the Stakeholder Engagement Plan, Human Resources and Labor-related plans, Pollution Prevention and Resource Efficiency Plans, Biodiversity Management Plan, GHG accounting, and Community Health and Safety procedures. All gaps have defined corrective actions and responsible parties.

The Project continues to operate under the existing ESMS, including ESMP, SEP, BMP, OHS, Waste Management, Pollution Prevention, Emergency Preparedness, and Supply Chain Management. The system will be updated to incorporate Phase 3 activities. Contractors and subcontractors are required to align with SGFD E&S standards through contractual agreements, and the FPU builder (Wison New Energies) is operating under certified management systems with supply-chain due diligence and hazardous-materials inventory practices consistent with Lender expectations.

Overall, the SLIP demonstrates that Phase 3 does not introduce new or heightened E&S risks, that existing mitigation measures remain applicable with incremental updates, and that the Project continues to meet IFC PS and EP4 requirements.

Study Limitations

This report has been prepared based on the documentation listed in Section 3.7 provided to WSP by the Turkish Petroleum Offshore Technology Center (TP-OTC or the "Client" or "Project Executor") acting on behalf of Türkiye Petrolleri Anonim Ortaklığı (TPAO, the "Project Owner"). WSP cannot confirm the accuracy of the information provided by third parties during this process.

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

a) The purpose of this report was to prepare a Supplementary Lender Information Package (SLIP) pursuant to the appointment of WSP to act as Consultant for the Sakarya Gas Field Development Project.

b) Except for the Project Executor, any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third parties. Should additional parties require reliance on this report, written authorisation from WSP will be required. WSP disclaims responsibility of consequential financial effects on transactions or property values, or requirements for follow-up actions and costs. No duty is undertaken, nor warranty nor representation made to any party in respect of the opinions, advice, recommendations or conclusions herein set out.

c) The report is based on data and information provided to WSP by the Project Executor, during preparation of the SLIP, by WSP. It is based solely on a review of information and data obtained from the Project Executor as described in this report, and discussion with representatives of TP-OTC, as reported herein. Except as otherwise may be requested, WSP disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to WSP after the time during which WSP submitted the first draft of this SLIP.

d) Project design, technical specifications and project description are currently being evaluated by TP-OTC and its Contractors and changes may occur. This SLIP is based on the Project information made available to WSP as of 18 December 2025.

e) No soil, water, liquid, gas, product, exposure, Occupational Health and Safety (OHS), biological or chemical sampling or analytical testing or social survey or social questionnaire at or in the vicinity of the Project was conducted as part of this SLIP study.

f) In evaluating the Project, WSP has relied in good faith on information provided by other entities noted in this report. WSP has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the Investor. WSP accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

g) WSP makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation. These interpretations may change over time; thus, the client should review these issues with appropriate legal counsel.

In the Gap Analysis Table of this report, WSP has set out its key findings and provided a summary and overview of its advice, opinions, and recommendations. However, other parts of this report will often indicate limitations of the information obtained by WSP and therefore any advice, opinions or recommendations set out in the Gap Analysis Table or in any other sections of this report, should not be relied upon until considered in the context of the entire report.

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Abbreviations

Abbreviation	Definition
TPAO	Turkish Petroleum Corporation
TP-OTC	Turkish Petroleum Offshore Technology Center
WSP	WSP Danışmanlık ve Mühendislik Ltd. Şti.
AoI	Area of Influence
B1.4	Black Sea coastal stable dune grassland (grey dunes) habitat code
B1.6	Coastal dune scrub habitat code
BOTAŞ	Turkish Petroleum Pipeline Corporation
BMP	Biodiversity Management Plan
CH	Critical Habitat
CHA	Critical Habitat Assessment
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CR	Critically Endangered
dB	Decibel
E\&S	Environmental and Social
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EN	Endanger
EP	Equator Principles
EPCI	Engineering, Procurement, Construction and Installation
EOO	Extent of Occurrence
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System

Abbreviation	Definition
EU	European Union
EUNIS	European Nature Information System (Habitat Classification)
FCG	Flooding, Cleaning and Gauging
GHG	Greenhouse Gas
GIIP	Good International Industry Practice
GN	Guidance Note (IFC)
G1.1	Riparian and gallery woodland habitat code
HC	Hydrocarbon
HR	Human Resources
IBA	Important Bird Area
IAS	Invasive Alien Species
IMO	International Maritime Organization
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area
km	Kilometre
LC	Least Concern
LRP	Livelihood Restoration Plan
m	Meter
m^3	Cubic meter
MARPOL	International Convention for the Prevention of Pollution from Ships
MEG	Mono Ethylene Glycol
MoEUCC	Ministry of Environment, Urbanisation and Climate Change
N/A	Not Applicable
NE	Not Evaluated (IUCN Red List Status)
NH_4	Ammonium
NOx	Nitrogen Oxides
NT	Near Threatened

Abbreviation	Definition
OHS	Occupational Health and Safety
OPF	Onshore Processing Facility
PM	Particulate Matter
PPM	Public Participation Meeting
PS	Performance Standard (IFC)
SEP	Stakeholder Engagement Plan
SGFD	Sakarya Gas Field Development Project
SIA	Social Impact Assessment
Sm^3	Standard cubic meter
SO_2	Sulphur Dioxide
SP	Sampling Point
SPS	Subsea Production System
SURF	Subsea Umbilicals, Risers and Flowlines
TCFD	Task Force on Climate-related Financial Disclosures
VU	Vulnerable
XT	Christmas Tree

1.0 INTRODUCTION

WSP Danışmanlık ve Mühendislik Ltd. Şti. ("WSP Türkiye") has been retained by Turkish Petroleum Offshore Technology Center ("TP-OTC", "the Client", or "Project Executor"), acting on behalf of Türkiye Petrolleri Anonim Ortaklığı (TPAO), the Project Owner, to prepare the present Supplementary Lender Information Package (SLIP) for Phase 3 of the Sakarya Gas Field Development (SGFD) Project. This SLIP for Phase 3 has been prepared to inform lenders about the expansion phase of the Project, required additional studies, and updates to the existing management system documentation for the SGFD. Phase 3 will be managed in alignment with the existing Environmental and Social Management System (ESMS) established for the SGFD Project.

The SGFD Project was initiated by the Turkish Petroleum Corporation (TPAO, Project Owner) to extract, transport, and process natural gas discovered in the Sakarya Gas Field, located within Türkiye's Exclusive Economic Zone in the Western Black Sea. Turkish Petroleum Offshore Technology Center (TP-OTC, Project Executor), a 100% TPAO-owned subsidiary, is responsible for Project Management and the execution of Engineering, Procurement, Construction, and Installation (EPCI) activities.

Information presented in this SLIP has been compiled from the Phase 3 Feasibility Report (TP-OTC, June 2025), the Sakarya Gas Field Development Project Phase 3 – Basis of Design (TP-OTC, 10 October 2025), the combined Environmental Impact Assessment (EIA) Report for Phases 2 and 3 (approved by the Ministry of Environment, Urbanization and Climate Change on 12 May 2025), and other technical documentation provided by TP-OTC, presented in Section 3.7.

Based on the information provided in the Basis of Design document for Phase 3, the SGFD Project has been planned and implemented as a three-phase development:

- **Phase 1:** Achieved first gas in 2023 with an initial production rate of approximately 2.8 million Sm^3/day. The phase includes 10 subsea production wells initially plus 2 additional wells (10+2 wells) located in the Sakarya C26 Field, tied back to shore through a 165 km-long, 16-inch (40.64 cm) carbon-steel export pipeline. All production fluids (wet gas) are transported to the Onshore Processing Facility (OPF) in Filyos, Zonguldak Province, where the gas is processed and delivered to BOTAŞ via a 36 km transmission pipeline. The OPF and associated offshore infrastructure are designed to handle up to 10 million Sm^3/day.
- **Phase 2:** Expands production capacity by an additional 10.5 million Sm^3/day through the drilling of 10 new wells, supported by a new Subsea Production System (SPS) and Subsea Umbilicals, Risers and Flowlines (SURF) network. These 10 wells are connected to a Floating Production Unit (FPU) that performs gas processing, dehydration, and Mono-ethylene Glycol (MEG) regeneration. The processed dry gas is exported to shore via an approximately 165 km, 16-inch dry-gas export pipeline and transferred to BOTAŞ through the newly constructed Western Black Sea Phase-2 Pipeline. The Phase 2 FPU is based on conversion of an existing vessel, expected to be moored and commissioned in 2026, increasing the total production capacity to around 20.5 million Sm^3/day by adding 10.5 million Sm^3 /day to the existing capacity.
- **Phase 3 (the subject of this SLIP):** Will further expand production capacity by approximately 26 million Sm^3/day, developing both the remaining Sakarya reservoirs and the Amasra Field located about 40 km northeast of Sakarya. This phase includes the drilling of 26 new wells (16 from Sakarya and 10 from Amasra), plus an optional 6 wells in Göktepe, installation of a new SPS and SURF infrastructure, and deployment of a new-build Floating Production Unit (FPU) with a new dry-gas export pipeline to the onshore receiving facilities. Upon Phase 3 completion, the total SGFD capacity is expected to be approximately 46.5 million Sm^3/day (Phase 1 + Phase 2 + Phase 3).

2.0 PROJECT DESCRIPTION

Phase 3 of the Sakarya Gas Field Development (SGFD) is planned to expand production in the Western Black Sea through additional subsea infrastructure, a new Floating Production Unit (FPU), and a new dry-gas export pipeline to the onshore receiving facilities at Filyos. Under this phase, approximately 26 new production wells (16 in Sakarya and 10 in Amasra) will be developed, bringing the total number of production wells across the SGFD Project to approximately 48. Additionally, 6 optional wells in Göktepe will be considered subject to future decisions. Phase 3 is designed to deliver a net increase of about 26 million Sm^3/day, contributing to a combined total production capacity of roughly 46.5 million Sm^3/day across all phases. The processed dry gas will be exported to the national grid through the BOTAŞ pipeline infrastructure. A general process flow of the Sakarya Gas Field Development is presented in Figure 2-1 and a schematic of the Phase 3 development including the SPS and SURF architecture is presented in Figure 2-4.

The Phase 3 scope includes:

- Drilling and completion of approximately 26 production wells (16 in Sakarya and 10 in Amasra), and 6 optional wells in Göktepe
- Installation of a new Subsea Production System (SPS) infrastructure;
- Installation of a new Subsea Umbilicals, Risers, and Flowlines (SURF) infrastructure;
- Installation and hook-up of a new-build FPU permanently moored at the field; and
- Construction of a new dry gas export pipeline to the onshore receiving facilities.

Three drill centres are planned: DC3 (Sakarya East), DC5 (Sakarya West / Sakarya), DC8 (Amasra) and DC9 (Göktepe). The riser philosophy provides dedicated production risers per drill centre to manage pressure-decline behaviour and production balancing over the field life. The planned development layout and field locations are illustrated in Figure 2-5.

As of the date of this report, early Phase 3 drilling has progressed: four Phase 3 wells have been drilled in Sakarya and two in Amasra; one Amasra well has been completed and tested across four reservoir intervals. Offshore environmental baseline and route surveys for Phase 3 were executed across Sakarya and Amasra; per the Client, survey and sampling coverage was extended toward the Göktepe area to characterise seabed conditions and inform potential future tie-ins. The general development architecture of Phase 3 is shown in Figure 2-6, and a simplified schematic of the Phase 3 subsea system is provided in Figure 2-4.

Associated Facilities (per IFC Performance Standard 1) 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. Based on information available as of this report date, no Associated Facilities meeting this definition have been identified for Phase 3. Should any such facilities be identified during detailed design or execution, they will be screened against IFC requirements and (where applicable) assessed and managed consistent with the IFC Performance Standards.

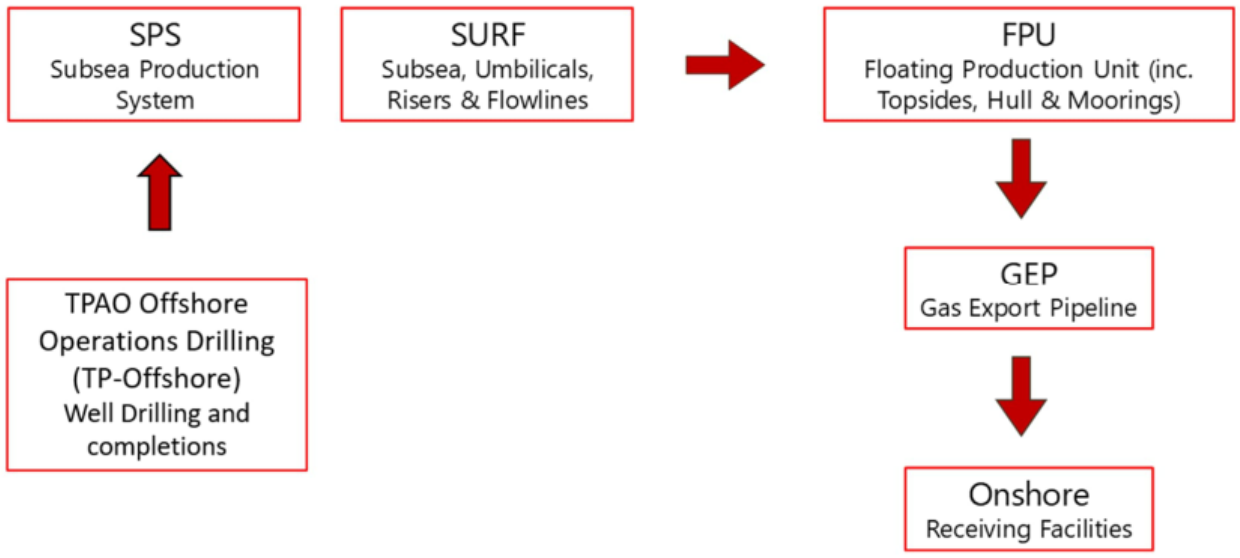


Figure 2-1: General Flowchart

2.1 Subsea Production System (SPS) and Subsea Umbilicals, Risers, and Flowlines (SURF)

The Phase 3 development will involve the installation of new offshore infrastructure to increase the overall field export capacity by approximately 26 million Sm^3/day. This will be achieved through the deployment of a new Subsea Production System (SPS) and Subsea Umbilicals, Risers, and Flowlines (SURF) network supporting 26 new wells (16 in Sakarya and 10 in Amasra) and 6 optional wells in Göktepe, connected to a new Floating Production Unit (FPU) that will be permanently moored at the field. The FPU will receive multiphase production fluids from the Phase 3 subsea system, remove produced water, regenerate monoethylene glycol (MEG), and compress dehydrated gas for export through a new dry-gas pipeline to shore.

The Phase 3 SPS/SURF layout, shown in Figure 2-4, has been designed to ensure operational flexibility, hydraulic efficiency, and integrity across both field clusters. Three drill centres (Figure 2-5) are planned:

- DC3 (Sakarya East)
- DC5 (Sakarya West / Sakarya)
- DC8 (Amasra)
- DC9 (Göktepe)

DC5 and DC8 will each comprise two six-slot production manifolds, accommodating up to 12 wells per drill centre, interconnected by in-field production flowlines. DC3 will include a single six-slot manifold serving up to six wells. The combined subsea architecture provides tie-in flexibility for future field extensions and potential satellite developments. Project development architecture is given in Figure 2-6.

The SURF scope, originally defined in FEED studies, covers the engineering, procurement, and installation of:

- Rigid in-field flowlines and production jumpers;

- Dynamic and static umbilicals for power, control, and chemical injection;
- MEG injection flowlines and associated headers;
- Production, export, MEG, and umbilical risers; and
- Associated termination units, structures, and spools.

The riser configuration follows a dedicated riser per drill centre concept, allowing independent management of declining wellhead pressures, production balancing, and field-wide flow assurance. The riser design accommodates separate production, MEG, umbilical, and gas-export risers on the FPU's riser balcony.

Flowlines and risers will be carbon-steel systems. Infield production flowlines and MEG distribution lines will be routed to minimize crossings with existing Phase 1 and Phase 2 infrastructure and the nearby TurkStream pipelines, while providing tie-in allowances for potential future risers and umbilicals.

Global riser design, field layout, and flow assurance analyses completed during FEED have been integrated into the Phase 3 FPU design. During EPCI execution, detailed engineering will confirm riser slot allocation, flexible and rigid pipeline specifications, and material selection based on internal corrosion control.

The design life of all SPS and SURF components is aligned to 25 years (riser 30 years), consistent with project field-life expectations.

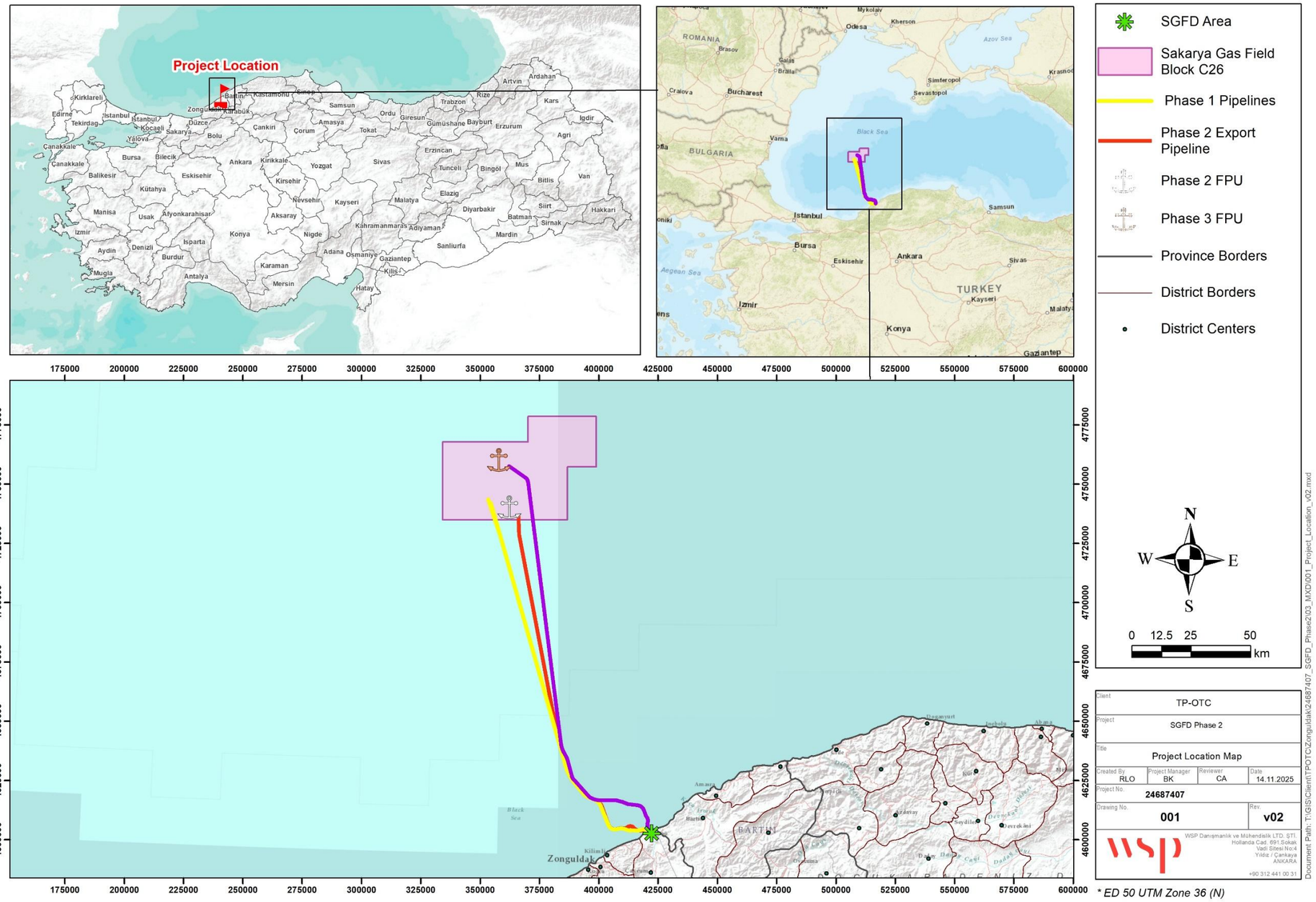
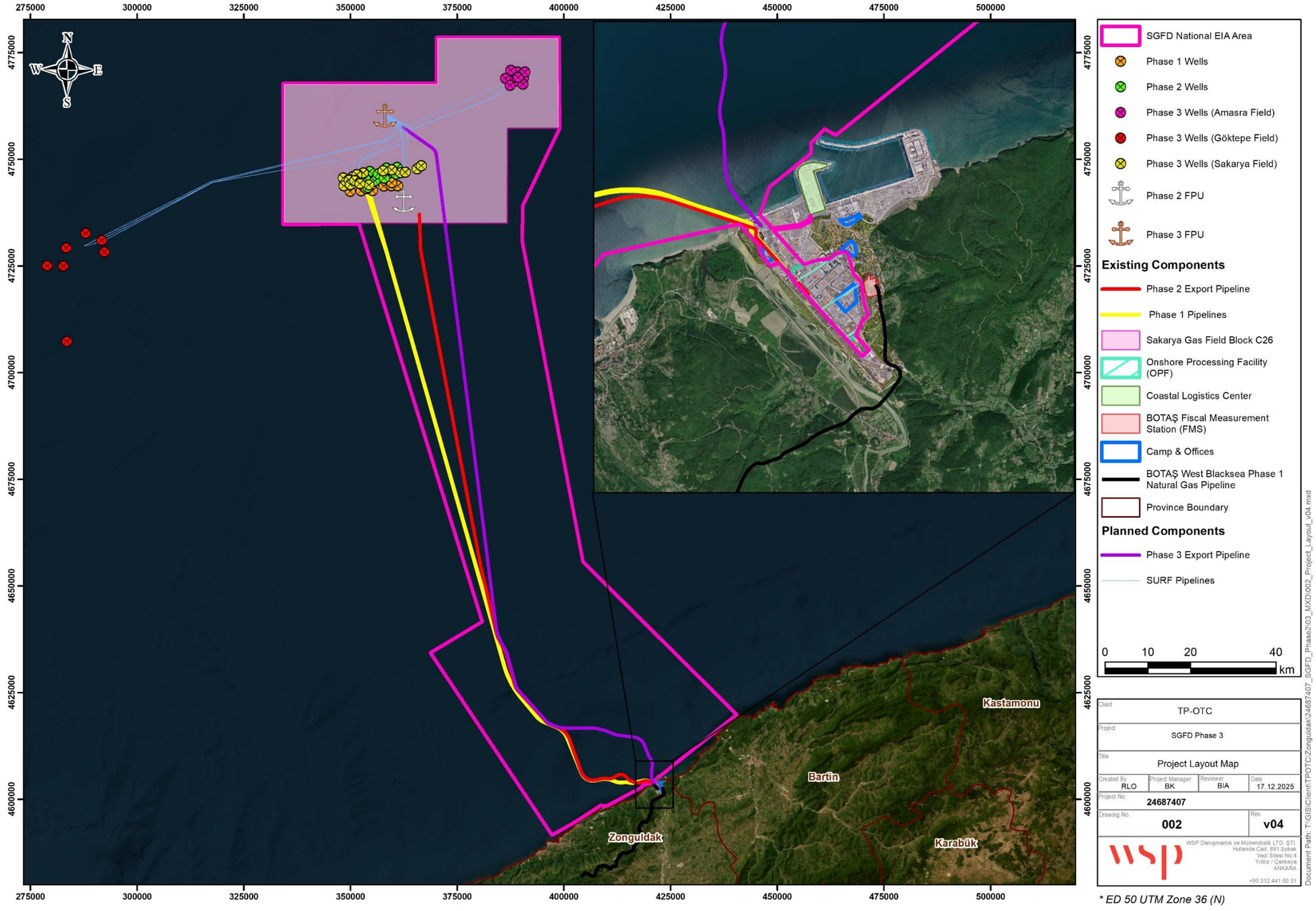


Figure 2-2: Project Location



* *ED 50 UTM Zone 36 (N)*

Figure 2-3: Project Components and Layout

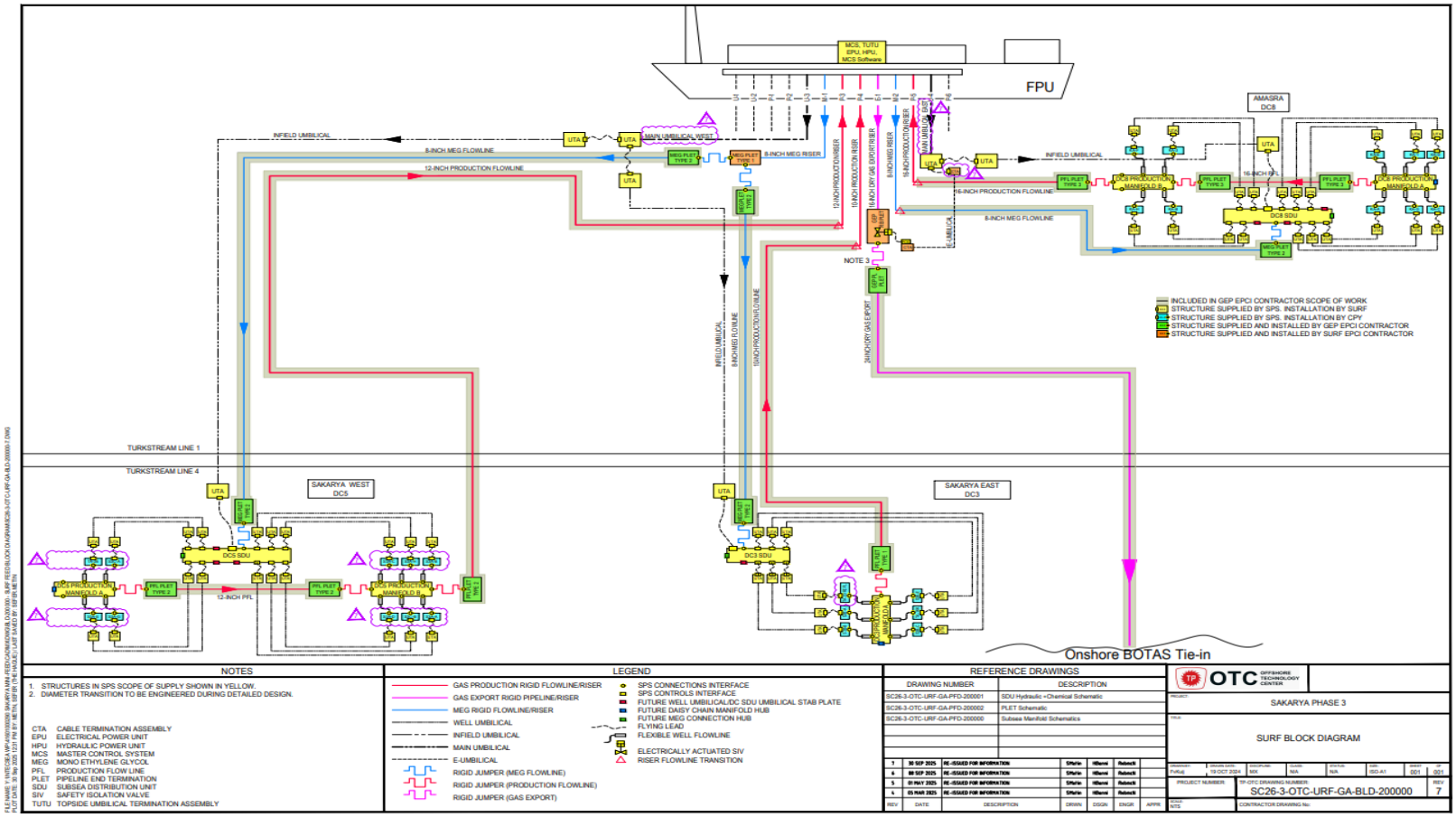


Figure 2-4: Schematic of Phase 3 Development (including SPS and SURF infrastructure)

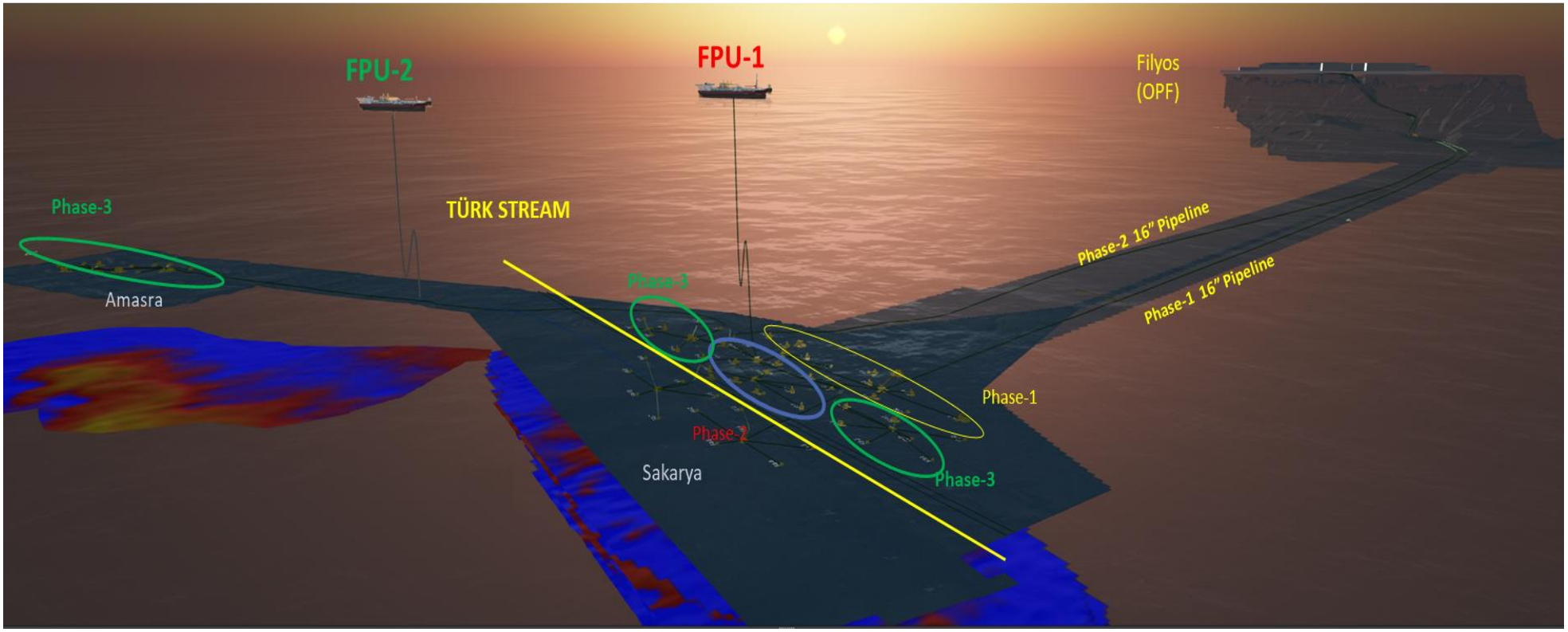


Figure 2-5: Locations of the Project Phases and Fields (Sakarya and Amasra)

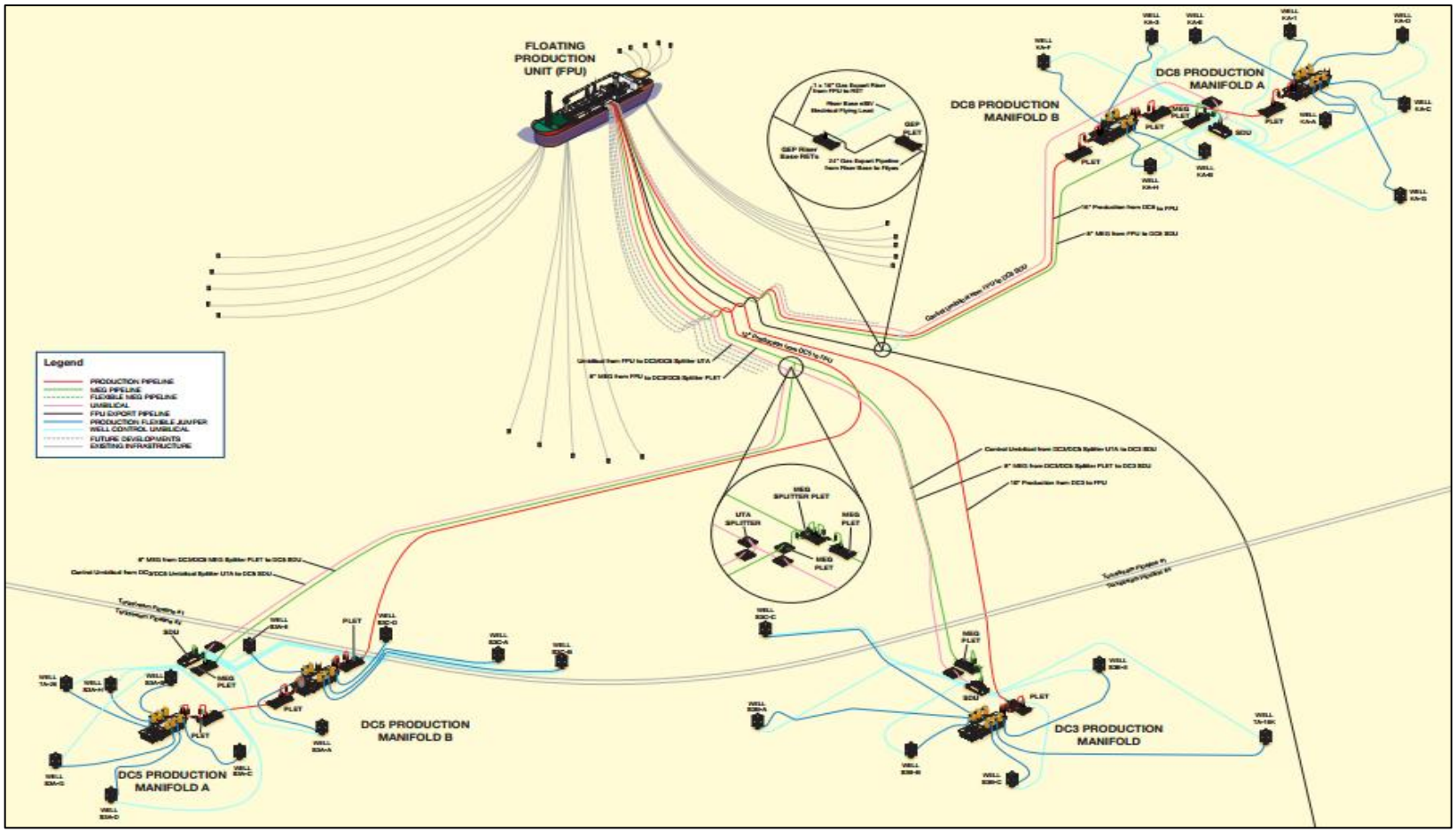


Figure 2-6: Project Development Architecture for Sakarya and Amasra Fields

2.2 Floating Production Unit (FPU)

A new Floating Production Unit (FPU) will be installed as part of the Phase 3 development to process natural gas extracted from the Sakarya, Amasra, and Göktepe Fields, ensuring that the gas meets BOTAŞ sales specifications prior to export through the new dry-gas pipeline to the Filyos Onshore Processing Facility (OPF).

Production from the 26 new Phase 3 wells (and optional 6 wells in Göktepe) will be routed to the FPU, which will be permanently moored on site and anchored to the seabed by suction piles. The FPU will receive multiphase fluids from the Phase 3 subsea production system, remove produced water, regenerate monoethylene glycol (MEG), and compress dehydrated gas for export to shore. It will also provide MEG and chemical injection to the subsea wells and house the control and monitoring systems for all Phase 3 subsea operations.

The FPU will be a new-build, ship-shaped barge design, approximately 273 m in overall length, with a normal operating draught of 16 m and an operational displacement of about 95,000 tonnes. The topsides comprise 17 modular units with a total estimated weight of approximately 26,200 tonnes (subject to change during detailed design). Module configuration and detailed layout are shown in APPENDIX B.

The FPU is organised into eight main functional areas to ensure operational efficiency, safety, and clear separation between hazardous and non-hazardous zones. The areas are described in Table 2-1 and representatively shown in Figure **2-7**.

Table 2-1: FPU Functional Areas Overview

Area	Description
1	Accommodation, helideck, temporary shelter, workshop, laboratory
2	Utility units including heating/cooling, power generation, E-House and workshops
3	Process units including HP/LP gas separation, chemical storage and injection, MEG recovery and regeneration, gas dehydration and compression, flare and vent systems
4	Main deck space between cargo-tank deck and upper modules
5	Machinery area housing marine and electrical instrumentation and generator systems
6	Hull area containing slop and ballast tanks, MEG tanks, chemical tanks, and machinery voids
7	Forward area with firewater pump containers, bosun store, and escape-to-sea points
8	Riser and mooring area including the riser balcony and distribution units

Figure 2-7: General Layout of FPU

The Phase 3 topside configuration will consist of the following modules:

Table 2-2: FPU Topside Modules

Module	Description	Module	Description	Module	Description
M40	E-House	M47	Laydown 1#	M48	Laydown 2#
M64	MEG Regeneration 1#	M50	Seawater Lift / CW / CI	M70	Furnace / Heating Module
M65	MEG Regeneration 2#	M10	HP / LP Separation / MEG	M30	Flare KO Drum
M20	Manifold	M62	HP Gas Compression	F10	Flare Tower (installed in Filyos)
M69	Gas Dehydration / VRU	M49	Laydown 3#	M90 – M96	Material Handling Modules
M60	LP Gas Compression 1#	M61	LP Gas Compression 2#		Total Net Weight ≈ 26 187.9 t

The FPU will be permanently moored with a suction-pile system and equipped with a riser balcony accommodating production, umbilical, MEG, and gas-export risers. Each drill centre will have dedicated risers to optimise pressure management and flow assurance, and spare riser slots have been included for potential tie-ins to other project phases or satellite fields. The unit will receive multiphase fluids, remove water and contaminants, and compress dry gas to approximately 193 barg for delivery to shore, achieving around 80 barg arrival pressure at the OPF battery limit.

The FPU hull includes storage and machinery spaces for ballast, rich and lean MEG, off-spec water, diesel, sodium carbonate, and sodium hydroxide solutions, as well as marine systems such as power generation, firewater, nitrogen, bilge and ballast. Power will be generated by five dual-fuel engine sets, normally operating on processed fuel gas from the topside system.

The living-quarters module is designed to accommodate up to 150 personnel, including a Central Control Room, temporary refuge, offices, welfare and recreation areas, and medical and emergency facilities. A helideck and

SOLAS-compliant lifeboats and life rafts provide for safe evacuation. The unit is designed for autonomous operation, with periodic resupply by Platform Supply Vessels (PSVs) delivering marine diesel oil, MEG, sodium carbonate (10%), sodium hydroxide (25%), and fresh water. Storage and transfer systems are designed for temperature-controlled bunkering, with an autonomy of approximately 21 days for MEG and produced-water handling.

The EPCI Contractor of FPU will carry out engineering, procurement, construction and installation over a 35.5-month duration beginning June 2025, with engineering in Shanghai and fabrication in Nantong. The FPU has a 30-year design life for both topsides and hull/mooring systems and will be built and certified to Det Norske Veritas (DNV) standards with class notations. Structural and marine design is reported to comply with International Maritime Organization (IMO), the International Convention for the Safety of Life at Sea (SOLAS), and ISO 19901-5.

The FPU will initially sail under Liberian flag and will be re-flagged to Türkiye upon arrival. A Position Monitoring System (PMS) will continuously track FPU position and mooring integrity within defined excursion envelopes, ensuring compliance with DNV and IMO stability requirements.

2.3 Gas Export Pipeline

An export pipeline will be constructed to transport dehydrated, sales-quality natural gas from the Phase 3 Floating Production Unit (FPU) to the BOTAŞ grid via tie-in at the Filyos Onshore Processing Facility (OPF). The line will be a 24-inch nominal diameter carbon steel pipeline, extending approximately 180 km offshore to the shore approach and connected to the existing onshore network. Together with the Phase 1 and Phase 2 systems, the Phase 3 export pipeline will contribute to a total field export capacity of about 46.5 million Sm^3/day.

The routing of the pipeline will be optimised to avoid or minimise crossings with existing subsea infrastructure, including the Phase 1 and Phase 2 pipelines and the nearby TurkStream corridors, while maintaining safe clearance from the FPU mooring lines and allowing space for potential future tie-ins or system expansions. The scope comprises an offshore trunkline with shore approach and an onshore connection segment. A mini-FEED for routing and crossings has been completed, covering offshore route selection and the shore/onshore tie-in concept; detailed engineering will finalise the alignment and crossings based on seabed and geotechnical survey data. The export line is designed for a 40-year service life in accordance with relevant international standards and good industry practice.

Construction activities will include trenching or dredging, pipeline laying, and backfilling along the near-shore and offshore sections to ensure stability and protection against hydrodynamic and geotechnical impacts. At the landfall area, temporary construction facilities and access routes will be established for welding, testing, and tie-in operations. Upon completion of installation, the line will undergo pre-commissioning and testing, which will include sequential operations such as Flooding, Cleaning and Gauging (FCG), hydrotesting, dewatering, monoethylene glycol (MEG) swabbing, and nitrogen (N_2) packing prior to handover for commissioning and start-up. These procedures will verify pipeline integrity, ensure internal cleanliness and dryness, and provide a corrosion-protected environment before gas-in.

2.4 Emissions, Wastewater and Waste Management

The wastewater and waste amounts presented in this section represent approximate values calculated using the data provided by TP-OTC, where the corresponding management methods are also detailed.

Since the operational and construction approaches for Phase 3 are largely consistent with Phase 2, the same principles and mitigation measures outlined in the Phase 2 ESIA remain applicable. These measures have already been incorporated into the Management Plans prepared for the Project. However, it should be noted that actual quantities may vary slightly during implementation due to changes in workforce, operational conditions, or site-specific factors.

2.4.1 Construction Phase

2.4.1.1 Emissions

Construction activities may generate emissions of fugitive dust caused by a combination of on-site excavation and movement of earth materials, contact of construction machinery with bare soil, and exposure of bare soil and soil piles to wind.

Exhaust gas emissions such as Nitrogen Oxides (NOx), Carbon Monoxide (CO), Hydrocarbon (HC), Particulate Matter (PM) and Sulphur dioxide (SO_2) will occur due to the diesel engines that will be used for construction equipment and vessels that will be operated during the onshore land preparation / construction activities and offshore activities.

During construction and decommissioning activities, noise and vibration may be caused by the operation of pile drivers, earth moving and excavation equipment, cranes, offshore vessels and the transportation of equipment, materials and people.

2.4.1.2 Wastewater

Domestic Wastewater

During the construction phase of Phase 3, approximately 3,882 personnel in total are planned to be employed, comprising 3,264 for the offshore section and 618 for the onshore section. The total drinking and utility water requirement for the construction workforce has been given as approximately 865,680 liters per day (865.68 m^3/day), of which 727,87 liters per day (727.87 m^3/day) corresponds to offshore activities and 137,870 liters per day (137.87 m^3/day) to onshore activities. It is assumed that all the domestic water to be used by the Project personnel will be converted to domestic wastewater.

Domestic wastewater generated by onshore personnel will be collected by sewage infrastructure and treated in sewage wastewater treatment plants that have been established by TP-OTC. The generated wastewater from these plants is discharged to Filyos River in line with the environmental permit that was issued by the Provincial Directorate of Environment, Urbanization and Climate Change as per the Regulation on Environmental Permits and Licenses.

Domestic wastewater generated offshore is collected by waste ships and will be transferred to the licensed waste reception facilities.

Marine bilge and machinery-space waters

Bilge water (oily water from machinery spaces) from machinery spaces in vessels will be transferred to the licensed waste reception facilities for disposal and will not be discharged into sea.

Ballast and displacement waters

Ballast operations will follow the IMO Ballast Water Management Convention and Guidelines. Where exchange is required, vessels will conduct ballast water exchange ≥50 nautical miles from land and in water ≥200 m depth, subject to navigational safety and flag/class requirements.

Pre-commissioning/hydrotest waters (offshore)

Wastewater resulting from offshore pre-commissioning activities (typically filtered seawater, or filtered seawater with chemical additives including corrosion inhibitor, oxygen scavenger, biocide, and dye to prevent internal corrosion or to identify leaks, MEG or umbilical transportation liquid). All discharges will be managed according to the permits to be obtained. After the completion of the construction phase and before the pipelines and SPS components are put into operations, all the pipes will be pre-commissioned to detect possible faults in the junctions and prevent leakage.

2.4.1.3 Waste

General non-hazardous and hazardous wastes generated due to construction activities are mainly, municipal waste, packaging waste, waste oil, contaminated packaging wastes, hydraulic fluids, used batteries, empty paint and chemical containers, filters, fluorescent tubes, scrap metals and cables, welding waste, end-of-life tires, electrical and electronic wastes, treatment sludge, concrete sludge and medical waste.

The onshore-generated wastes will be segregated at source, temporarily stored in designated waste storage areas within the onshore facility, and subsequently transported to licensed waste management or recovery facilities for final treatment or disposal in compliance with the Waste Management Regulation and other relevant legislation.

Significant additional waste stream specific to vessel operations are residues/sludge from scrubbers (exhaust gas cleaning), scrubber systems washing water, incinerator ash (if any), sludge from engine rooms, fuel tanks and/or oil sediments of vessels. Generated wastes will be stored in separate cans, drums, boxes, bags, or other containers. The wastes that fall under the scope of MARPOL 73/78 will be transported via support vessels to the licensed waste reception facilities. All other wastes will be sent to the onshore temporary storage area at Filyos Port before being transported to a licensed waste reception facility for disposal. Wastes generated onshore will be stored at the temporary waste storage area and then disposed of by licensed companies.

2.4.1.3.1 Dredging Activities

The temporary storage area is located approximately 600 meters from the dredging site, as shown in Figure 2-8. Dumping vessels will deposit the dredged material in this area in a uniform manner.

The total dredged volume for Phase 2 was 104,649.30 m^3, and 81,356.48 m^3 for Phase 1. It is anticipated that similar volume will be dredged for Phase 3. The dredging is planned to be carried out at an average rate of 2,000 m^3 per day, depending on weather conditions. The return of the dredged material to the channel will begin with the installation of a 16-inch diameter pipe into the channel. For Phase 3, a new dredging project will be prepared for MoEUCC approval, and relevant permits will be obtained. All dredging will comply with the Regulation on the Environmental Management of Dredged Material (Official Gazette No. 31008, dated 14.01.2020).

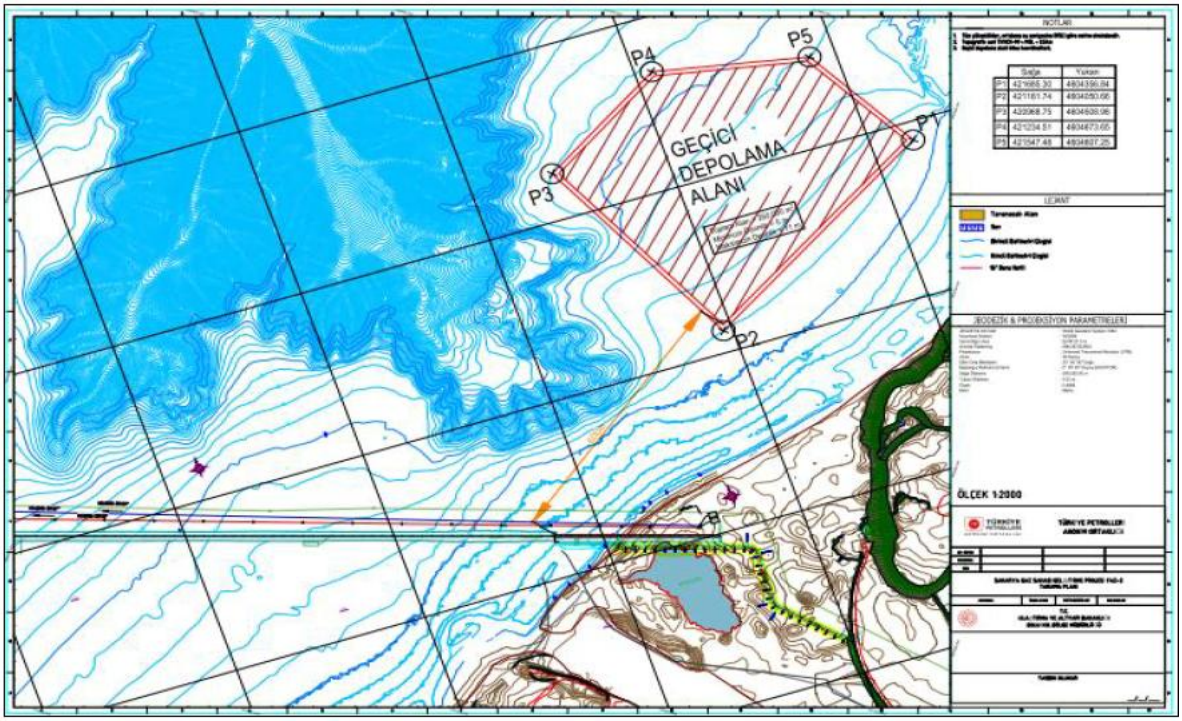


Figure 2-8: Temporary Storage Area for Dredged Material

2.4.2 Operation Phase

2.4.2.1 Emissions

The main sources of air emissions during the operating stage of the Project are associated with exhaust emissions from the FPU, from the combustion of fuel gas for power and heat generation, as well as for driving the LP compressors when required. A Greenhouse Gas Emissions estimate[1] was prepared during the FEED phase of the Project, based on the 25 MSm^3/day design capacity cases. The estimated emissions are around 350,000 tonnes per annum of greenhouse gases generated through fuel combustion. This value will vary throughout the life of the facility and is directly related to the amount of fuel consumed.

2.4.2.2 Wastewater

Domestic Wastewater

During the operation phase of the of the Project, it is planned that approximately 351 personnel will be employed including the onshore and offshore operations. The average daily wastewater generation per person is accepted as 223 liters, and the total daily drinking and utility water requirement for the workers has been calculated as 78,280 liters/day (78.28 m^3/day).

Domestic wastewater generated by onshore personnel will be collected by sewage infrastructure and treated in sewage wastewater treatment plants that have been established by TP-OTC. The generated wastewater from these plants is discharged to Filyos River in line with the environmental permit that was issued by the Provincial

[1] SC26-3-WNE-FFV-GD-REP-115001

Directorate of Environment, Urbanization and Climate Change as per the Regulation on Environmental Permits and Licenses.

Within the scope of Phase 3, domestic wastewater generated in the offshore section will be treated at the domestic wastewater treatment plant located on the FPU. If the treated water meets the discharge limit values, it will be discharged into the receiving environment. In the event of any malfunction or failure in the treatment plant, domestic wastewater will be temporarily stored in septic tanks and transported to onshore via PSVs.

Industrial Wastewater (Produced Water + Cooling Water)

Process-generated wastewater on the FPU will include produced water and the cooling seawater. Produced water as industrial wastewater generated on the FPU will be treated in onboard industrial wastewater treatment units. Discharge will only occur if the treated effluent complies with the applicable regulations and the FPU's discharge permit Special Limits Table (see Section 3.5). Approximately 1,600 m^3/day of produced/process wastewater is expected to be discharged to the sea under these conditions. In the event of any malfunction or failure in the treatment plant, industrial wastewater will be temporarily stored in septic tanks and transported to onshore via PSVs. The parameters and specific limit values applicable to the FPU are those set out in the permit's Special Limits Table, which is provided in Section 3.5 of this report.

Seawater will be used for the cooling of several users, such as the dual-fuel engines and other utility systems in the hull. It will be extracted from over 40 meters below sea level, where the temperature is constant at around 9°C. The seawater will be cross-exchanged with a circulating closed-loop cooling medium and then returned to the sea. The seawater flow is expected to be between 6000 and 7000 m^3/h. The seawater will be discharged to the sea at a temperature no greater than 35°C.

Ballast, Bilge and Slop Discharges

Ballast water operations will occur infrequently during FPU operations and will comply with the IMO Ballast Water Management Convention. Ballast water will be stored in dedicated Water Ballast Tanks (WBTs) isolated from contamination sources and discharged to sea only when confirmed to be free of pollutants. If any contamination is detected, the ballast water will be retained and transferred to shore via PSV for proper treatment at licensed waste reception facilities.

The Black Sea is designated as a Special Area under MARPOL Annex I, which imposes strict controls on bilge and oily water discharges. Accordingly, bilge water, oily sludge, and slop oil from the FPU or associated vessels will not be discharged to sea. All oily waste streams will be collected, stored in dedicated tanks, and regularly offloaded to licensed port waste reception facilities for disposal. These systems will be equipped with oil filtering and automatic stopping devices that prevent discharge exceeding 15 ppm oil content, in accordance with MARPOL and Turkish maritime regulations.

In summary, no bilge or slop oil discharges will occur into the Black Sea, and all oily wastes will be managed through shore-based reception facilities in accordance with international and national requirements.

2.4.2.3 Waste

In the onshore section, typical non-hazardous and hazardous wastes generated during operations will include general office and packaging waste, municipal waste, waste oils, oil-contaminated rags, hydraulic fluids, used batteries, empty paint cans, waste chemicals and chemical containers, used filters, fluorescent lamps, scrap metals and cables, end-of-life tires, electronic waste, treatment sludge, and medical waste. These wastes will be segregated at source, temporarily stored in designated waste storage areas within the onshore facility, and

subsequently transported to licensed waste management or recovery facilities for final treatment or disposal in compliance with the Waste Management Regulation and other relevant legislation.

In the offshore section, the Floating Production Unit (FPU) will generate solid and liquid wastes including divalent salts (estimated at approximately 43 tons/day), domestic waste, production chemical residues, laboratory wastes, equipment lubricants, and medical waste. All solid and liquid wastes (except monovalent salts) will be segregated at source, stored in designated containment areas onboard, and transferred to shore via Platform Supply Vessels (PSVs) for treatment, recovery, or disposal at licensed waste reception facilities.

Monovalent salts, being soluble, will be discharged to sea through the produced water stream, in accordance with environmental permits and discharge criteria approved by the MoEUCC. Divalent salts, which form as insoluble salt cakes with approximately 50% moisture content, will be collected, temporarily stored in skips, and transported to shore for proper disposal. Other typical offshore waste streams include food waste, oily rags, slop oil, and lubricants, all of which will be managed or transferred to licensed port facilities in full compliance with MARPOL Annex I and national waste management regulations.

2.5 Project Schedule

The representative draft schedule shared by TP-OTC for the Project is presented in Figure 2-9. According to the schedule, the FEED studies for the FPU, SPS, SURF, and GEP components of Phase 3 started in 2024 and have been completed in 2025 Q2. The offshore construction works for Phase 3 are expected to commence in 2027. The FPU fabrication and commissioning activities will continue until 2027, and the vessel is expected to sail away from the yard and arrive at the Sakarya Gas Field in 2028. The connections of the FPU with the SURF and SPS systems, as well as offshore commissioning, are planned to be completed by 2028. The first gas production from Phase 3 is targeted for by June 2028.

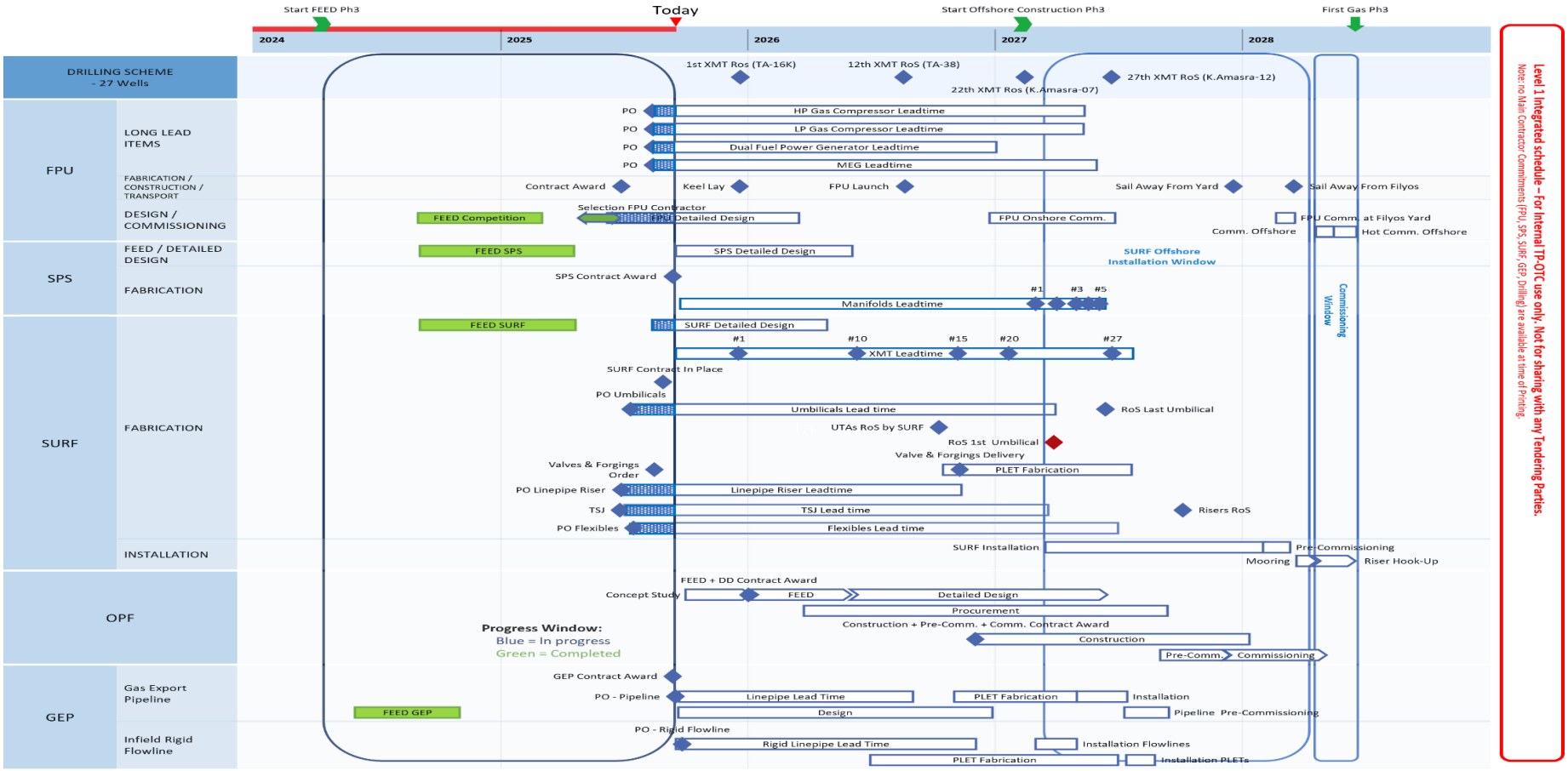


Figure 2-9: Project Schedule as of Q4 2025

3.0 SCOPE AND METHODOLOGY

3.1 Scope

The scope of this Supplementary Lender Information Package is limited to the environmental and social aspects directly associated with Phase 3 of the Sakarya Gas Field Development Project. Phase 3 involves offshore activities within the Sakarya and Amasra fields and onshore works restricted to the landfall area. Components outside these areas, such as the Onshore Processing Facility (OPF), transmission pipelines, and infrastructure were assessed under previous ESIA reports[2], and no changes or upgrades will occur to their operations. These components have already been evaluated and are managed under the existing Environmental and Social Management System (ESMS). The SLIP therefore focuses on:

- Offshore physical environment and biodiversity within the Phase 3 subsea development area;
- Onshore biodiversity in the landfall zone;
- Updates to mitigation measures and management plans where new sensitivities or conditions are identified.

Where no significant changes in sensitivity or baseline conditions were identified, previously established mitigation measures remain applicable and are reported accordingly. This approach ensures that the assessment is both targeted and proportionate to the potential environmental and social impacts of the Project, in line with IFC PS's, EP's, and applicable regulatory requirements.

3.2 Methodology

The SLIP methodology is summarised as follows:

1) Gap Analysis
   - Prepare the Project Description for the Phase 3, define Project Components, actions, impact factors and environmental and social components
   - Identify potential interferences between project actions and impact factors
   - Review most recent versions of the ESMS plans.
   - Define updates to already defined Applicable Requirements
   - Define scoped-in components (offshore physical environment, offshore biodiversity, and onshore biodiversity in the landfall area).
   - Justify scoped-out components (previously assessed and managed under ESMS).
2) Baseline and Sensitivity Evaluation
   - Conduct targeted surveys for scoped-in components.
   - Assess current baseline conditions and ecological sensitivities.
3) Impact Assessment

[2] https://tp-otc.com/surdurulebilirlik/cevre-ve-sosyal-etki-degerlendirmesi/

- Evaluate potential environmental and social impacts for scoped-in components only.
- Consider cumulative impacts with Phases 1 and 2.
- Where no relevant changes in sensitivity or baseline conditions are identified, previously established mitigation measures remain applicable and are reported accordingly.

4) Mitigation and Management Alignment

- Confirm applicability of existing mitigation measures under the ESMS.
- Propose updates only where new sensitivities or risks are identified.

This approach ensures that the SLIP remains focused on the actual footprint of Phase 3 and avoids unnecessary duplication of assessments for components already addressed under prior phases.

3.3 Project Actions, Impact Factors, and Environmental/Social Components

The Project was examined and divided into the following elements:

- **Project phases:** construction, operation, and decommissioning.
- **Project components:** units with specific physical, technological, and location that are part of the Project.
- **Project actions:** individual actions that are necessary for the construction, operation or decommissioning of the various Project components.
- **Impact factors**: forms of direct or indirect interference produced by the Project actions on the environment and society, able to influence the environmental and social state or quality.
- **Environmental and social components**: the environmental and social components potentially impacted by the impact factors.

Project Phases

The **construction phase** includes the construction of the SPS, SURF, export pipeline, and the completion of necessary connections between the production system and FPU.

The **operation phase** includes the functioning of SPS, SURF, the new FPU in Sakarya Gas Field Block DC3, DC5 and DC8, and the transportation of the processed natural gas to the BOTAŞ grid via the new offshore export pipeline.

The **decommissioning** phase deals with the dismission of the abovementioned Project components.

Project Components

The **Phase 3 Project components** are listed below:

- Subsea Production System (SPS);
- SURF - Marine and coastal transition submarine cables, Mono ethylene glycol (MEG) pipeline and gas pipelines connecting to FPU;
- Floating Production Unit (FPU);

- Export Offshore Pipeline (from the FPU to onshore).

Project actions for Phase 3 Project Components

Each project component is characterized by a series of activities needed for its construction, functioning/ operation, or decommissioning which are all likely to affect the environment. These activities are called “Project actions” and a list is listed below and presented in Table 3-1 with the relevant “Impact Factors” associated.

Construction

- **Site levelling and grading**: includes excavation and earthwork to create the surface over which the pipeline in the landfall area will be constructed.
- **Water diversion and dewatering**: water diversion and dewatering may be necessary to allow construction at the landfall area. It includes various techniques like sheet piling, cofferdams, etc., and eventually pumping of the water.
- **Material transportation**: includes transportation of the Project elements and construction material from the ports-station of arrival to the stock yards and camps and from the stockyards/camps to the working or construction areas.
- **General engineering/construction onshore (landfall) works**: includes earthworks (excavation, levelling, grading), laying of concrete foundations, infrastructures, electrical, hydraulic, telecommunication systems, etc. for the landfall area and connection to the OPF. The onshore portion of the pipelines is also included.
- **Offshore excavation (trenching)**: includes the excavation of a trench in shallow water, in correspondence of the land approach.
- **Offshore pipeline lying**: the offshore laying of the pipelines and the connection of the pipelines in the offshore gas field with the SPS.
- **Accommodation and management of workforce**: includes all activities and services relating to the accommodation of workers at camps including bedding, catering, management of free time, and all the administrative and management activities to ensure full respect of workers’ rights and duties.

Operation

- **Plant/infrastructure operation onshore**: includes technical and administrative activities (operation of the infrastructure, surveillance, monitoring, maintenance, supply and services to FPU) to maintain the Project onshore parts in operation according to standard operating procedures. This is already existing in the OPF.
- **FPU/infrastructure operation offshore**: includes technical and administrative activities (operation of the FPU/infrastructure, surveillance, monitoring, maintenance) to maintain the Project offshore parts in operation according to standard operating procedures.

Decommissioning

- **General decommissioning onshore works:** includes demolitions, waste transports, management and restoration of places etc. for onshore portion of the pipelines.
- **General decommissioning offshore works:** includes the decommissioning actions of the offshore infrastructures including the FPU, SURF, pipelines and the connection of the pipelines in the offshore gas field with the SPS.

Table 3-1: Project Actions and Relevant Impact Factors

Project actions	Impact factors
Construction	
Site levelling and grading	Emission of dust and particulate matter Emission of gaseous pollutants and/or greenhouse gases Minor leakage of contaminants into soil Removal of soil Emission of noise onshore Emission of vibrations
Material transportation	Emission of dust and particulate matter Emission of gaseous pollutants and/or greenhouse gases Minor leakage of contaminants into soil Introduction of alien species (potential risk) Emission of noise onshore Emission of vibrations Increase and modification of traffic onshore
General engineering/construction onshore works	Emission of dust and particulate matter Emission of gaseous pollutants and/or greenhouse gases Minor leakage of contaminants into water Emission of light Demand for freshwater Changes in flow/circulation in natural water bodies Emission of noise onshore Emission of vibrations Demand for waste disposal services Discharge of wastewater Introduction of alien species (potential risk) Demand for workforce Demand for goods, materials and services Local inflation Increase and modification of traffic (onshore) Immigration of workers and other people
Offshore excavation (trenching) and sediment storage	Emission of contaminants into marine water (potential risk) Exhaust emissions from vessels Minor leakage of contaminants into water Handling of and resuspension of sediments Presence of the cofferdams Emission of underwater noise Presence of working and moving vessels
Offshore pipeline lying	Emission of contaminants into marine water (potential risk) Emission of light Exhaust emissions from vessels Minor leakage of contaminants into water Emission of underwater noise Handling of and resuspension of sediments Introduction of new infrastructures offshore

Project actions	Impact factors
	Presence of working and moving vessels
Pre-commissioning activities (e.g. pipeline hydrotesting, cleaning and gauging)	Emission of contaminants into marine water (potential risk)
Accommodation and management of workforce	Emission of light Demand for potable water Discharge of wastewater Introduction of new buildings/infrastructures onshore Demand for waste disposal services Demand for workforce Demand for goods, materials and services Demand for energy Immigration of workers and other people
Operation	
Plant/infrastructure operation onshore	Emission of gaseous pollutants and/or greenhouse gases (fugitive) Emission of contaminants into marine water (potential risk) Minor leakage of contaminants into soil Demand for freshwater Discharge of wastewater Emission of noise Emission of vibrations Demand for waste disposal services Demand for workforce Demand for goods, materials and services Demand for energy Increase and modification of traffic Immigration of workers and other people Emission of light Benefit to national economy Presence of new onshore structures
FPU/infrastructure operation offshore	Emission of contaminants into marine water (potential risk) Presence of new infrastructures offshore Demand for workforce Immigration of workers and other people Demand for goods, materials and services Demand for energy Emission of underwater noise Emission of electromagnetic fields (EMF) Discharge of produced water Use of seawater for cooling Presence of working and moving vessels
Decommissioning	
General decommissioning onshore works	Emission of gaseous pollutants and/or greenhouse gases Emission of noise onshore

Project actions	Impact factors
	Emission of vibrations Removal of buildings/infrastructures Demand for waste disposal services Change in land use Demand for workforce Demand for goods, materials and services Demand for energy Increase and modification of traffic Site restoration
General decommissioning offshore works	Emission of gaseous pollutants and/or greenhouse gases Removal of infrastructures offshore Demand for workforce Demand for goods, materials and services Demand for energy Increase in naval traffic Handling of sediments[3]

[3] if the pipelines are reclaimed and abandoned on site, this impact factor would not exist

Environmental and social components

The main environmental and social components that are considered in the gap analysis and relevant subcomponents are listed below.

Onshore (landfall area) components

- Physical Components
  - Air quality
  - Geology and geomorphology
  - Soil
  - Hydrology and surface water quality
  - Hydrogeology and groundwater quality
  - Noise and vibration
  - Visual aesthetics
- Biological Components
  - Flora
  - Invertebrates
  - Fresh water fish
  - Amphibians
  - Reptiles
  - Birds
  - Mammals
  - Habitats
- Social Components
  - Politics and governance
  - Infrastructure facilities (including healthcare and education)
  - Transportation and traffic
  - Land use and agriculture
  - Demographics
  - Employment and livelihoods
  - Cultural heritage and archaeology
  - Onshore Ecosystem services

Offshore Components

- Physical Components
  - Seafloor morphology
  - Sediment (graine size and contaminants)
  - Sea water (chemical and physical)

- Physical oceanography (currents and waves)
- Underwater noise

- Biological Components
  - Plankton
  - Benthos (phyto- and zoobenthos)
  - Fish
  - Marine mammals
  - Sea birds
  - Marine habitats (maps)
  - Critical habitat assessment
- Social Components
  - Marine archaeology
  - Marine Ecosystem services
  - Fishery
  - Marine traffic
  - Other Sea Users

3.4 Potential Interferences between Project Actions and Impact Factors

The two tables below show the potential interferences between the Project Actions and the Environmental and Social components (both listed in the previous section).

Table 3-2: Matrix with Potential Interferences between the Project Actions and the Onshore Environmental Components (both negative and positive interactions are considered

Project Actions \ Environmental Components		Physical Components					Biological Components						
		Soil and subsoil	Air quality	Noise and vibration	Hydrology and water surface quality	Hydrogeology and groundwater quality	Flora	Freshwater fauna	Terrestrial fauna	Birds	Habitats	Legally protected and internationally Protected Areas	Critical and natural habitats
Construction Phase	Site levelling and grading												
	Material transportation												
	General engineering/construction works												
	Accommodation and management of workforce												
Operation Phase	Plant/infrastructure operation												
Decommissioning	General decommissioning works												

Table 3-3: Matrix with Potential Interferences between the Project Actions and the Offshore Environmental Components (both negative and positive interactions are considered)

Project Actions \ Environmental Components		Physical Components					Biological Components						
		Seafloor morphology	Sediments (grain size and chemical characterization)	Seawater (chemical and physical)	Physical oceanography (currents and waves)	Underwater noise	Plankton	Benthic communities (phyto-zoobenthos)	Fishes	Marine mammals	Sea birds	Marine habitats	Critical Habitats
Construction Phase	Offshore excavation (trenching)												
	Offshore pipeline lying												
	Pre-commissioning activities (e.g. pipeline hydrotesting, cleaning and gauging)												
Operation Phase	FPU/infrastructure operation												
Decommissioning	General decommissioning works												

Table 3-4: Matrix with Potential Interferences between the Project Actions and the Social Components (both negative and positive interactions are considered)

Project Actions / Environmental Components		Onshore Social Components							Offshore Social Components			
		Population and Demography	Economy and Employment	Land Use Patterns	Infrastructure and Services	Health Issues and Facilities	Onshore Cultural Heritage	Visual Aesthetics	Marine archaeology	Marine Ecosystem services – Fishery	Marine Ecosystem services – Marine traffic	Marine Ecosystem services – Tourism
Construction Phase	Site levelling and grading											
	Material transportation											
	General engineering/construction onshore works											
	Offshore excavation (trenching)											
	Offshore pipeline lying											
	Pre-commissioning activities (e.g. pipeline hydrotesting, cleaning and gauging)											
	Accommodation and management of workforce											
Operation Phase	Plant/infrastructure operation											
	FPU/infrastructure operation											
Decommissioning	General decommissioning works											

3.5 Identification of Area of Influence

As defined by IFC PS1, the area of influence encompasses, as appropriate:

- The area likely to be affected by: (i) the project[4] and the client's activities and facilities that are directly owned, operated, or managed (including by contractors) and that are a component of the project;[5] (ii) impacts from unplanned but predictable developments caused by the project that may occur later or at a different location; or (iii) indirect project impacts on biodiversity or on ecosystem services upon which Affected Communities' livelihoods are dependent.
- Associated facilities, which are facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable.[6]
- Cumulative impacts[7] that result from the incremental impact, on areas or resources used or directly impacted by the project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted.

Each environmental and social component of the Project has its own sensitivity; therefore, the extent of the AoI has been identified as different for the following categories of environmental and social components:

The AoI for the onshore Physical Environmental Components includes the Project footprint of all onshore infrastructure, with a buffer of 1 km for components such as noise and hydrology, hydrogeology, etc., and a 5 km buffer for meteorology and air quality.

The AoI for the onshore Biological Environmental Components includes the Project footprint of all onshore infrastructure, with a buffer of 200 m for flora and 1 km for fauna.

The AoI for the onshore Social Components includes the main roads leading to the Project site, the nearest settlements, and the municipality and province in which the Project is located, specifically the provincial boundaries of Zonguldak and Bartın.

The AoI for the offshore Biological and Physical Components includes the footprint of the SURF infrastructure, export pipeline and Floating Production Unit (FPU), with a buffer of 500 m along the pipeline route and a 5 km buffer from the FPU.

The AoI for the offshore Social Components includes the fishing communities and villages along the coast, within 4 km from each side of the export pipeline (as anticipated to be announced by the NAVTEX decision), and within 5 km of the shore.

Maps showing the physical, biological and social areas of influence are available in the following figures.

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

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

[6]Associated facilities, 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.

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

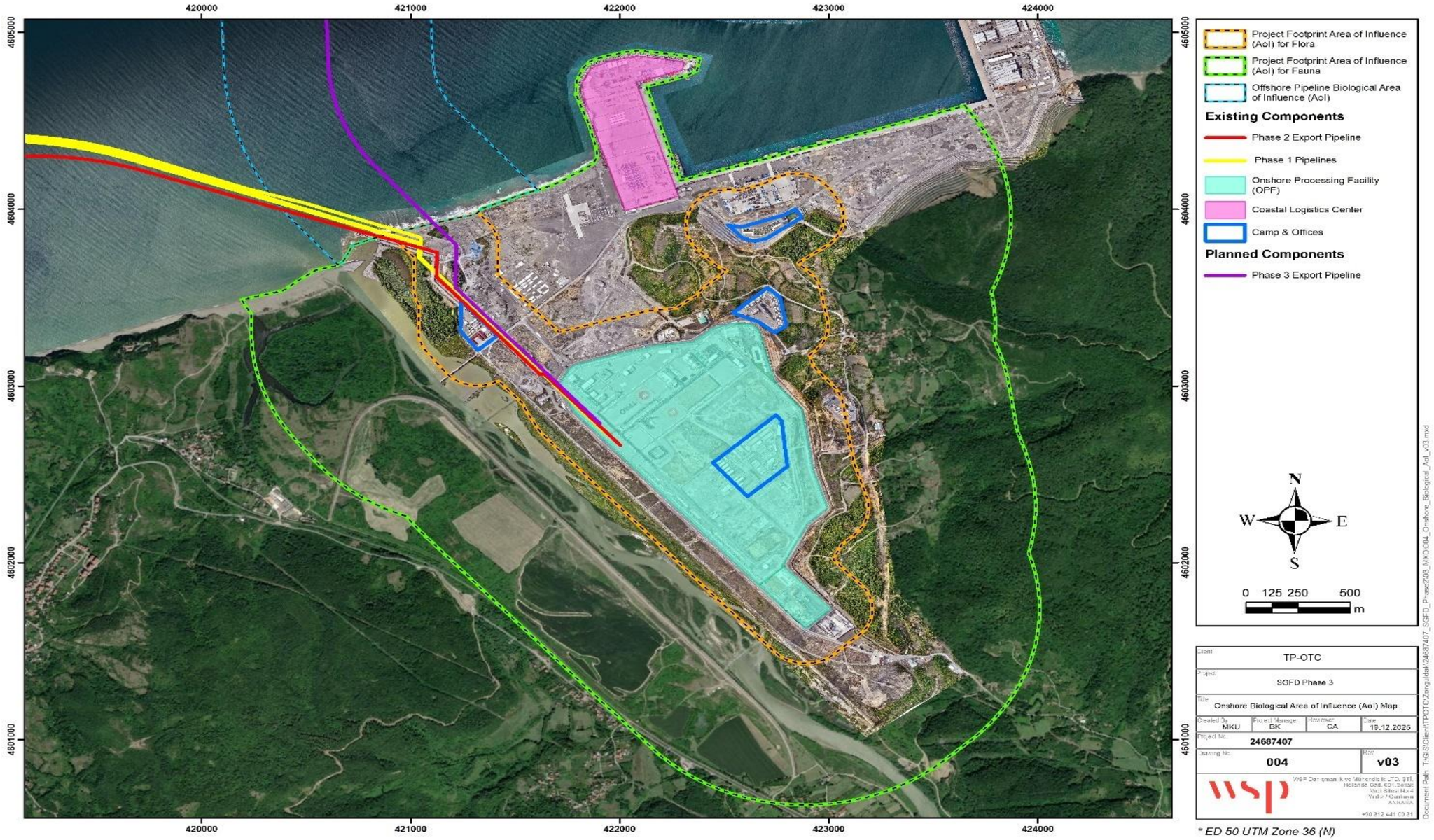
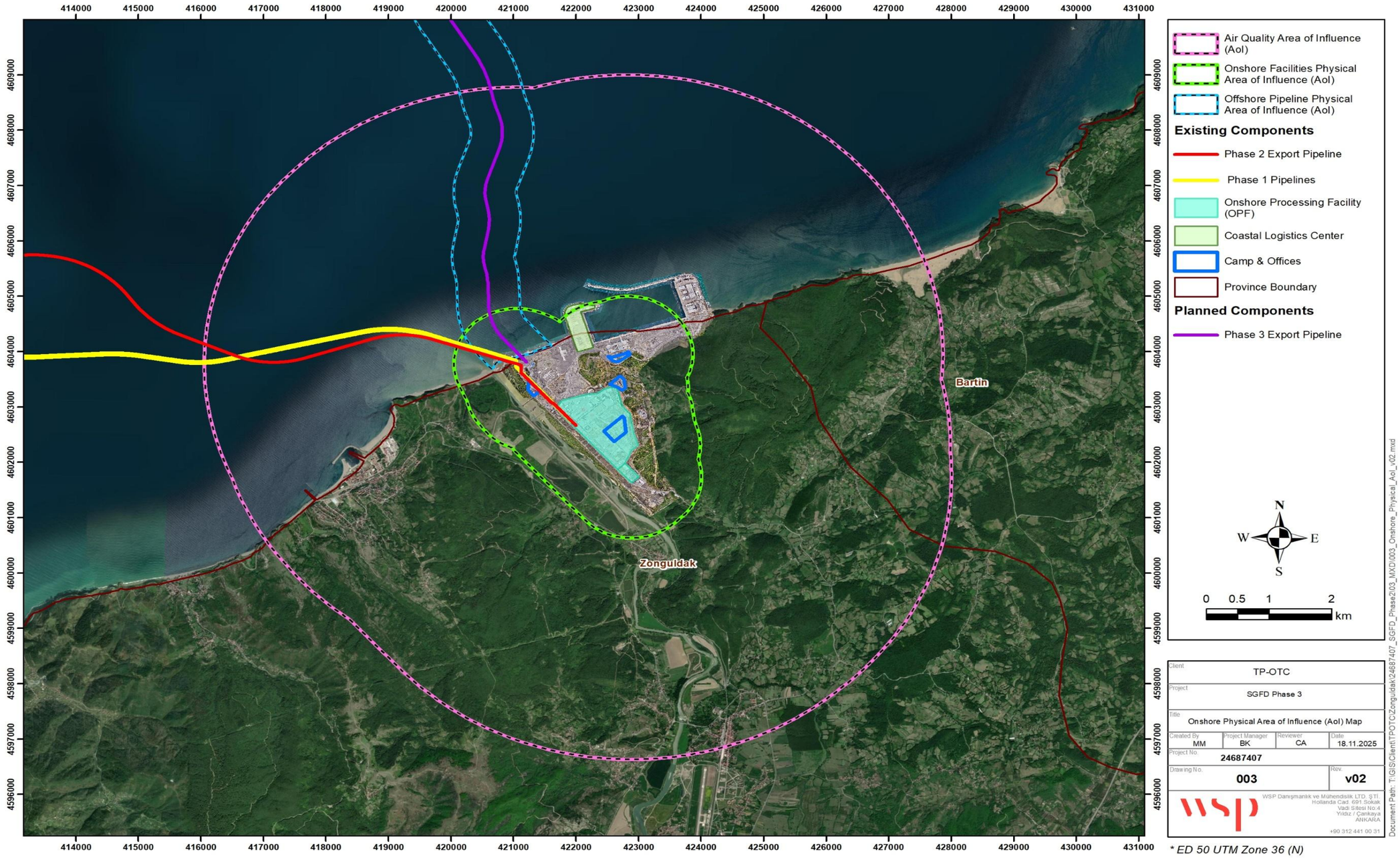


Figure 3-1: Onshore Biological Area of Influence



* ED 50 UTM Zone 36 (N)

Figure 3-2: Onshore Physical Area of Influence

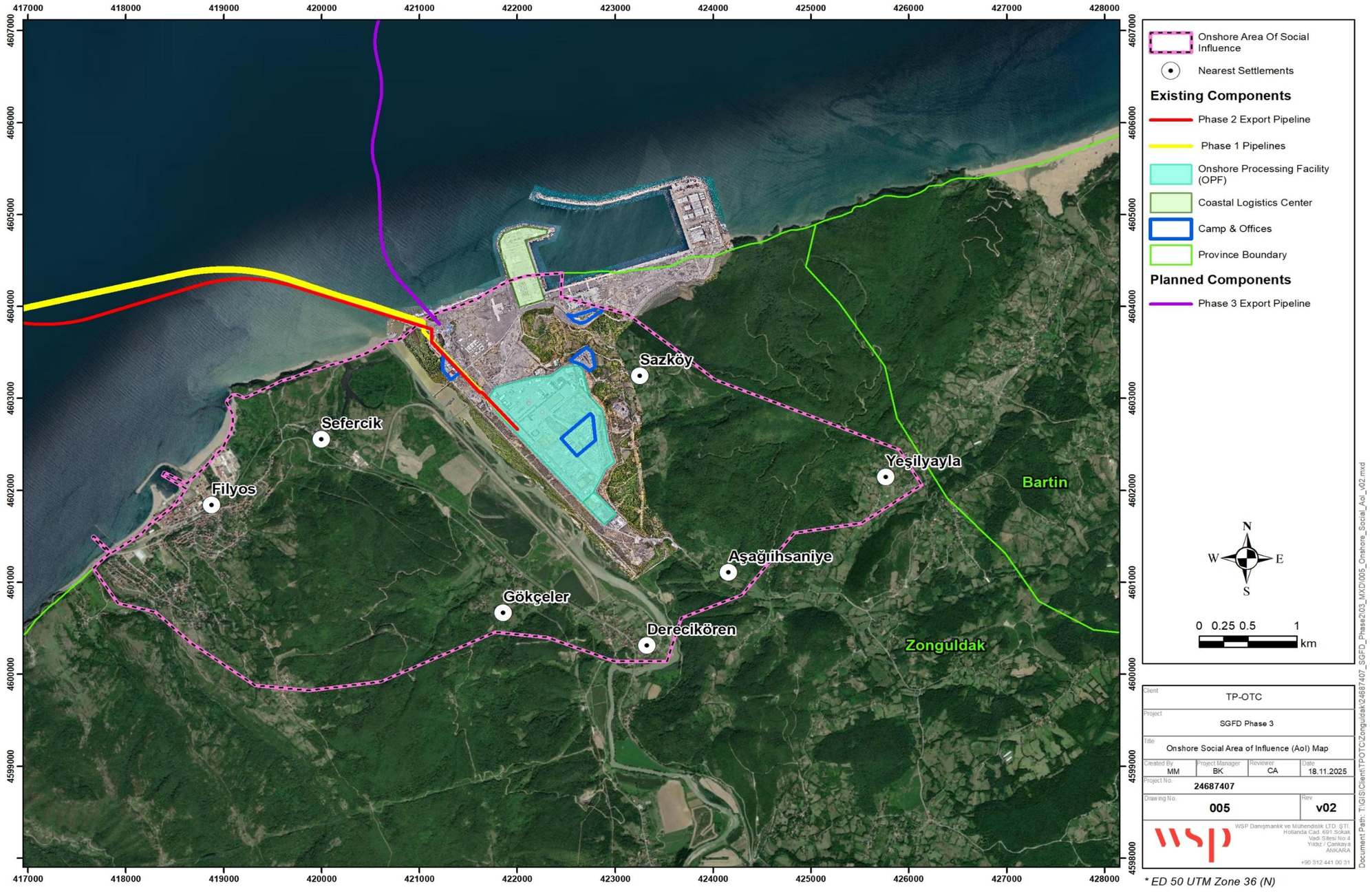
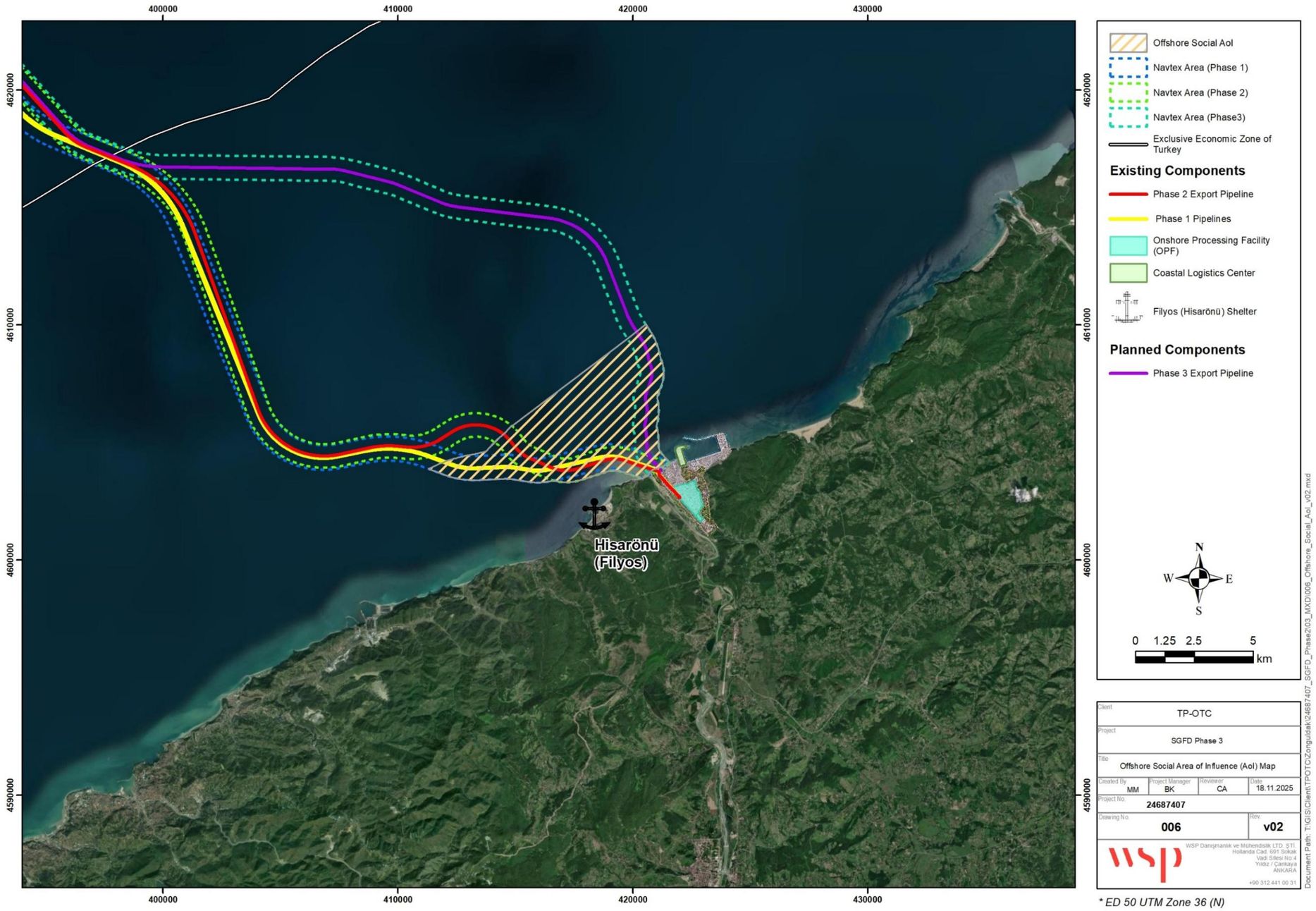
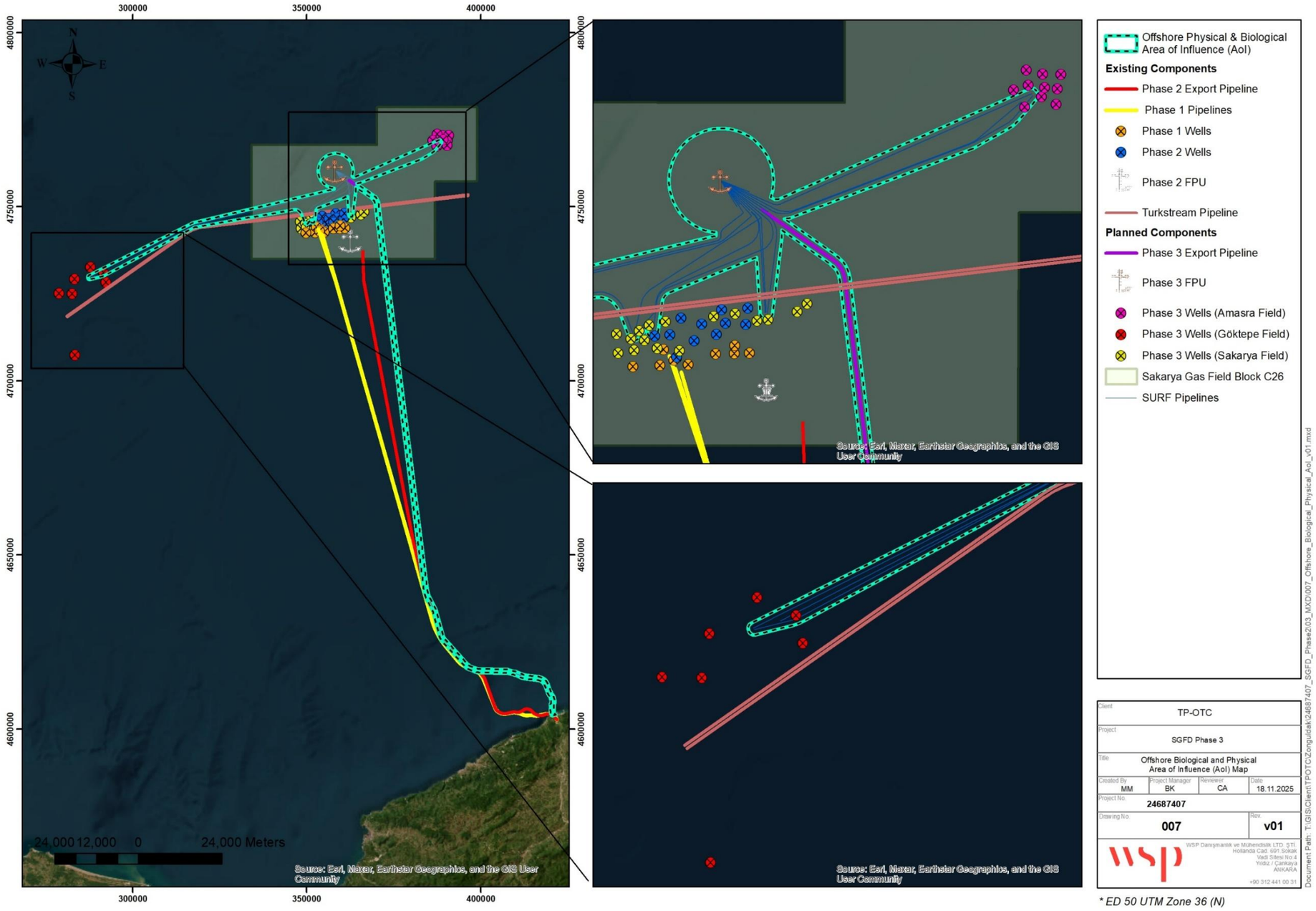


Figure 3-3: Onshore Social Area of Influence



* ED 50 UTM Zone 36 (N)

Figure 3-4: Offshore Social Area of Influence



* *ED 50 UTM Zone 36 (N)*

Figure 3-5: Offshore Physical and Biological Area of Influence

3.6 Applicable Requirements and Permitting

The Project will be implemented in compliance with the applicable Turkish legislation, as well as the requirements of the International Finance Corporation (IFC) Performance Standards and the Equator Principles (EP IV). The relevant legislation, and procedures applicable to environmental and social aspects of the Project are detailed in ESIA Reports[8], Chapter 2 (Regulatory Framework).

In addition to complying with Project Standards, the FPU's produced/process wastewater discharges are subject to the Special Limits stipulated by the Ministry of Environment, Urbanization and Climate Change in its letter dated 27 November 2024. These Special Limits apply to the FPU effluent and shall be met at all times. The same letter also requires that cooling-water discharge temperature shall not exceed 35°C and be monitored in real time under the Communique on Continuous Wastewater Monitoring Systems. The applicable parameters and discharge limits for the FPU are summarized in Table 3-5 below.

Table 3-5: FPU Effluent Special Limits

Parameters	Unit	2-Hour Composite Sample
Chemical Oxygen Demand (COD)	(mg/L)	250
Oil and Grease	(mg/L)	15
Hydrocarbons	(mg/L)	15
Total Kjedahl Nitrogen (TKN)	(mg/L)	20
Total Phosphorus (P)	(mg/L)	2
Phenols	(mg/L)	2
Fish Bioassay (ZSF)	-	6
pH	-	6-9

Permitting Framework

The national Environmental Impact Assessment (EIA) process for the Phase 2 and Phase 3 of the SGFD Project was initiated with the submission of the EIA Application File to the Republic of Türkiye Ministry of Environment, Urbanisation and Climate Change (MoEUCC) in July 2024. In the EIA Application File, the Project is defined as "Sakarya Gas Field Subsea Production Systems, Subsea Transmission Line and Onshore Gas Processing Facilities Integrated Project Revision, and Addition of Floating Production Units." An EIA boundary was established for the purposes of the assessment, and this boundary is presented in Figure 2-3 .

The EIA Report was evaluated under the relevant provisions of the Environmental Impact Assessment Regulation (Official Gazette: 29.07.2022, Issue 31907), specifically:

Annex-1 – Projects Requiring an EIA

Article 26: Extraction of 500 tons/day of crude oil, 500,000 m³/day of natural gas or shale gas

Annex-2 – Projects Subject to Preliminary EIA

[8] https://tp-otc.com/surdurulebilirlik/cevre-ve-sosyal-etki-degerlendirmesi/

Article 28(f): Dredging projects extracting 50,000 m³ or more

Article 28(i): Deep-sea discharge projects

Article 40: Industrial facilities for the production of electricity, gas, steam and hot water (20–300 MWt)

As required by the national EIA procedure, a Public Participation Meeting was held on 8 August 2024. During this meeting, TP-OTC presented the activities planned under SGFD (covering both Phase 2 and Phase 3), informed stakeholders of the scope of the national EIA, and provided government institutions with updates regarding the SGFD Phases and associated permitting processes.

The EIA positive decision was obtained in May 2025.

The Goktepe reservoir will be developed as an additional tieback to the Phase 3 FPU. The Goktepe production will utilize available processing capacity on the FPU and thus does not alter the systems design. The Goktepe subsea production system infrastructure will comprise of the sames component building blocks as the Sakarya and Amasra tiebacks. The addition of Goktepe tieback extends the physical footprint of the overall Phase 3 project in the westerly direction.

In accordance with applicable national legislation, the Ministry of Environment, Urbanization and Climate Change (MoEUCC) may require an update to the approved Environmental Impact Assessment (EIA). Such an update is not anticipated to result in any amendments to the currently approved permits, environmental limits, operational thresholds, or regulatory conditions.

TP-OTC is formally engaging with the MoEUCC regarding the applicable regulatory requirements. All environmental, social, and operational limits, standards, mitigation measures, and monitoring obligations associated with SGFD Phase 2 and Phase 3 shall continue to be implemented in full compliance with the approved national EIA and applicable legal and regulatory frameworks.

Dredging Environmental Management Plan will be prepared and a permit application will be made prior to commencement of the activities. The process will be carried out in accordance with the Regulation on the Environmental Management of Dredged Material (Official Gazette No. 31008, dated 14.01.2020).

The main permits and approvals obtained, applicable to the Sakarya Gas Field Development Project are given in Table 3-6.

Table 3-6: The Main Permits and Approvals Required

Subject	Permit / Approval	Relevant Regulatory Framework
Land Use	Land use agreements for state owned lands Easement Preliminary Permit for Marine Spaces (Territorial Waters) Approval Process for the Zoning Plans of the Sea Section Approval Process for the Zoning Plans of the Onshore Section Marine areas usage permit Approval of the Onshore Geological-Geotechnical Survey Report	Relevant laws and regulations specific to the land use type Industrial Zones Law (No: 4737, 2002) Regulation on the Management of Treasury Properties Coastal Law No. 3621 and its sub-legislation

	Approval of the Offshore Geological-Geotechnical Survey Report Zoning plans with a 1/5,000 and 1/1,000 scales for the Onshore Section Zoning plans with a 1/5,000 and 1/1,000 scales for the SURF (for the portion from the coastal line of the SURF up to the Turkish territorial waters)	
	Establishing a transit agreement with the cable owners in the event a cable transit is encountered	-
	Confirmation from the Turkish Navy whether there is an existing unexploded military ordnance (UXO) on the pipeline route.	-
	Bathymetric and oceanographic report approval	Regulation on Navigation, Hydrography and Oceanography Services
Construction	EIA Approval	Regulation on Environmental Impact Assessment
	Dredging conformity certificate Dredging permit Dredging pre-authorization	Regulation on Environmental Management of Dredging Material Regulation on Sea and Inland water Drilling Regulation on Sea and Inland Water Drilling
	Waste transportation and acceptance certificate (excavation)	Regulation on the Control of Excavation Soil, Construction and Demolition Waste
	Permits and approvals for roads, water bodies, canals, energy supply lines, pipelines, utilization of municipal infrastructure etc.	Protocols/approvals/official letters of related state authorities
	Workplace notification for construction camp sites Site permits and subscriptions	Regulation on Workplace Opening and Operating Licenses (No: 25902, 2005)
	Trial permit / Workplace Opening and Operating License	Regulation on Workplace Opening and Operating Licenses (No: 25902, 2005)
	Construction permit	Industrial Zones Law (No: 4737, 2002)
	Permit for on-site fuel storage	Regulation on Environmental Permits and Licenses (No: 29115, 2014)
	Approval of wastewater treatment plant application project	Wastewater Treatment/Deep Sea Discharge Facility Project Approval Circular (No: 2018/14, 2018)
	Temporary operating certificate/environmental permit (discharge, emission, etc.) for camp site wastewater discharge, emission due to heating, generator usage, concrete batching plant operation	Regulation on Environmental Permits and Licenses Water Pollution Control Regulation Industrial Air Pollution Control Regulation
	Water use agreement with relevant Municipalities	-
	Waste management plan approval,	Waste Management Regulation

	Temporary storage permit (if a thousand kilograms or more of hazardous waste will be produced per month) Agreements made with licensed waste management and disposal companies	
	Night work permit (if required)	Regulation on Control of Environmental Noise
	Foreign personnel work permits	International Labour Law (No:6735, 2016)
	Diving Permit Revision	Regulation on Ports (No:28453, 2012)
	Private security permit	Regulation on the Implementation of the Law Concerning Private Security Services
Operation	Building permits, Occupancy permits	Zoning Law No. 3194 and its sub-legislation
	Energy identity certificate (for buildings)	Regulation on Energy Performance in Buildings
	Confirmation that the seabed umbilical and pipelines have been built in accordance with the Project	Presidential Decree No. 1 on the Presidency Organization
	Fire report approval	Regulation on Fire Protection of Buildings
	Offshore facility emergency response plan approval	Law No. 5312 on the Principles of Emergency Response and Compensation for Damages in Pollution of the Marine Environment with Petroleum and Other Harmful Substances and its related regulations
	Approval of wastewater treatment plant application projects	Wastewater Treatment/Deep Sea Discharge Facility Project Approval Circular No. 2018/14
	Temporary operating certificate/environmental permit for wastewater discharge, emissions and noise	Regulation on Environmental Permits and Licenses (No: 29115, 2014)
	Permit for facilities with a total combustion system thermal power of 2 MW or more and less than 100 MW and using gaseous fuel and/or more than one fuel	Regulation on Environmental Permits and Licenses (No: 29115, 2014)
	Permit for combined cycle, combined heat power plants, internal combustion engines, gas turbines, generators with a total combustion system thermal power of 1 MW or more and less than 100 MW	Regulation on Environmental Permits and Licenses (No: 29115, 2014)
	Permit for urban and/or domestic wastewater treatment facilities with a capacity of less than 20,000 m^3/day	Regulation on Environmental Permits and Licenses (No: 29115, 2014)

	Permit for Facilities storing organic chemicals and having a total storage capacity of 200 tons or more and less than 50,000 tons	Regulation on Environmental Permits and Licenses (No: 29115, 2014)
	Hazardous substance activity certificate within the scope of ADR	Regulation on Carriage of Dangerous Goods by Road
	Greenhouse gas emission monitoring report approval	Regulation on the Monitoring of Greenhouse Gas Emissions
	Waste management plan approval, Temporary Storage Permit (if a thousand kilograms or more of hazardous waste will be produced per month) Agreements made with licensed waste management and disposal companies Waste Transport Permit	Waste Management Regulation Regulation on Receiving Waste from Ships and Control of Waste
	Wastewater Discharge Permit	Regulation on Environmental Permits and Licenses (No: 29115, 2014) Water Pollution Control Regulation (No: 25687, 2004)
	Seveso declaration	Regulation on Prevention and Mitigation of Major Industrial Accidents
	Hazardous substance activity certificate	Directive on the Procedures and Principles Regarding Issuing Hazardous Substances Activity Document
	Operation license for subsea production system	The Turkish Petroleum Law No. 6491
	Energy Market Regulatory Authority (EMRA) requirements	Electricity Market Law No. 28603 Natural Gas Market Law No. 4646
	Private security permit	Regulation on the Implementation of the Law Concerning Private Security Services

3.7 Reviewed Documents

- National EIA[9] (ETC Çevre Teknolojileri, 2025)
- Offshore Physical and Biological Monitoring Report Phase-1 Monitoring 3 & Phase-2 Monitoring 1 / SC26-2A-DNR-PRJ-SU-REP-501323 (Den-Ar, 2025)
- Offshore Physical and Biological Monitoring Report Phase-1 Monitoring-4 & Phase-2 Monitoring-2 / SC26-2A-PER-PRJ-SU-REP-600028 (Pera Engineering, 2025)
- Onshore Biodiversity Monitoring report (TP-OTC, November 2023; July 2024; October 2024; March 2025; August 2025)
- Weekly Offshore Survey Progress Report (Pera Engineering, 2025)

[9] **Phase 2&3 EIA Report**

- Basis of Design / SC26-3-OTC-PRJ-SY-BOD-000001 R02 (TP-OTC, 2025)
- Feasibility Report (TP-OTC, 2025)
- Offshore Route Drawing / SC26-3-WOR-GEP-FL-DWG-001010 (Worley, 2024)
- Onshore Route Cross Sections / SC26-3-WOR-GEP-FL-DWG-001012 (Worley, 2024)
- Landfall Design Report / SC26-3-WOR-GEP-FL-CAL-001003-R03 (Worley, 2025)
- Information Note for Contractors (TP-OTC, 2025)
- Coordinates of Project Phases Locations (TP-OTC, 2025)
- Pipeline Route KMZ Files (TP-OTC, 2025)
- Hydrotest Information Note (TP-OTC, 2025)
- FPU Technical Information Note (TP-OTC, 2025)
- Risk Assessment Information Note (TP-OTC, 2025)
- The Project Schedule (TP-OTC, 2025)
- Technical Information Note on the Project (TP-OTC, 2025)
- FPU Introduction Information Note (TP-OTC, 2025)
- Hull Description Technical Information Note (TP-OTC, 2025)

4.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT

The Sakarya Gas Field Development Project operates under a robust Environmental and Social Management System that was prepared based on comprehensive ESIAs undertaken for the first two phases of the Project and has been successfully implemented throughout them. This system encompasses plans and procedures addressing environmental, social, and biodiversity management in alignment with the Equator Principles, IFC Performance Standards, and national regulatory requirements.

For Phase 3, TP-OTC will continue to apply these established frameworks, ensuring consistency and continuity in risk management. Existing plans, including the interface management, will be reviewed for requirements to update and updated as necessary to reflect activities, impacts and mitigation measures specific to Phase 3, maintaining a proactive approach to impact mitigation and compliance, while ensuring adaptive management through monitoring.

The overarching integrated management system TPAO/TP-OTC has established for the SGFD Project consists of the following essential components:

- Corporate Policies and Directives such as Integrated Management System Policy of TPAO&TP-OTC in compliance with ISO 9001, ISO 14001 and ISO 45001, HR Directive of TP-OTC, Sustainability Policy of TPAO, TP-OTC's Sustainability Policy, which has been developed and will be published within 2026.
- HR Policy and Procedure,
- Management of Change (MoC) Procedure of the SGFD Project,

- Environmental and Social Management Plan (ESMP, Chapter 12 of ESIA) prepared at the end of each ESIA process (i.e. for Phase-1 and for Phase-2) and detailed sub-plans;
- Commitment Register,
- Organisational Capacity and Competency (as presented in Chapter 12 of the ESIA[10], ESMP[11])
- Communication and engagement with stakeholders (SGFD Project SEP[12] as disclosed on the TP-OTC website)
- Emergency Preparedness and Response
- Monitoring and review.

The selected contractors and subcontractors are required to develop their own environmental and social management plans incorporating the requirements of the SGFD Project environmental and social management plans defined and prepared as per the ESIA requirements. They have to follow these documents, including environmental and social ("E&S") plans and procedures while working for the SGFD Project. Such plans and procedures are reviewed and approved by TP-OTC for construction and operations to assess their alignment with the SGFD Project plans and procedures.

4.1 Environmental and Social Management System

The key management plans for management of environmental and social impacts of the SGFD Project are presented below.

Table 4-1: Environmental and Social Management System - Plans

Plan / Procedure	Description
Environmental and Social Management Plan (ESMP)	Main framework document outlining the overall environmental and social management approach for the Project.
Stakeholder Engagement Plan (SEP)	Defines methods and responsibilities for engaging with stakeholders and maintaining transparent communication.
Human Rights Management Plan	Ensures the protection of human rights across all project activities and labour practices.
Camp Site Management Plan	Details the management measures for worker camps, including accommodation, hygiene, and welfare.
Offsite Accommodation Management Plan	Describes standards and monitoring requirements for offsite worker accommodations.
Labor Management Plan (LMP)	Outlines policies and procedures for fair and safe labour practices in line with international standards.

[10] https://tp-otc.com/surdurulebilirlik/cevre-ve-sosyal-etki-degerlendirmesi/

[11] https://tp-otc.com/media/5nqfygky/chapter-12-esmp-1.pdf; https://tp-otc.com/media/o1qhaat0/phase-2-chapter-12-environmental-and-social-management-plan.pdf

[12] https://tp-otc.com/media/qu0onzw2/sc26-otc-prj-pm-pln-000003_r00_tr.pdf

Plan / Procedure	Description
Contractor Management Plan	Defines mechanisms for ensuring that contractors comply with E&S requirements and performance standards.
Supply Chain Management Plan	Establishes procedures for identifying and managing E&S risks in the Project supply chain.
Occupational Health and Safety (OHS) Management Plan	Provides measures to protect worker health and safety during construction and operation.
Resource Efficiency Management Plan	Covers measures for optimizing the use of energy, water, and raw materials throughout project activities.
Pollution Prevention Plan	Sets controls to prevent and minimize air emissions (including GHG), noise, wastewater, soil and groundwater contamination, and hazardous material impacts.
Waste Management Plan	Defines procedures for segregation, storage, transport, and disposal of all waste streams.
Soil Management and Erosion Control Plan	Establishes measures to prevent soil degradation and control erosion during land disturbance activities.
Influx Management Plan	Addresses potential social and environmental risks associated with labour or population influx.
Traffic Management Plan	Outlines safe traffic flow, transport routes, and mitigation of road safety risks.
Community Health, Safety and Security Management Plan	Identifies and mitigates risks to local communities from Project activities.
Emergency Preparedness and Response Management Plan	Defines emergency scenarios and response procedures to minimize harm to people and the environment.
Livelihood Restoration Plan (LRP)	Provides strategies to restore or improve the livelihoods of affected persons.
Biodiversity Management and Reinstatement Plan	Details measures for protecting biodiversity during construction and operation and restoring habitats after construction.
Cultural Heritage Plan (including Chance Find Procedure)	Ensures protection of cultural heritage and defines actions in case of unexpected discoveries.
Interphase Management Plan	Ensures seamless coordination between operation and construction activities to continuously check, identify and mitigate overlapping environmental and social risks during the transition phase (i.e. operation of Phase-1, construction of Phase-2 and Phase-3)

4.2 Good Practice Note on Movable Maritime Assets Transactions

The Equator Principles Good Practice Note on Movable Maritime Assets (December 2024) provides a framework for managing environmental and social risks throughout the lifecycle of offshore maritime assets. This guidance emphasizes a “cradle-to-grave” approach, covering construction, operation, and end-of-life recycling, and aligns with international conventions and IFC Performance Standards.

Construction Phase:

Shipbuilding and conversion activities could pose environmental and social risks, particularly in relation to pollution prevention, waste management, and labour rights. Good practice requires TP-OTC to conduct due diligence on shipyards, ensuring compliance with IFC PSs and local regulations. Shipyards should demonstrate robust management systems (ISO 9001, ISO 14001, ISO 45001) and implement effective grievance mechanisms. Contracts must include clauses on environmental, health and safety standards, and labour conditions, extending to subcontractors and migrant workers in line with the Dhaka Principles. Preparation of an Inventory of Hazardous Materials during construction is also recommended.

The FPU is being developed by WISON New Energies, based in China. Wison New Energies (WNE) is a Shanghai-headquartered global clean-energy engineering company specializing in FLNG, FPSO, floating power, offshore wind, and modular LNG solutions, supported by two large fabrication yards and an integrated EPCIC delivery model. WNE embeds sustainability into its corporate strategy through a formal ESG governance structure, ten sustainability policies (covering environment, labour, human rights, DEI, waste, water stewardship, and pollutant management), and a cross-functional ESG Task Force that operationalizes these commitments across projects and fabrication yards. Its environmental and social management systems are certified to ISO 9001 (quality), ISO 14001 (environment), ISO 45001 (occupational health & safety), and ISO 50001 (energy management), and all major operations undergo verified greenhouse-gas accounting and reporting to ISO 14064 standards. WNE's supply chain is managed through a structured lifecycle system, including mandatory Due Diligence Questionnaires, Undertakings of Honest Conduct, on-site supplier audits, and 100% screening of new suppliers against E&S criteria—ensuring responsible procurement and full compliance with environmental, social, and governance expectations. WNE also maintains robust worker-protection mechanisms, including grievance channels, human rights policies, migrant-worker protections, and systematic HSE training for both employees and subcontractor personnel.

In this regard, TP-OTC conducts regular QHSE site visits to Wison New Energies' fabrication yards in China to observe potential environmental and social risks. Through these visits, TP-OTC has also reviewed Wison's implementation of its certified management systems, including ISO 9001 (quality), ISO 14001 (environment), and ISO 45001 (occupational health and safety), as well as its internal human rights, waste management, pollutant control, and DEI policies, which form part of WNE's corporate ESG framework.

Furthermore, TP-OTC has incorporated contractual clauses into the FPU contract, requiring Wison to adhere to defined environmental, health and safety, labour, human rights, and supply-chain management standards.

Wison New Energies has provided its list of approved suppliers to TP-OTC and will hold an Inventory of Hazardous Materials (IHM) for the FPU during construction. This supports safe material selection, future maintenance, and eventual end-of-life ship recycling in accordance with the Hong Kong Convention and responsible recycling practices recommended under the Good Practice Note.

Operation Phase:

Maritime assets must comply with IMO conventions (SOLAS, MARPOL, STCW, Maritime Labour Convention (MLC) 2006) and aim for advanced classifications such as “Clean Design” or similar.

Operational management systems should cover emergency preparedness, pollution prevention, and energy efficiency, supported by ISO certifications. Human rights obligations under the United Nations Guiding Principles on Business and Human Rights (UNGP) and MLC must be upheld for seafarers and supply chain workers.

The company that will operate the FPU has not been decided yet and will be decided by 2028. TP-OTC will ensure compliance with IMO conventions through integrating the requirements into the ISO certified Integrated Management System, while compliance with these conventions are also required under Turkish regulatory frameworks such as the Turkish Commercial Code, Maritime Safety Law (Law No. 618), as Türkiye is a signatory to the IMO conventions. Preparation of EPRP are mandatory and will be prepared for the operation phase.

The FPU will be flagged to Türkiye.

Additionally, SGFD Human Rights Impact Assessment and Human Rights Management Plan will be updated for Phase 3 to cover the FPU operations as well.

TP-OTC will also ensure seafarer rights per MLC 2006 and UNGPs, by verifying the manning agency to be assigned to comply with MLC.

Environmental measures include adherence to IMO guidelines on underwater noise and biofouling, monitoring of GHG emissions. Special care is required for navigation near sensitive marine areas, with routing aligned to IMO and IFC PS6 biodiversity standards.

IMO guidelines for underwater noise and biofouling will be implemented.

Scope 1 and 2 emissions will be monitored and reported. Flaring will be limited to emergencies only.

FPU will avoid Particularly Sensitive Sea Areas. In particular, to avoid interfering with the pelagic habitats, intake of cooling seawater and discharges of production water, cooling seawater and brine, should be planned at a depth below the anoxic layer (at approximatively 200 m) as already detailed in section 7.3.2.1.2 of Phase 2 ESIA[13].

Alignment with IFC PSs is ensured through the ESMS system implementation.

Support Vessels and Drilling Units:

In addition to the FPU, Phase 3 operations will involve offshore support vessels. These maritime assets are subject to IMO conventions including SOLAS, MARPOL, STCW and MLC 2006, and unlike the FPU, they are fully subject to SEEMP and CII requirements under MARPOL Annex VI. TP-OTC will ensure that operators of these vessels comply with the applicable IMO and IFC PS standards through contractual requirements, ESMS integration and regular monitoring.

End-of-Life Recycling:

[13] https://tp-otc.com/media/3ytesndm/chapter-73-offshore-physical-and-biological-components-impact-assessment-1.pdf

Responsible recycling is critical to avoid severe environmental and social impacts. TP-OTC will adopt policies aligned with the Hong Kong Convention (HKC) and EU Ship Recycling Regulation (EU SRR), ensuring transparency and contractual safeguards for green recycling. Due diligence on recycling yards will verify ISO 30000 certification and HKC compliance, supported by third-party audits and monitoring. Recycling clauses will be embedded in sale agreements, and dismantling processes documented through Ship Recycling Plans and Statements of Completion. Recycling practices and the yards used will be publicly disclosed and dismantling process will be monitored. National and international requirements at the time of decommissioning and dismantling will be reviewed and a plan will be developed for compliance.

Overarching E&S Requirements:

Across all phases of the SGFD Project, TP-OTC will apply overarching environmental and social requirements consistent with the Good Practice Note. These include integration of E&S measures into the corporate ESMS, maintenance of accessible worker and community grievance mechanisms, and ongoing reputational risk screening of shipyards, operators, manning agencies, and recycling facilities. These cross-cutting provisions ensure continuous alignment with IFC Performance Standards, EP requirements and international maritime conventions throughout construction, operation and end-of-life management.

5.0 GAP ANALYSIS

This Chapter tabulates a summary of the gaps identified based on the scope of work as discussed in the previous sections. A gap is referenced with respect to compliance with the applicable Lenders' Environmental and Social Standards and also considering the potential risks on the ground if the action is not implemented. Accordingly, some of the actions that are a strict non-conformance with lenders' standards have been ranked as High if the risks associated with them will not be properly and timely managed. Required actions to close the gaps are also presented.

The nomenclature of the color-coded categorizations is assigned the following description:

- **High**: Level III critical non-conformance typically includes observed damage to or irreversible impact to an identified resource or community and/or a major breach or disregard to a requirement of Project documents or applicable Lenders' standards.
- **Medium:** Level II non-conformance represents a situation that has not yet resulted in a damage or irreversible impact to a sensitive or important resource or community and requires expeditious corrective action and site-specific attention to prevent such effects. A Level II non-conformance can also be associated to a risk of a significant breach if not expeditiously addressed, requiring corrective action as defined in Project documents or applicable Lenders' standards.
- **Low:** Level I non-conformance not consistent with stated commitments as defined in Project documents but not believed to represent an immediate threat or impact to an identified important resource or community. A Level I non-conformance can also represent a minor breach or disregard of a requirement defined in Project documents or applicable Lenders' standards.
- **No Gap:** No gap against Applicable Standards has been identified or required actions to close a potential gap have been planned but may exist as the action has not been completed as of the date of this report.
- **TBC:** A potential non-conformance situation that cannot be evaluated due to missing information or evidence. It could be closed when relevant information or confirmation will be provided.

Table 5-1: Regulatory and Policy Framework

1	Component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
1.1	Applicable international regulations, standards.	Phase 1 of the SGFD has been established and operational since 2023. During the ESIA studies for Phase 1, applicable international regulations and standards were identified and presented in the disclosed ESIA Report. Phase 1 is being managed according to the regulations and standards mentioned in the disclosed ESIA and the prepared management plans. TPOTC has an ESMS and a capable organizational structure to manage and monitor activities in accordance with the applicable international and national regulations and standards. As part of the financing, the Phase 1 Project is being monitored by a third party for the Lenders. The relevant plans and procedures of the SGFD ESMS have been updated following completion of the Phase 2 ESIA. As part of the financing, the Phase 1 Project is being monitored by a third party for the Lenders. Similarly, the plans and procedures will be updated for the Phase 3. EIA approval includes the Phase 3 and is described in Section 3.5. This SLIP document outlines all the required assessments, surveys and updates.	IFC PS1 P6 - … and specifies that the project (or business activities, as appropriate) will comply with the applicable laws and regulations of the jurisdictions in which it is being undertaken, including those laws implementing host country obligations under international law. The policy should be consistent with the principles of the Performance Standards. Under some circumstances, clients may also subscribe to other internationally recognized standards, certification schemes, or codes of practice and these too should be included in the policy EP4 Principle 3 The Assessment process should, in the first instance, address compliance with relevant host country laws, regulations and permits that pertain to environmental and social issues. The EPFI will, with supporting advice from the Independent Environmental and Social Consultant where applicable, evaluate the Project's compliance with the applicable standards…For Projects located in Non-Designated Countries, compliance with the applicable IFC Performance Standards on Environmental and Social Sustainability (Performance Standards) and the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines).	Applicable international legislation, standards have been identified for the Phases 1 and 2 of the Project. They will be updated for the Phase 3 and for any updates in legislation. No Gap	Considering the similarities and proximity of all three phases, review the identified regulations and standards presented in the disclosed ESIA Reports and update as required.

Table 5-2: E&S Components - General

2	E&S Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
2.1	Sakarya Gas Field Development Phase 3 Project Facilities	Project components are defined in Section 2.0. A national EIA approval has been approved as described in Section 3.5. SGFD Project has an ESMS, developed based on impact assessments, to mitigate and manage the impacts of its activities, as described in Section 4.0. The ESMS will be updated to incorporate the Phase 3 of the SGFD.	IFC PS1 GN19 - The risks and impacts identification process should be based on recent, up-to-date information, including detailed description of the project in its geographic, ecological, social, health and temporal context (the environmental and social baseline). The description should encompass facilities and activities by third parties that are essential for the successful operation of the project.	SGFD ESMS plans and procedures will be updated for the Phase 3. No Gap	Update ESMS plans and procedures, as needed, to incorporate Phase 3.
2.2	Alternative analysis	In the ESIA Reports for Phases 1 and 2 of the SGFD, the no-project alternative, project area alternatives, and technology/design alternatives including lower-GHG considerations were comprehensively assessed. For Phase 3, alternatives for location and technology selection were further discussed in the national EIA report. The Phase 3 FPU and the gas export pipeline remain within the boundaries approved under the national EIA. While the overall system configuration for Phase 3 mirrors Phase 2 in terms of technical concept, routing alternatives for the new export pipeline were evaluated during design. Due to the geomorphology of the Black Sea seabed, characterized by steep elevation changes and deep valley structures, only the selected route ensures compliance with operational requirements for pressure and temperature control while maintaining safe tie-in to the onshore facilities. This routing minimizes technical risk and flow assurance challenges and represents the most feasible option among those considered.	IFC PS1 GN23 - The key process elements of an ESIA generally consist of . (ii) examination of alternatives. GN 25 For greenfield developments, the ESIA includes an examination of technically and financially feasible alternatives to the source of such impacts, and documentation of the rationale for selecting the particular course of action proposed. The purpose of the alternatives analysis is to improve decisions on project design, construction, and operation based on feasible alternatives to the proposed project. EP 4 Principle 2 and Annex A Provide comparisons to lower-GHG alternatives and justify technology choice	No Gap	If the Phase 3 FPU design significantly deviates from Phase 2, and/or the capacity increases, an alternatives analysis for lower-GHG alternatives and technology selection should be undertaken.
2.3	Climate change Greenhouse gases	In the ESIA Reports of the Phase 1 and 2, Scope 1 and 2 emissions were calculated, alternatives analysis for lower GHG emissions were evaluated and Climate Change Risk Assessments in accordance with EP 4 guidance were undertaken for each phase.	IFC EHS Guideline for Onshore Oil and Gas Development IFC EHS Guideline for Offshore Oil and Gas Development Global Gas Flaring and Venting Reduction Voluntary Standard of (part of the World Bank Group's Global Gas Flaring Reduction Public-Private Partnership program) IFC PS3.7: "…the client will consider alternatives and implement technically and financially feasible and cost-effective options to reduce project-related GHG emissions during the design and operation of the project. These options may include, but are not limited to, alternative project locations, adoption of renewable or low carbon energy sources, sustainable agricultural, forestry and livestock management practices, the reduction of fugitive emissions and the reduction of gas flaring."	Considering the overall system configuration for Phase 3 mirrors Phase 2 in terms of technical concept, an alternatives analysis is not deemed necessary. Low Risk Gap	Calculate Scope 1 and 2 emissions. Update Pollution Prevention Plan (including GHG emissions) and Resource Efficiency Management Plan.

2	E&S Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
			EP4: Suggests conducting an alternative analysis which requires evaluation of technically and financially feasible and cost-effective options that are available to reduce project related GHG emissions during design, construction, and operations. This is applicable to all projects emitting more than 100,000 tonnes of CO_2eq annually.		
2.4	Risk of Accidental Releases / Emergency Preparedness and Response	TP-OTC has ESMS including an Emergency Response Plan, and other plans pertaining to prevention and control of accidents in place. During the Phase 1 and 2 design phases, the Hazard Identification (HAZID) and Hazard and Operability (HAZOP) studies were performed for the onshore facility and the preventative measures for the identified risks were included in the design. Similarly in Phase 3, HAZID and HAZOP studies are being carried out. Emergency Preparedness and Response Plan (EPRP) will be prepared.	Turkish regulations PS1.20 - …the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment. PS4.11- the client will also assist and collaborate with the Affected Communities, local government agencies, and other relevant parties, in their preparations to respond effectively to emergency situations, especially when their participation and collaboration are necessary to respond to such emergency situations IFC General EHS Guidelines 1.3 Wastewater and Ambient Water Quality 1.5 Hazardous Materials Management 3.0 Community Health and Safety IFC EHS Guideline for Onshore Oil and Gas Development IFC EHS Guideline for Offshore Oil and Gas Development	Emergency Preparedness and Response Plan (EPRP) will be updated to include the Phase 3 construction and operation. No Gap	Prepare EPRP for the Phase 3 construction and operations.
2.5	Waste Generation	Waste types and disposal methodology were defined in the Waste Management Plan. Management measures were presented in the Waste Management Plan prepared for the Phase 1 of the SGFD. Estimated types and amounts of wastes anticipated from construction and operation activities and management of wastes are presented in the ESIA and national EIA of Phase 2. Management of wastes during Phase 3 is elaborated in Section 2.4. Management of wastes will be carried out in accordance with the national permitting requirements.	IFC PS1, PS3, Turkish regulations IFC General EHS Guidelines 1.3 Wastewater and Ambient Water Quality 1.4 Water Conservation 1.5 Hazardous Materials Management 1.6 Waste Management 3.0 Community Health and Safety	Waste Management Plan will be updated to include the Phase 3 construction and operation. No Gap	Present types and amounts of wastes to be resulted from construction and operation activities and define management methods of wastes. Obtain permits/make protocols for disposal of wastes at licensed facilities. Review and revise Waste Management Plan to include both construction and operation activities during the Phase 3.

2	E&S Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
2.6	Water consumption	Water consumption onshore is limited to construction activities in the landfall area during construction and FPU during operation, similar to Phase 2 of the project. During the construction phase, some vessels will be equipped with desalination equipment to obtain utility water. Support vessels will supply water to the vessels that are not equipped with desalination equipment. Drinking water will be supplied from local vendors in demijohns. Details of water consumption during operation phase on the Phase 2 FPU, which is mirrored by the Phase 3 FPU, are explained in Section 3 of the Phase 2 ESIA. The Resource Efficiency Management Plan has been prepared for the SGFD.	Turkish regulations WHO Guidelines for Drinking Water Quality IFC PS1, PS3 IFC General EHS Guidelines 1.3 Wastewater and Ambient Water Quality 1.4 Water Conservation 3.0 Community Health and Safety IFC PS3.9 - …the client shall adopt measures that avoid or reduce water usage so that the project's water consumption does not have significant adverse impacts on others…	Resource Efficiency Management Plan will be updated to include the Phase 3 construction and operation. No Gap	Update Resource Efficiency Management Plan to include the Phase 3 construction and operation.
2.7	Labour	According to TP-OTC, 618 staff will work on the onshore construction and 3264 staff will work during offshore construction. The construction phase is expected to last approximately 12 months, with work being carried out 25 days a month, 16 hours a day (2 shifts). In the operational phase of the project, 351 personnel will be employed. Production activities will continue as they currently do, for 12 months, 30 days a month, and 24 hours a day (3 shifts). TP-OTC has a Human Resources Policy aligned with international and national requirements, and encompasses recruitment, equal opportunity, non-discrimination/anti-harassment, workplace violence, worker protection, safety, grievance handling, conflict of interest, codes of conduct, confidentiality, moonlighting, and an open-door policy. TP-OTC has the following HR plans in pace: Camp Site Plan Contractor Management Plan Human Rights Management Plan Influx Management Plan Labor Management Plan Offsite Accommodation Plan Stakeholder Engagement Plan Grievance Mechanism	IFC PS2 IFC PS4 Labour Act of Turkey. Law No. 4857. Date of enactment: 22.05.2003	TP-OTC will integrate Phase 3 into its ESMS. No Gap	Update the HR plans and procedures, training plan for Phase 3.

2	E&S Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		The Labor Management Plan applies to all Project activities, including those of Associated Facilities, Contractors, Subcontractors, and workers, and covers the fundamental principles and rights of workers. The Worker Grievance Mechanism is available to all Project workers, including contractors and subcontractors. The Camp Site Management Plan is aligned with national laws, international standards, IFC Performance Standard 2, the Equator Principles. The target of the TP-OTC is to prioritize the local employment for the minimization of the labour influx impact of the Project and to contribute the local economy where the local workforce is available.			
2.8	Emissions into water, air, land	Described in Section 2.4. Following managements have been prepared for the Project for management of emissions and discharges: ESMP Pollution Prevention Plan Waste Management Plan Soil Management and Erosion Control Plan	IFC PS1, PS3, IFC General EHS Guidelines, Turkish Regulations, EP4 – Principle 2	The ESMS plans will be updated to incorporate Phase 3. No Gap	Update ESMS plans and procedures regarding emissions and discharges, specifically: ESMP Pollution Prevention Plan Waste Management Plan Soil Management and Erosion Control Plan
2.9	Pollution prevention	SGFD has Pollution Prevention Plan for Phase 1 and 2 activities.	IFC PS1, PS3, IFC General EHS Guidelines, EP4 – Principle 2 PS1.10- The client will avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release.	Identification of pollution prevention measures in line with IFC EHS Guidelines is required for Phase 3. Pollution Prevention Plan will be updated for Phase 3. No Gap	Review and revise the Pollution Prevention Plan as needed to align with the activities of Phase 3.
2.10	Needs for raw materials and energy consumption	Needs for raw materials and energy consumption were identified in detail. SGFD has a Resource Efficiency Management Plan	IFC PS1	No Gap	Update Resource Efficiency Management Plan to incorporate Phase 3.
2.11	Supply Chain	TP-OTC has the Procurement and Supply Chain Management Procedure, Supplier Performance Assessment Procedure, Suppliers and Vendors HSSE Specifications documents. Also ESHS requirements and Project E&S standards are part of contractors' contracts.	PS2.27 - The client will monitor its primary supply chain on an ongoing basis in order to identify any significant changes in its supply chain and if new risks or incidents of child and/or forced labour are identified, the client will take appropriate steps to remedy them	Documentation will be updated for Phase 3. No Gap	Update Supply Chain Management documentation to include Phase 3.

2	E&S Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
			PS2.28 - Additionally, where there is a high risk of significant safety issues related to supply chain workers, the client will introduce procedures and mitigation measures to ensure that primary suppliers within the supply chain are taking steps to prevent or to correct life-threatening situations.		

Table 5-3: Baseline Onshore Physical Components

3	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
3.2	Air quality	In the ESIA of the Phase 1, baseline air quality measurements of the AoI were discussed. After ESIA process, TPOTC started air quality monitoring campaign according to the Management Plans. Currently, the air quality baseline for the Phase 2 and 3 Project includes the air quality impacts of the SGFD Phase 1 which is being monitored regularly. Air quality impacts onshore will be limited to construction within the landfall area. SGFD Pollution Prevention Plan has mitigation and monitoring measures for air quality.	IFC PS1, PS3, EP4, Turkish Regulations IFC PS3-GN1: "…clients should take into account the potential impact of their activities on ambient conditions (such as ambient air quality) and seek to avoid or minimize these impacts within the context of the nature and significance of pollutants emitted." IFC PS1.7 - The risks and impacts identification process will be based on recent environmental and social baseline data at an appropriate level of detail. IFC EHS Guidelines - Onshore Oil and Gas Development: "Air quality impacts should be estimated by the use of baseline air quality assessments and atmospheric dispersion models to establish potential ground level ambient air concentrations during facility design and operations planning as described in the General EHS Guidelines. These studies should ensure that no adverse impacts to human health and the environment result." IFC EHS Guidelines-Air Emissions and Ambient Air Quality: "Baseline calculations: Before a project is developed, baseline air quality monitoring at and in the vicinity of the site should be undertaken to assess background levels of key pollutants, in order to differentiate between existing ambient conditions and project-related impacts."	Pollution Prevention Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan to include Phase 3.
3.3	Geology and geomorphology	Geological and geomorphological characteristics of the Project area and the region is presented in the national EIA Report and the ESIAs. No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point.	IFC PS4, GN 7 - The need for certification and approval of structural elements to meet the requirements of Performance Standard 4 will entail consideration of engineering safety competencies including geotechnical, structural, electrical, mechanical, and fire specialties. Clients will be expected to base this determination, which in some cases will be in addition to or beyond local regulatory requirements, on the potential risk of adverse consequences posed by the nature and use of these structural elements and the natural conditions of the area (i.e., potential for hurricanes, earthquakes, flooding, etc.). IFC General EHS Guidelines Ch 3.3 All such structures should be designed in accordance with the criteria mandated by situation-, climatic-, and geology specific location risks (e.g., seismic activity, wind loading, and other dynamic loads).	No Gap	No action required.

3	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
3.4	Soil	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point. Pollution Prevention Plan addresses management of potential soil contamination.	IFC PS1.7 - The risks and impacts identification process will be based on recent environmental and social baseline data at an appropriate level of detail. IFC General EHS Guidelines	Pollution Prevention Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan to include Phase 3.
3.5	Hydrology and surface water quality	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point. Pollution Prevention Plan addresses management of discharges, as well as the Waste Management Plan.	IFC PS1.7 - The risks and impacts identification process will be based on recent environmental and social baseline data at an appropriate level of detail. IFC General EHS Guidelines 1.3 Wastewater and Ambient Water Quality 1.4 Water Conservation 3.0 Community Health and Safety	Pollution Prevention Plan and Waste Management Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan and Waste Management Plan to include Phase 3.
3.6	Hydrogeology and groundwater quality	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point. Pollution Prevention Plan addresses management of discharges, as well as the Waste Management Plan.	IFC PS1.7 - The risks and impacts identification process will be based on recent environmental and social baseline data at an appropriate level of detail. IFC General EHS Guidelines 1.3 Wastewater and Ambient Water Quality 1.4 Water Conservation 3.0 Community Health and Safety	Pollution Prevention Plan and Waste Management Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan and Waste Management Plan to include Phase 3.
3.7	Noise and Vibration	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point, remaining within the SGFD fence, away from sensitive receptors. Pollution Prevention Plan addresses management of noise and vibration.	IFC EHS Guidelines: Noise Management: “Noise monitoring programs should be designed and conducted by trained specialists. Typical monitoring periods should be sufficient for statistical analysis and may last 48 hours with the use of noise monitors that should be capable of logging data continuously over this time period, or hourly, or more frequently, as appropriate (or else cover differing time periods within several days, including weekday and weekend workdays).” IFC PS1.7 - The risks and impacts identification process will be based on recent environmental and social baseline data at an appropriate level of detail.	Pollution Prevention Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan to include Phase 3.

Table 5-4: Baseline Onshore Biological Components

4	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
4.1	Baseline Terrestrial Flora-Fauna	Baseline data and monitoring results biodiversity including flora, fauna and freshwater surveys for Phase 1 and Phase 2 are available from studies conducted between 2021 and the present. Baseline study was carried out in the Phase 3 AoI in October 2025. Baselines for the terrestrial biodiversity components were described, and the Critical Habitat Assessment was presented in the Phase 1 and Phase 2 ESIAs. The documentation was prepared in accordance with IFC PS6. A Biodiversity Management Plan for TP-OTC was prepared. Monitoring continued as defined in the BMP.	IFC - SP6 - GN1 “Performance Standard 6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development.” Biodiversity is defined as “the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems.” PS6 – GN9 “… the baseline should include field surveys over multiple seasons, to be undertaken by competent professionals and with the involvement of external experts, as necessary.” Species richness and Habitat conservation classification: PS6.16 – “Critical habitats are areas with high biodiversity value, ….” Critical habitats are defined by the presence of: CR and/or EN species Endemic species Migratory species Limited distribution species PS6.21. and PS6 – GN27 “Clients are responsible for delineating the project site as best as possible in terms of modified and natural habitat. This determination is made based on the level of human-induced disturbance (for example, presence of invasive species)”	The construction works in the onshore section of the SGFD within the scope of Phase 3 will be located east of the Phase 1 and Phase 2 landfall areas, crossing the natural habitats B1.6 (Coastal dune scrub), B1.4 (Black Sea coastal stable dune grassland – grey dunes), and G1.1 (Riparian and gallery woodland). Therefore, the baseline data on terrestrial flora and fauna species associated with these habitats should be updated. The Area of Influence (AoI) defined for Phase 3 flora-fauna studies is the same as in Phase 1 and Phase 2; therefore, the Phase 3 AoI overlaps with the Phase 1 and Phase 2 AoIs. Monitoring in accordance with the Biodiversity Management Plan (BMP) continued during Phases 1 and 2, and in October 2025, Phase 3 baseline field study was conducted, thereby establishing a baseline prior to the commencement of Phase 3 construction activities. Low Risk Gap	Review and utilize the Phase 1 and Phase 2 monitoring reports together with the corresponding ESIA documents to prepare the updated baseline for the Phase 3 onshore terrestrial biological components. Update the Critical Habitat Assessment (CHA) accordingly, if required. Update the Biodiversity Management Plan.
4.2	Baseline Freshwater Fauna	Baseline data and monitoring results biodiversity including flora, fauna and freshwater surveys for Phase 1 and Phase 2 are	IFC - SP6 - GN1 “Performance Standard 6 recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and	The freshwater habitat will not be directly affected. The potential indirect	No significant impacts are anticipated, and therefore, no further assessment is required.

4	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		available from studies conducted between 2021 and the present. A Biodiversity Management Plan for TP-OTC was prepared. Monitoring continued as defined in the BMP. The freshwater habitat will not be directly affected from Project.	sustainably managing living natural resources are fundamental to sustainable development." Biodiversity is defined as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems."	impacts (such as dust, noise, and light emissions) have already been evaluated under the Impact Assessment section of the Phase 2 ESIA, and the mitigation measures defined therein are considered sufficient. No Gap	

Table 5-5: Baseline Onshore Social Components

5	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
5.1	Cultural Heritage	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point. TP-OTC has a Cultural Heritage management Plan and Chance Find Procedure.	Turkish Law No 2863, IFC PS8, Valetta Convention European Convention on the Protection of the Archaeological Heritage (Revised) ICOMOS Guideline, 2011 UNESCO Intangible Cultural Heritage Law No. 5448 on 19/01/2006 on the Law on the Approval of the Convention for the Protection of the Intangible Cultural Heritage	No Gap	No action required.
5.2	Politics and governance	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point.	IFC PS1	No Gap	No action required.
5.3	Infrastructure and services (including education and healthcare facilities)	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point.	IFC PS1 IFC General EHS Guidelines	No Gap	No action required.
5.4	Transportation and traffic	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point. Available roads will be used during the Project implementation. No additional roads are planned to be opened	IFC PS1 IFC General EHS Guidelines	Traffic Management Plan will be updated for Phase 3 No Gap	Update Traffic Management Plan to include Phase 3.

5	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		Increase in the traffic load is not anticipated. The Project has a Traffic Management Plan and procedures related to road safety and traffic management.			
5.5	Land use and agriculture	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point.	IFC PS5	No Gap	No action required.
5.6	Demographics	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point.	IFC PS1	No Gap	No action required.
5.7	Employment and livelihoods	Baseline was presented in the Phase 1 and 2 ESIAs. TP-OTC has Influx Management Plan, which outlines the maximum number of workers, their accommodation, and how they will be distributed. It covers aspects such as local employment, vocational training, social conflicts, crime prevention, and the effects on rental prices, education, health, and vulnerable populations. Additionally, the plan involves monitoring non-local workers, changes in population, and the capacity of community health services. The target of the TP-OTC is to prioritize the local employment for the minimization of the labour influx impact of the Project and to contribute the local economy where the local workforce is available. As the Phase 3 will remain in the EIA boundaries, no further onshore livelihood impacts are anticipated.	IFC PS1 IFC PS5	No Gap	No action required.
5.8	Onshore Ecosystem services	As the Phase 3 will remain in the EIA boundaries with very limited activity during construction in the landfall area, no further onshore impacts are anticipated.	IFC PS6	No Gap	No action required.

Table 5-6: Baseline Offshore Physical Components.

6	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
6.1	Seafloor morphology	According to the ESIA Phase I and supporting hydrographic surveys, the Black Sea morphology is structured into three main physiographic units: the continental shelf, continental slope, and abyssal plain. Along the Turkish coast, the shelf is relatively narrow, extending up to approximately 10 - 20 km and bounded by the 100 m isobath. The continental slope is steep and incised by canyon systems, transitioning into a gently inclined continental rise and a smooth abyssal plain reaching depths of up to approximately 2.200 m. Most recent Phase 3 bathymetric survey provides an updated characterization of the Area of Interest (AoI). Overall, the Göktepe Area seabed is generally smooth and gently undulating, reflecting morphological features typical of the Western Black Sea deep-basin environment. Bathymetric patterns show deeper depressions toward the central portion of the basin and progressively shallower slopes along the flanks, with no major shoals, ridges, or isolated topographic highs observed, confirming a largely uniform seafloor morphology. FPU2 area, defined as the deep offshore FPU2 anchor location where the installation of FPU2 with mooring lines and connection with wells will take place, is characterized by water depth typically around 2000m. Multibeam bathymetric data acquired along Phase 3 route (Route – 6) highlight the presence of a pronounced escarpment zone, characterized by sharp gradient transitions from the upper slope to the lower basin flank. Water depths along this route range from approximately - 17 m to - 336 m. Adjacent shallow-water areas exhibit depth variations ranging from approximately 3.5 m to 1.381 m. No evidence of UXO was reported in the last available data, although a shipwreck has been identified in the general area of Amasra Gas Field. Phase 3 bathymetric survey confirms no substantial differences in seabed morphology within the AoI compared to the results of previous phase surveys. Seafloor characteristics remain consistent with earlier observations, with only minor and localized variations associated with pre-existing infrastructure, such as pipeline crossings. Any detected morphological changes are limited in	Good international industry practice (GIIP)	The new survey provides a reliable and comprehensive overview of the study area and, when considered together with the results from earlier phases, indicates that the overall geomorphological characteristics remain broadly comparable to previous baselines, with no significant differences requiring specific attention. Any impact on the shipwreck identified will be avoided during construction and operation phases. No significant differences in terms of impacts on the component under review are expected as these can be assumed to be consistent with the baseline estimates made during previous phases. No Gap	No action required

6	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		extent, fall within the range of natural sediment dynamics, and do not indicate the development of new or progressive seabed features fFor more detailed information see Chapter 6.1.1.1.			
6.2	Sediment (graine size and contaminants)	Results from latest Phase 3 campaign confirm a progressive increase in the fine sediment fraction already detected in previous phases surveys. This pattern reflects seasonal variations in hydrodynamics and sediment supply, including fluvial inputs from the Filyos River and resuspension processes, especially along the escarpment. Sediment chemistry data indicate generally low to moderate concentrations of trace metals and organic contaminants, with all parameters remaining below regulatory thresholds. Temporary exceedances of cadmium and mercury observed during earlier monitoring sessions conducting in previous phases were not recorded during the September and October 2025 surveys, confirming a return to compliant conditions. Variability observed in certain elements, together with the increased fine sediment fraction, suggests a slight increase in system sensitivity from low to medium-low; however, these changes are consistent with natural sedimentary processes and seasonal dynamics rather than persistent or widespread anthropogenic contamination. Overall, Phase III results confirm the that observed variations are spatially limited, transient in nature, and do not indicate significant environmental deterioration, supporting the continued implementation of routine monitoring to track seasonal trends and early changes over time. For more detailed information see Chapter 6.1.1.2.	TS EN ISO 5667-19, 2008. Water quality - Sampling - Part 19: Guidance on sampling of marine sediments. Good international industry practice (GIIP). IFC - PS6 - GN26: As part of the risks and impacts identification process, the client should develop and present a map of the modified, natural, and/or critical habitats …" IFC PS3 standards in accordance with the "Regulation on the Environmental Management of the Dredged Material" that came into effect through publication on the Official Gazette No. 31008 dated 14/01/2020 and IFC PS3 standards	Some critical aspects have emerged in terms of granulometry and sediment contamination in the results obtained from the last monitoring activities. However, no significant differences in terms of impacts on the component under review are expected as these appear to be consistent with the baseline and monitoring estimates made during previous phases. No Gap	No action required
6.3	Sea water (chemical and physical)	Phase 3 comprehensive assessment indicates good water quality throughout the study area, with stable water column parameters across all phases. Physicochemical indicators, including dissolved oxygen and pH, reflect a generally healthy aquatic ecosystem. In relation to chemical contaminants, water quality across the study area remains broadly consistent with previous assessments, with most parameters below detection limits or well	Turkish Standard, TS ISO 5667-9, 1997 (guidance on sampling from marine waters) and TS ISO 5667-17, 2004 (guidance on sampling of suspended sediments). Turkish Water Pollution Control Regulation - General Quality Criteria of Sea Water EU Marine Strategy - Descriptor 7: Hydrographical Conditions .Water Pollution Control Regulations (Official Gazette, dated 31 December 2014 No. 25687) and IFC PS3 standards.	Water quality across the study area remains broadly consistent with previous assessments. In relation with Phase 3, no significant differences in terms of impacts on the component under review are expected as these can be assumed to be consistent with	No action required

6	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		within regulatory thresholds. Temporary exceedances of mercury and lead observed during earlier phases were not confirmed in subsequent surveys, and, specifically, Phase 3 results from October 2025 indicate concentrations below detection limits at all sampling stations. The observed variability is therefore interpreted as episodic and seasonally driven, likely linked to natural processes such as fluvial inputs and hydrodynamic variability, rather than persistent contamination or significant anthropogenic influence. For more detailed information see Chapter 6.1.1.3		the estimates made during previous phases. However, localized exceedances observed in June 2025 within the scope of previous phase monitoring (i.e., mercury and lead) highlight the importance of maintaining targeted monitoring during summer months, especially in morphologically sensitive areas such as submarine channels and nearshore corridors. No Gap	
6.4	Physical oceanography (currents and waves)	Phase 3 collected data reflect the physical behavior of the Black Sea. The observed variations align with the basin's typical seasonal dynamics. including increased current activity in spring, a wave regime that remains variable yet within anticipated limits, and atmospheric conditions consistent with regional climatological patterns. There is no evidence of persistent or structural changes in the observed physical system. No deviations from previous baselines' values have been detected. Monitoring results align with previous observations in the same area. For more detailed information see Chapter 6.1.1.4	Good international industry practice (GIIP). ISO 21650:2007 Actions from waves and currents on coastal structures	There is currently no indication of persistent or structural changes in the physical system under observation, nor have any deviations from baseline values or notable shifts been observed when compared to previous monitoring efforts conducted in the same area. Consequently, no significant differences in terms of impacts on the component under review are expected as these can be assumed to be consistent with the estimates made during previous phases. No Gap	No actions required
6.5	Underwater noise	Phase 3 acoustic monitoring results obtained from the survey conducted between September and October 2025 in the Göktepe and Sakarya areas are consistent with information reported in previously baselines' conditions. Also, underwater noise levels appear to be primarily influenced by low-frequency anthropogenic sources, also high-frequency	EU Marine Strategy - Descriptor 11: Energy incl. Underwater Noise - "Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment" ACCOBAMS - Recommendation 12.4 "Anthropogenic Noise" of the 12th ACCOBAMS Scientific Committee Meeting.	No anomalies have been recorded when compared to expected baseline values. Consequently, no significant differences in terms of impacts on the component under review are expected as these can be assumed to be consistent with the estimates	No actions required

6	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		biological vocalizations confirm the presence of resident cetacean species. For more detailed information see Chapter 6.1.1.5.		made during previous phases. No Gap	

Table 5-7: Baseline Offshore Biological Components.

7	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
7.1	Plankton	Phase 3 results show a seasonally coherent phytoplankton community, with October species richness slightly lower than in June and September, reflecting the natural decline of late-summer blooms at mid-latitudes. The assemblage maintained the same phylum-level structure observed earlier in 2025, dominated by Heterokontophyta with stable dinoflagellate contributions and minor Chlorophyta. This pattern indicates an undisturbed and ecologically regular community. October 2025 values are consistent with expected seasonal bloom dynamics. As for zooplankton, results indicated continuity in communities, with copepods remaining the dominant group under stable environmental conditions that supported primary productivity. Key parameters remained within expected seasonal ranges, maintaining ecosystem functionality. The ecological improvements observed during Phase 2—reduced eutrophic features and strengthened mesotrophic stability—are considered applicable to the Phase 3 area, pending confirmation from future monitoring. For more detailed information see Chapter 6.1.2.1	IFC – International Finance Corporation Consider seasonality in the project field work: PS6 – GN9 – "… the baseline should include field surveys over multiple seasons, to be undertaken by competent professionals and with the involvement of external experts, as necessary." Species richness: PS6.16 – "Critical habitats are areas with high biodiversity value, …." Define the presence/absence of invasive species: "PS6.21." and "PS6 – GN27 - Clients are responsible for delineating the project site as best as possible in terms of modified and natural habitat. This determination is made based on the level of human-induced disturbance (for example, presence of invasive species)" IMO – International Maritime Organisation: Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (2012 Edition) UNEP The Black Sea Biodiversity and Landscape Conservation Protocol to the Convention on the Protection of the Black Sea Against Pollution	However, no significant differences in terms of impacts on the component under review are expected as these can be assumed to be consistent with the baseline estimates made during previous phases. No Gap	No actions required
7.2	Benthos (macroinvertebrates)	Phase 3 results remain consistent with previous surveys, confirming a stable macroinvertebrate community over time. The recurrent presence of both juvenile and adult individuals further indicates habitat stability and suggests potential nursery areas in shallower zones. The invasive species *Rapana venosa* continues to be established in the area and may represent a fisheries resource. Although none of the recorded species appear in Turkish evaluation lists or the IUCN Red List, the occurrence of commercially valuable species such as *Donax trunculus* and *Chamelea gallina* highlights the	IFC – International Finance Corporation Species richness: PS6.16 – "Critical habitats are areas with high biodiversity value, …." Critical habitats are defined by the presence of: CR and/or EN species Endemic species Migratory species. Limited distribution species. Give the IUCN status of the species to help define the status of the habitat Define the presence/absence of invasive	Compared to earlier investigations in the AoI, the number of species observed remains consistent, indicating continuity in community composition. No significant differences in terms of impacts on the component under review are expected as these can be assumed to be consistent with the baseline estimates made during previous phases.	No actions required

7	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		ecological relevance of the site, supporting a precautionary assessment approach. For more detailed information see Chapter 6.1.2.2	species: “PS6.21.” and “PS6 – GN27 - Clients are responsible for delineating the project site as best as possible in terms of modified and natural habitat. This determination is made based on the level of human-induced disturbance (for example, presence of invasive species)” Define the importance of the habitat with the information given by the presence/absence of organisms. UNEP The Black Sea Biodiversity and Landscape Conservation Protocol to the Convention on the Protection of the Black Sea Against Pollution.	No Gap	
7.3	Fish	Phase 3 survey data (October 2025) indicates no substantial differences compared to previous monitoring conducted in the same area. Indeed, overall richness patterns remain consistent across surveys, particularly under comparable seasonal conditions, despite a marginal reduction in species richness compared to the October 2024 campaign. Also, species commonly reported by fishermen align to those consistently recorded during field surveys. For more detailed information see Chapter 6.1.2.3	IFC – International Finance Corporation Consider seasonality in the project field work: PS6 – GN9 – “… the baseline should include field surveys over multiple seasons, to be undertaken by competent professionals and with the involvement of external experts, as necessary.” Species richness: PS6.16 – “Critical habitats are areas with high biodiversity value, ….” Critical habitats are defined by the presence of: CR and/or EN species Endemic species Migratory species Limited distribution species. Define the presence/absence of invasive species: “PS6.21.” and “PS6 – GN27 - Clients are responsible for delineating the project site as best as possible in terms of modified and natural habitat. This determination is made based on the level of human-induced disturbance (for example, presence of invasive species)” UNEP The Black Sea Biodiversity and Landscape Conservation Protocol to the Convention on the Protection of the Black Sea Against Pollution. ANNEX 2 Provisional List of Species of the Black Sea Importance (about 60 species of fish are listed). ANNEX 3 - Conservation of Species and Management of Their Habitats	No significant differences in terms of impacts on the component under review are expected. No Gap	No actions required

7	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
7.4	Marine mammals	Phase III results confirmed the presence of two of the three dolphin subspecies endemic to the Black Sea within the AoI: *Phocoena phocoena relicta* and *Delphinus delphis ponticus*. *Tursiops truncatus ponticus* was not recorded during this monitoring session; however, all three subspecies have been repeatedly documented during previous monitoring phases, confirming their recurrent presence in the area. The absence of observations for *T. truncatus ponticus* during Phase III is therefore likely attributable to stochastic factors or seasonal variability rather than to a change in species distribution. For more detailed information see Chapter 6.1.2.4.	IFC – International Finance Corporation Species richness: high biodiversity value, ….” Critical habitats are defined by the presence of: CR and/or EN species Endemic species Migratory species Limited distribution species UNEP The Black Sea Biodiversity and Landscape conservation Protocol to the Convention on the Protection of the Black Sea Against Pollution. ANNEX 2 Provisional List of Species of the Black Sea Importance (about 60 species of fish are listed). ANNEX 3 - Conservation of Species and Management of Their Habitats ACCOBAMS Agreements, resolutions and guidelines on marine cetaceans of the Black Sea	Overall, the data collected across different monitoring phases appear balanced, with no major changes or anomalies observed over time. No significant differences in terms of impacts on the component under review are expected as these can be assumed to be consistent with the baseline estimates made during previous phases. No Gap	No actions required
7.5	Sea birds	Some migration routes pass over the Black Sea, while majority is along the coast. Common migratory and endemic species in the Black Sea have been reported in the general Birds section in Phase 2 and no relevant changes have been observed across monitoring events up to autumn 2025.	IFC – International Finance Corporation Species richness: PS6.16 – “Critical habitats are areas with high biodiversity value, ….” Critical habitats are defined by the presence of: CR and/or EN species Endemic species Migratory species Limited distribution species	No significant differences in terms of impacts on the component under review are expected Low Risk Gap	No actions required.
7.6	Marine habitats (maps)	Habitat characterization was consistent among different phases of the monitoring program and showed the same habitat distribution among the stations sampled. Data collected during last monitoring activities suggested the presence of 4 different habitats	IFC – International Finance Corporation PS6 - GN26: As part of the risks and impacts identification process, the client should develop and present a map of the modified, natural, and/or critical habitats in the landscape of the project’s area of influence to inform the applicability of Performance Standard 6’s habitat requirements.	No significant differences in terms of impacts on the component under review are expected. No Gap	No actions required.

7	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		classified as ME54, ME64, MG64 and MB54 according to EUNIS habitat classification. In the Göktepe area, investigated between September and October 2025, the habitat identified coincided with MG64 (Black Sea abyssal mud) while in the Amasra area the habitat class resulted in ME64 (Black Sea upper bathyal mud). For more detailed information see Chapter 6.1.2.5.	PS6.16 – "Critical habitats are areas with high biodiversity value, …." Critical habitats are defined by the presence of: CR and/or EN species Endemic species Migratory species Limited distribution species PS6.11 - Modified habitats are areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition. PS6.13 - Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition. EMODnet: EUSeaMap; a European broad-scale seabed habitat map		
7.7	Critical habitat assessment	Critical Habitats (CHs) within the area have been identified based on Criteria 1 and 3 of IFC Performance Standard 6. According to the surveys from previous phases the offshore CH was triggered by the presence of *Phocoena phocoena relicta*, *Tursiops truncatus ponticus*, and *Delphinus delphis ponticus* under Criterion 1 and 3. For more detailed information see Chapter 8.1.	PS6 – All the habitats need to be defined with the following mentions: Critical habitat Natural habitat Modified habitat	The Critical Habitat assessment remains consistent with previous project phases. No Gap	No actions required.
7.8	Marine archaeology	The following data are available in the Phase 1 ESIA Report and are maintained for Phase 3: Underwater Archaeology Directorate of Bodrum had provided an official report. According to the report prepared (June 8th, 2021) YTS, Magnetic Magnotometre and ROV inspections were realized on-site in relation to the width, depth of the inspection area as well as to the visibility of the seabed. No evidence for any cultural asset that needs protection in relation to the "Law on the Protection of Cultural Assets" with No 2863 was detected.	PS6.6 6. In addition to complying with applicable law on the protection of cultural heritage, including national law implementing the host country's obligations under the Convention Concerning the Protection of the World Cultural and Natural Heritage, the client will identify and protect cultural heritage by ensuring that internationally recognized practices for the protection, field-based study, and documentation of cultural heritage are implemented.	. No significant differences in terms of impacts on the component under review are expected. Low Risk Gap	No actions required.

7	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		No anomalies related to cultural heritage was identified in the report, based on Side Scan Sonar and Magnetic Magnetometer scans, and the scans were examined with ROV. The Magnetic scans cover an area 20 km from the shore. The maximum depth surveyed was 1200m. A baseline marine archaeology for Phase 3 has been produced using SSS data from 2021 surveys and 2025 MBES Phase 3. A shipwreck has been identified within the Amsara Gas Field, however, it appears not to be interested by any project component or action. During the EIA process, regulatory agencies will provide official opinion and reports on marine archaeology.			
7.9	Marine Ecosystem services Fishery	The following data, collected for Phase I, were considered valid for Phase II and are maintained for Phase III: The socioeconomic analysis report provides information on the fishing activities based on the desktop review. Technical Report on a General Evaluation on Filyos Fishing was prepared by T.C. Ministry of Agriculture and Forestry Trabzon Fisheries Central Research Institute Directorate Department of Fisheries Management Technical Report on a General Evaluation on Filyos Fishing was prepared by T.C. Ministry of Agriculture and Forestry Trabzon Fisheries Central Research Institute Directorate Department of Fisheries Management in 2021. Socioeconomic surveys were undertaken in 2022 and 2024, evaluating fishers and their livelihoods. Phase I ESIA includes the baseline on marine ecosystem services and fisheries. The baseline was later integrated for Phase II expansions. TP-OTC is engaging with the fishers on a regular basis. TP-OTC has disclosed its SEP, GM and LRP to the fishers. Fishers are informed on the Project actions and NAVTEX announcements on restricted areas on a regular basis.	IFC PS6 IFC PS5	Phase 3 project components will not affect further fisheries in the area Low Risk Gap	No further actions required. If any further access restrictions are imposed on fishers, the potential impacts on their livelihoods should be evaluated.

7	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		The areas where fishing is prohibited but transit is permitted will not extend beyond the zones already restricted under Phase 1 and Phase 2. Official records from the Filyos Fisheries Cooperative also show a general increase in catches and revenue during the first quarter of 2025, the data collected on fish biodiversity and abundance seem to align with the absence of possible catch-loss. XX			

Table 5-8: Baseline Offshore Social Components

8	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
	Refer to 7.8 and 7.9				

Table 5-9: Onshore Physical Impact Assessment

9	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
9.1	Air Quality	Construction works in the onshore will only be carried out for the landfall of Phase 3. There will not be any construction activity outside of that area. During the construction phase of the Phase 2, air emissions are expected to be originated from exhausts of construction equipment as well as construction activities (i.e., excavation, loading/unloading in the landfall part for the Phase 2) and movements of construction equipment. During the operation phase, gas will not be processed in the OPF and will be directly connected to the BOTAS tie-in point. Regarding that there will not be any capacity increase in the OPF in order to process the gas extracted within the scope of Phase 2, evaluation of air emissions of OPF presented in the disclosed ESIA is still valid. Moreover, TPOTC has been conducting air quality monitoring campaign since 2022 in order to monitor the impacts of the Phase 1 activities.	PS1, PS3, EP4, Turkish Regulations IFC PS3-GN1: "…clients should take into account the potential impact of their activities on ambient conditions (such as ambient air quality) and seek to avoid or minimize these impacts within the context of the nature and significance of pollutants emitted.… Large projects with potentially significant emissions and/or high impacts, however, may require monitoring of impacts on the surrounding environment (i.e., changes in ambient levels), in addition to the implementation of control measures…" IFC EHS Guidelines - Onshore Oil and Gas Development: "Air quality impacts should be estimated by the use of … and atmospheric dispersion models to establish potential ground level ambient air concentrations during facility design and operations planning as described in the General EHS Guidelines. These studies should ensure that no adverse impacts to human health and the environment result." IFC PS3.7: "…the client will consider alternatives and implement technically and financially feasible and cost-effective options to reduce project-related GHG emissions during the design and operation of the project. These options may include, but are not limited to, alternative project locations, adoption of renewable or low carbon energy sources, sustainable agricultural, forestry and livestock management practices, the reduction of fugitive emissions and the reduction of gas flaring" EP4 – Principle 2	Pollution Prevention Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan to include Phase 3.
9.2	Geology and geomorphology	This component was evaluated in the Phase1 ESIA: Phase 3 will remain in the already evaluated Phase 1 boundaries.	IFC PS1, PS3, Turkish regulations IFC General EHS Guidelines EP4 – Principle 2	No Gaps	No action required
9.3	Soil	The Phase 3 will remain in already evaluated Phase 1 boundaries. Soil in the landfall area will be excavated and re-used as fill during the construction of the pipeline landfall. Potential soil contamination issues will be managed using the Pollution Prevention Plan.	IFC PS1, PS3, Turkish regulations IFC General EHS Guidelines EP4 – Principle 2	No Gap.	No action required
9.4	Hydrology and surface water quality	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point. Pollution Prevention Plan addresses management of discharges, as well as the Waste Management Plan.	IFC PS1, PS3, Turkish regulations IFC General EHS Guidelines 1.3 Wastewater and Ambient Water Quality 1.4 Water Conservation 3.0 Community Health and Safety	Pollution Prevention Plan and Waste Management Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan and Waste Management Plan to include Phase 3.

9	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
			EP4 – Principle 2		
9.5	Hydrogeology and groundwater quality	No activity onshore will take place except for the construction of the pipeline in the landfall area and connection to the tie-in point. Pollution Prevention Plan addresses management of discharges, as well as the Waste Management Plan.	IFC PS1, PS3, Turkish regulations IFC General EHS Guidelines 1.3 Wastewater and Ambient Water Quality 1.4 Water Conservation 3.0 Community Health and Safety EP4 – Principle 2	Pollution Prevention Plan and Waste Management Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan and Waste Management Plan to include Phase 3.
9.6	Noise and Vibration	Construction works in the onshore will only be carried out for the landfall of Phase 3. There will not be any construction activity outside of that area. During the construction phase of the Phase 3, noise emissions are expected to be originated from the movements and operation of construction equipment in the landfall area of Phase 3. During the operation phase, gas will not be processed in the OPF and will be directly connected to the BOTAS tie-in point. Regarding that there will not be any capacity increase in the OPF in order to process the gas extracted within the scope of Phase 2, evaluation of noise impacts of OPF presented in the disclosed ESIA is still valid. Moreover, TPOTC has been conducting noise monitoring campaign since 2022 in order to monitor the impacts of the Phase 1 activities at the closest sensitive receptors.	IFC PS1, PS3, EP4, Turkish Regulations IFC EHS Guidelines- Noise Management: "Noise impacts should not exceed the levels presented in Table 1.7.1 or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site." IFC EHS Guidelines - Onshore Oil and Gas Development: "Noise impacts should be estimated by the use of baseline noise assessments for developments close to local human populations. For significant noise sources, such as flare stacks at permanent processing facilities, noise dispersion models should be conducted to establish the noise level guidelines can be met and to assist in the design of facility siting, stack heights, engineered sound barriers, and sound insulation on buildings." EP4 – Principle 2	Pollution Prevention Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan to include Phase 3.
9.7	Visual Aesthetics	Phase 1 of the SGFD which is one of the pre-existing components of the Phase 2 Project exists on the site. Visual impacts of the Phase 1 both during construction and operation were evaluated and mitigation measures were defined in the disclosed ESIA of the Phase 1. During the construction of the landfall area for Phase 3, no additional visual impacts to those defined in the disclosed ESIA Report for Phase 3 are anticipated.	IFC PS1, PS4, EP4 IFC General EHS Guidelines 3. Community Health and Safety EP4 – Principle 2	No Gap.	No action required

9	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
9.8	Odor	Odor related to natural gas ventilation, wastewater treatment plant and exhaust gases were addressed in the ESIA of the Phase 1 and mitigation measures were defined. No additional impacts are anticipated originated from the construction and operation of the Phase 3.	PS2, PS4, EP4 – Principle 2	Pollution Prevention Plan will be updated for Phase 3 No Gap	Update Pollution Prevention Plan to include Phase 3.
9.9	Wastewater	During the construction activities of the Phase 3, the only wastewater to be originated in the onshore will be domestic wastewater due to the construction personnel. The domestic wastewater will be treated in the domestic wastewater treatment plant of the TP-OTC which is also a pre-existing structure. The domestic wastewater generated by the current operational personnel of Phase 1 is also treated in that wastewater treatment plant and discharged to the Filyos Creek. There will not be any additional wastewater generated onshore for Phase 3.	IFC PS1, PS3, IFC EHS Guideline for Onshore Oil and Gas Development, Turkish regulations IFC General EHS Guidelines 1.3 Wastewater and Ambient Water Quality 1.4 Water Conservation 3.0 Community Health and Safety EP4 – Principle 2	No Gap	No action required

Table 5-10: Offshore Impact Assessment

10	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
10.1	Offshore biological	Baseline data have been collected.	IFC PS1, PS6 EP4 – Principle 2	No gaps identified	No additional actions required, only realignment of previous phases's mitigation and monitoring measures with Phase 3 project components and actions.
10.2	Offshore physical	Baseline data have been collected.	IFC PS1, PS6 EP4 – Principle 2	No gaps identified	No additional actions required, only realignment of previous phases's mitigation and monitoring measures with Phase 3 project components and actions.

Table 5-11: Impact Assessment – Other Components

11	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
11.1	Onshore terrestrial biological components	The construction works in the onshore section of the SGFD within the scope of Phase 3 will be located east of the Phase 1 and Phase 2 landfall areas, directly affecting the B1.6 (Coastal dune scrub), B1.4 (Black Sea coastal stable dune grassland – grey dunes), and G1.1 (Riparian and gallery woodland) habitats. Similar to the Phase 1 pipeline construction, direct impacts such as removal of natural vegetation and removal of soil are expected during the Phase 3 pipeline construction. Indirect impacts during the construction and operation phases, including the emission of dust and particulate matter, possible introduction of alien species, aerial noise and vibration, increased and modified onshore traffic, and emission of light were already assessed under the Phase 2 ESIA. The mitigation measures defined in that assessment are considered adequate, and therefore, no further assessment is required for Phase 3 for indirect impacts.	IFC PS1, PS6 EP4 – Principle 2	Direct impacts of Phase 3 activities on onshore terrestrial flora and fauna components need to be evaluated. Medium Risk Gap	Perform an onshore terrestrial flora and fauna direct impact assessment for Phase 3. Indirect impacts were already assessed under the Phase 2 ESIA, and no additional indirect impacts are expected; therefore, no further assessment is required.
11.2	Impact on climate change (GHG emissions)	In the ESIA Reports of the Phase 1 and 2, Scope 1 and 2 emissions were calculated. SGFD monitors and reports its GHG emissions annually in compliance with the Turkish Regulation on Monitoring, Reporting and Verification of Greenhouse Gas Emissions, including third-party verification and submission to the MEUCC. The following management plans have been prepared for the SGFD: • Pollution Prevention Plan (including GHG emissions) • Resource Efficiency Management Plan	IFC PS3 For projects that are expected to or currently produce more than 25,000 tonnes of CO2- equivalent annually, the client will quantify direct emissions from the facilities owned or controlled within the physical project boundary, as well as indirect emissions associated with the off-site production of energy8 used by the project. EP4 Principle 10 EP4 requires projects to report annual GHG emissions (Scope 1 and Scope 2) and the GHG efficiency ratio, during the operational phase. This is applicable to all projects emitting more than 100,000 tonnes of CO2eq annually. Projects with emissions more than 25,000 tonnes of CO2eq annually are encouraged to undertake GHG reporting. The Task Force Related Financial Disclosure (TCFD) The TCFD recommends disclosure of Scope 1, Scope 2 and, if appropriate Scope 3 GHG emissions and related risks. Sustainability Reporting Guidance for the Oil and Gas Industry (IPIECA 2020)	Pollution Prevention Plan (including GHG emissions) and Resource Efficiency Management Plan have not been updated to consider the Phase 3. Scope 1 and 2 emissions of Phase 3 have not been quantified. Aggregate GHG emissions from Phase 3 activities should be quantified annually in accordance with internationally recognized methodologies Low Risk Gap	To meet the EP4, TCFD and IPIECA 2020 requirements, a GHG emissions inventory would have to be prepared based on the project sources, consistent with the air quality inventory. The GHG inventory will include: • GHG emission estimates calculated on an annual basis for Scope1 and Scope 2 sources. • GHG emissions for each business activity (e.g., natural gas production, electricity generation, on-site mobile equipment), consistent with the sources in the air quality inventory. • GHG emissions intensity for the Project. • Information on all data sources and assumptions used while developing the GHG inventory.

11	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
			The guideline requires reporting of: Company-wide Scope 1 and Scope 2 emissions including carbon-dix-oxide, methane and direct other GHGs. GHG emissions should be reported by business activity (e.g., oil and gas production, refining). Reporting emissions intensity for the entire project and for each business activity, if appropriate.		
11.3	Climate Impact Assessment and Climate Vulnerability Assessment	Climate Conditions: National EIA Report defines the current meteorological and climate conditions for temperature, rainfall, humidity, wind speed and direction, and storms. Phase 1 and 2 ESIAs have detailed baseline and assessment of the meteorological and climatic conditions. Climate Impact and Vulnerability Assessment: National EIA does not include information on impacts of physical and transitional climate risks on the Project (benefits the Project will bring with respect to GHG emissions savings) in accordance with the requirements of EP4. Applicable international legislation and standards have been identified for Phase 1 and 2 and are applicable for Phase 3. In the ESIA Reports of the Phase 1 and 2, Scope 1 and 2 emissions were calculated, alternatives analysis for lower GHG emissions were evaluated and Climate Change Risk Assessments in accordance with EP 4 guidance were undertaken for each phase, with most recent climate data in 2024. The overall system configuration for Phase 3 mirrors Phase 2 in terms of technical concept. As such, a Climate Change Risk Assessment with EP 4 has not been prepared for Phase 3. The gas processing capacities of Phase 2 and Phase 3 FPUs will be the same.	IFC PS1, PS3, EP4 IFC PS1-GN33: “A project’s vulnerability to climate change and its potential to increase the vulnerability of ecosystems and communities to climate change should dictate the extent of climate change considerations in the risks and impacts identification process” EP4: A climate risk assessment should identify: current and future transitional and physical climate risks on project’s operations. any plans or policies in place to manage those risks, project’s compatibility with host country’s national commitments, where applicable. TCFD: TCFD recommends the disclosure of: description of climate-related (physical and transitional) risks over short, medium, and long term that have been identified. description of climate-related impacts to operations and business. description of resilience of organization’s strategy, considering different climate scenarios, including 2 ^{o}C or lower scenario. IPIECA 2020: ‘The CCE-2: Climate Risks and Opportunities’ standard mentions the need to identify and evaluate risks and opportunities related to: energy transition (transitional risks) climate impacts such as sea levels or flood risk (physical risks).	Physical risks for Phase 3 considered similar to Phase 2; existing assessment deemed sufficient. No gap for physical risk. Transitional risks require review due to evolving global (COP outcomes) and national climate policies. Low Risk Gap	Review and update transitional risk assessment to reflect recent COP decisions, Türkiye’s climate commitments, and energy transition trends. Ensure alignment with EP4 Annex A, TCFD scenario analysis, and IPIECA guidance. No additional action required for physical risk. If the Phase 3 FPU design and capacity significantly deviates from Phase 2, CCRA should be undertaken for physical risks as well.

Table 5-12: Social Impact Assessment

12	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
12.1	Stakeholder Identification and Engagement	Stakeholders were identified and mapped during Phase 1 and 2 ESIA processes. TP-OTC has a Stakeholder Engagement Plan, Grievance Mechanism and engages regularly with its stakeholders. Minor changes to stakeholders, specifically contractors and internal stakeholders is anticipated during Phase 3. The Public Participation Meeting for the national EIA was undertaken on 08.08.2024.	IFC PS1 A Good Practice Handbook for Companies Doing Business in Emerging Markets EP4 – Principle 5 For all Category A and Category B Projects the EPFI will require the client to demonstrate effective Stakeholder Engagement, as an ongoing process in a structured and culturally appropriate manner, with Affected Communities, Workers and, where relevant, Other Stakeholders…For Projects with potentially significant adverse impacts on Affected Communities, the client will conduct an Informed Consultation and Participation process…To facilitate Stakeholder Engagement, the client will, commensurate with the Project's risks and impacts, make the appropriate Assessment Documentation readily available to the Affected Communities, and where relevant Other Stakeholders, in the local language and in a culturally appropriate manner. The client will take account of, and document, the results of the Stakeholder Engagement process, including any actions agreed resulting from such process. Disclosure of environmental or social risks and adverse impacts should occur early in the Assessment process, in any event before the Project construction commences, and on an ongoing basis.	SEP has not been updated for Phase 3. Low Risk Gap	Update the SEP to include Phase 3.
12.2	Vulnerability and Community Impacts	Vulnerable groups were identified during Phase 1 and 2. No changes to community impacts are anticipated as Phase 3 remains within the already evaluated national EIA boundaries. While not anticipated, changes in vulnerable groups should be updated for Phase 3.	IFC PS1 A Good Practice Handbook for Companies Doing Business in Emerging Markets EP4 – Principle 5 The client will tailor its consultation process to: the risks and impacts of the Project; the Project's phase of development; the language preferences of the Affected Communities; their decision-making processes; and the needs of disadvantaged and vulnerable groups.	Potential changes to vulnerable groups have not been evaluated for Phase 3. Low Risk Gap	Evaluate the vulnerable groups update SEP.
12.3	Transportation and traffic	Transportation and traffic were evaluated in Phase 1 and 2 ESIAs and national EIA. No new access roads will be built. Traffic load is not anticipated to be higher than Phase 1 or 2. TP-OTC has Traffic Management Plan and procedures to evaluate risks and mitigate based on Phase 3 activities and schedule.	IFC PS1 IFC General EHS Guidelines 3.0 Community Health and Safety	Traffic Management Plan will be updated for Phase 3 No Gap	Update Traffic Management Plan to include Phase 3.

12	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
12.4	Consultation and participation / GRM	Stakeholders were identified and mapped during Phase 1 and 2 ESIA processes. TP-OTC has a Stakeholder Engagement Plan, Grievance Mechanism and engages regularly with its stakeholders. The Public Participation Meeting for the national EIA was undertaken on 08.08.2024.	IFC PS1 A Good Practice Handbook for Companies Doing Business in Emerging Markets EP4 – Principle 5 For all Category A and Category B Projects the EPFI will require the client to demonstrate effective Stakeholder Engagement, as an ongoing process in a structured and culturally appropriate manner, with Affected Communities, Workers and, where relevant, Other Stakeholders EP4 – Principle 6 For all Category A and, as appropriate, Category B Projects, the EPFI will require the client, as part of the ESMS, to establish effective grievance mechanisms which are designed for use by Affected Communities and Workers, as appropriate, to receive and facilitate resolution of concerns and grievances about the Project's environmental and social performance…The client will inform Affected Communities and Workers about the grievance mechanisms in the course of the Stakeholder Engagement process	Statuary consultations per the national EIA requirements will be held in addition to regular engagement carried out by the TP-OTC community liaison team. SEP needs to be updated to include Phase 3. Stakeholders need to be consulted and informed on Phase 3 actions and schedule and impacts. Low Risk Gap	Update SEP for Phase 3. Continue to undertake meaningful consultations with affected communities and other stakeholders (particularly, NGOs) and conduct ICP process. Inform stakeholders on Phase 3 actions and schedule on a regular basis, as defined in the SEP.
12.5	Disclosure and Access to Information	Public Participation Meeting was held on 08.08.2024. National EIA is disclosed on the MoEUCC's website as per the EIA Regulation. Phase 1 and 2 ESIA disclosures per Project Standards was carried out.	IFC PS1 A Good Practice Handbook for Companies Doing Business in Emerging Markets EP4 – Principle 5 To facilitate Stakeholder Engagement, the client will, commensurate with the Project's risks and impacts, make the appropriate Assessment Documentation readily available to the Affected Communities, and where relevant Other Stakeholders, in the local language and in a culturally appropriate manner. EP4 – Principle 10 The client will ensure that, at a minimum, a summary of the ESIA is accessible and available online and that it includes a summary of Human Rights and climate change risks and impacts when relevant	Statuary consultations per the national EIA requirements will be held in addition to regular engagement carried out by the TP-OTC community liaison team in accordance with the SEP. SEP needs to be updated to include Phase 3. Stakeholders need to be consulted and informed on Phase 3 actions and schedule and impacts. Low Risk Gap	Update SEP for Phase 3 to: Define the approach for disclosure for preconstruction, construction and operation phases (e.g., by making the NTS available through the mukhtars, the information that will be shared during each project phases, responsible parties) Provide details on how stakeholders will participate in Project impact monitoring (air, noise) Provide the content of the Annual Environmental and Social Report, to include, as a minimum an update on any Project components, impacts or mitigation measures Disclose SEP and NTS in local language including a summary of Human Rights and climate change risks and impacts when ready.
12.6	Land Acquisition Physical Displacement, Compensation, Livelihood restoration	National EIA Application File and liaison with TP-OTC, documents reviewed to date for the Phase 3 SLIP do not infer any resettlement.	IFC PS5 EP4 – Principle 2	SEP needs to be updated to include Phase 3. Stakeholders need to be consulted and informed on	Update SEP for Phase 3. Disclose SEP and NTS in local language including a summary of

12	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		Livelihood impacts on fishers is anticipated to continue, similar to Phase 1 and 2, due to NAVTEX announcements for Phase 3. TP-OTC has LRPs for Phase 1 and 2.		Phase 3 actions and schedule and impacts. Low Risk Gap	Human Rights and climate change risks and impacts when ready.
12.7	Influx	No major influx compared to Phase 1 or 2, is anticipated for Phase 3. TP-OTC has an Influx Management Plan.	IFC PS1 EP4 – Principle 2	Influx Management Plan needs to be updated for Phase 3. No Gap	Update Influx Management Plan for Phase 3.
12.8	Cultural Heritage	The onshore cultural heritage aspects were assessed in the Phase 1 and Phase 2 ESIAs. The Phase 3 onshore footprint is confined to the landfall area, which had been evaluated previously and where no cultural heritage resources were identified. Offhore cultural heritage is limited to “traditional fishing” which is not further impacted in Phase 3. There is a Cultural Heritaqe Management and Chance Find Procedure which will be implemented in case of any cultural heritage is encountered.	Turkish Regulations PS8 GN3. Integration of cultural heritage preservation and protection into the project’s assessment process and management systems is essential because damage to cultural heritage can result from activities other than direct excavation or refurbishment of buildings. EP4 – Principle 2	No Gap	
12.9	Human rights	Human Rights Impact Assessment (HRIA) was prepared for Phase 1 and 2. Human Rights Management Plan has been prepared. It has not been updated to incorporate Phase 3.	IFC PS1 Equator Principles, Principle 2: The client is expected to include assessments of potential adverse Human Rights impacts and climate change risks as part of the ESIA or other Assessment, with these included in the Assessment Documentation. The client should refer to the UNGPs3 when assessing Human Rights risks and impacts, …... EP4 - Principle 2 The client is expected to include assessments of potential adverse Human Rights impacts as part of the ESIA or other Assessment, with these included in the Assessment Documentation. The client should refer to the UNGPs when assessing Human Rights risks and impacts.	Human Rights Management Plan will be updated to incorporate Phase 3. No Gap	Update Human Rights Management Plan to incorporate Phase 3.

Table 5-13: Environmental and Social Management System

13	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
13.1	Policy	TPAO has an integrated management system, certified to ISO standards, with policies on information security, environmental protection, energy management, ethics, and health and safety published on its website. TPAO's policies and procedures, within the framework of the Integrated Management System, are compliant with ISO standards. TP-OTC also has an integrated management system policy that aligns with ISO standards, and it is understood that SGFD activities are guided by this approach. Policies on information disclosure, accident prevention, and human resources are in place and actively implemented.	PS1.6 The client will establish an overarching policy defining the environmental and social objectives and principles that guide the project to achieve sound environmental and social performance.	No Gap.	No action required.
13.2	Identification of Risks and Impacts	An ESIA process was conducted for Phase 1 of the SGFD. Following its completion, TP-OTC established and implemented an environmental and social management system to identify and manage the relevant risks associated with Phase 1. For Phase 2, TP-OTC has completed the national EIA and İnternational ESIA processes. Based on these studies, ESMS plans and procedures to mitigate, manage and monitor SGFD impacts have been prepared. The plans and procedures will be updated to incorporated Phase 3, to mitigate, manage and monitor Phase 3 related construction and operation impacts.	Turkish Regulations PS1.7 The client will establish and maintain a process for identifying the environmental and social risks and impacts of the project EP4 – Principle 2 The EPFI will require the client to conduct an appropriate Assessment process to address, to the EPFI's satisfaction, the relevant environmental and social risks and scale of impacts of the proposed Project.	No Gap	Update ESMS plans and procedures to incorporate Phase 3.
13.3	Third Party Actions	No additional pipelines, ETLs or roads will be built and/or operated by third parties.	PS1.9 - In the event of risks and impacts in the project's area of influence resulting from a third party's actions, the client will address those risks and impacts in a manner commensurate with the client's control and influence over the third parties, and with due regard to conflict of interest.	No Gap	No action required.
13.4	Management Programs	TPAO has an integrated management system, with the ISO certification. TPAO's procedures, within the context of Integrated Management System are compliant with the ISO Standards.	PS1.16 - The management programs will establish environmental and social Action Plans, which will define desired outcomes and actions to address the issues (…) with elements such as performance indicators, targets, or acceptance criteria that can be tracked over defined time periods, and with estimates of the resources and responsibilities for implementation.	The current ESMS does not include all of the Phase 3 activities.	Review and revise the current ESMS where necessary in terms of risks and impacts of the Phase 3.

13	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		TP-OTC has also an integrated management system which is compliant with the ISO Standards. It is understood that SGFD activities are also guided by this integrated management system approach. Moreover, there is a defined ESMS which describes mitigation and performance improvement measures and actions that address the identified environmental and social risks and impacts of the SDGF.	EP4 – Principle 4 For all Category A and Category B Projects the EPFI will require the client to develop and / or maintain an Environmental and Social Management System (ESMS)	Low Risk Gap	
13.5	Organisational Capacity and Competency	To effectively manage HSSE concerns related to the SGFD and ensure proper implementation of the ESMP requirements, TP-OTC has formed a specialized HSSE team. This team is comprised of 25 staff members focused on overseeing environmental and social matters. TP-OTC presented an organisational structure for the Project implementation including key E&S roles including HSSE Director, E&S Manager, OHS Manager, CLO and supporting team. Environmental, OHS and social experts have been appointed to implement Project development phase.	PS1.17- The client, in collaboration with appropriate and relevant third parties, will establish, maintain, and strengthen as necessary an organizational structure that defines roles, responsibilities, and authority to implement the ESMS	No Gap.	Review and revise the current organizational structure where necessary in terms of roles and responsibilities for Phase 3.
13.6	Emergency Preparedness and Response	Refer to Item 2.4	Refer to Item 2.4	Refer to Item 2.4	Refer to Item 2.4
13.7	Monitoring and Review	EIA and ESIAs for the SGFD Phase 1 and 2 addresses the requirement of preparation of progress reports and submitting the reports to MoEUCC and Lenders in periods to be defined. TP-OTC established and implemented ESMS including monitoring actions/measures, key performance indicators, monitoring frequencies, targets and responsibilities in accordance with local regulations and IFC Performance Standards. Environmental and Social Monitoring Plan was developed for the construction and operation phases.	Turkish Regulations PS1.22 - The client will establish procedures to monitor and measure the effectiveness of the management program, as well as compliance with any related legal and/or contractual obligations and regulatory requirements.	Management Plans and Procedures will be updated to incorporate the Phase 3 activities. No Gap	Update Management Plans and Procedures to incorporate the Phase 3 activities.

Table 5-14: Labor and Working Conditions

14	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
14.1	Human Resources Policies and Procedures	TP-OTC has a Human Resources Policy aligned with international and national requirements, and encompasses recruitment, equal opportunity, non-discrimination/anti-harassment, workplace violence, worker protection, safety, grievance handling, conflict of interest, codes of conduct, confidentiality, moonlighting, and an open-door policy. TP-OTC has the following HR plans in place: Camp Site Plan Contractor Management Plan Human Rights Management Plan Influx Management Plan Labor Management Plan Offsite Accommodation Plan Stakeholder Engagement Plan Grievance Mechanism	PS2.8 - The client will adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of this Performance Standard and national law. The client will provide workers with documented information that is clear and understandable, regarding their rights under national labor and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur.	Policy and Procedures will be updated for Phase 3. No Gap	Update Policy and Procedures to include Phase 3, as necessary.
14.2	Working Conditions and Terms of Employment	Labor Management Plan covers the fundamental principles and rights of workers, including: fair treatment; non-discrimination and equal opportunities of workers; compliance with national labor and employment laws and International Standards on working conditions; establishing, maintaining, and improving a sound worker-employer relationship; promoting compliance with collective agreements to which TP-OTC is a party; protecting and promoting the safety and health of workers, especially by promoting safe and healthy; working conditions; preventing the use of forced labour and child labour (as defined by the ILO and Turkish legislation).	PS2.10 - Where the client is a party to a collective bargaining agreement with a workers' organization, such agreement will be respected. Where such agreements do not exist, or do not address working conditions and terms of employment, the client will provide reasonable working conditions and terms of employment.	Policy and Procedures will be updated for Phase 3. No Gap	Update Policy and Procedures to include Phase 3, as necessary.

14	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
14.3	Workers' Organisations	see item 14.2	PS1 – Policies PS2.13 - In countries where national law recognizes workers' rights to form and to join workers' organizations of their choosing without interference and to bargain collectively, the client will comply with national law. Equator principles 2,5 and 6		
14.4	Non-Discrimination and Equal Opportunity	see item 14.2	PS2.16 - countries where national law provides for non-discrimination in employment, the client will comply with national law.		
14.5	Retrenchment	It is not known at this stage if a retrenchment plan may be required for Phase 3.	PS2.18 - Prior to implementing any collective dismissals,10 the client will carry out an analysis of alternatives to retrenchment.11 If the analysis does not identify viable alternatives to retrenchment, a retrenchment plan will be developed and implemented to reduce the adverse impacts of retrenchment on workers.	No Gap	Develop retrenchment plan if required.
14.6	Grievance Mechanism	TP-OTC has a Grievance Mechanism	PS2.20 - The client will provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. EP4 – Principle 6 For all Category A and, as appropriate, Category B Projects, the EPFI will require the client, as part of the ESMS, to establish effective grievance mechanisms which are designed for use by Affected Communities and Workers, as appropriate, to receive and facilitate resolution of concerns and grievances about the Project's environmental and social performance…The client will inform Affected Communities and Workers about the grievance mechanisms in the course of the Stakeholder Engagement process	No Gap	No relevant action
14.7	Protecting the Work Force (Child Labor, Forced Labor)	see item 14.2	PS2.21 - The client will not employ children in any manner that is economically exploitative or is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. PS2.22- The client will not employ forced labor, which consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty.	No Gap	No relevant action
14.8	Occupational Health and Safety	EPCI Contractors Health and Safety Management Plans are in place and align with TP-OTC Management Plans. TP-OTC's Health, Safety, Social and Environmental (HSSE) Team consists of a dedicated team of 25 experts to take all the	PS2.23 - The client will address areas that include the (i) identification of potential hazards to workers, particularly those that may be life-threatening; (ii) provision of preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; (iii) training of workers; (iv) documentation and reporting of occupational	OHS Plans and Procedures will be updated for Phase 3. No Gap	Update OHS Plans and Procedures for Phase 3

14	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		environmental, health, safety and social actions in a timely and effective manner and to improve the overall E&S performance of the SGFD. TP-OTC has an Integrated Management System including certification for ISO 45001:2018 - Health and safety management systems. The certificate is valid until May 2028. All EHS accidents, incidents and near misses data are collected through SAP system.	accidents, diseases, and incidents; and (v) emergency prevention, preparedness, and response arrangements		
14.9	Workers Engaged by Third Parties	TP-OTC grievance mechanism is extended to its contractors. Following plans address workers engaged by Third Parties: Contractor Management Plan Human Rights Management Plan Influx Management Plan Labor Management Plan Offsite Accommodation Plan Stakeholder Engagement Plan Grievance Mechanism	PS2.24- With respect to contracted workers the client will take commercially reasonable efforts to ascertain that the third parties who engage these workers are reputable and legitimate enterprises and have an appropriate ESMS PS2.25 - The client will establish policies and procedures for managing and monitoring the performance of such third-party employers in relation to the requirements of this Performance Standard	HR Plans and Procedures may need to be updated for Phase 3, as needed to address specific concerns related to Phase 3. No Gap	Update HR Plans and Procedures for Phase 3 as needed to address workers engaged by third parties for Phase 3.
14.10	Supply Chain	Refer to Item 2.11	Refer to Item 2.11	Refer to Item 2.11	Refer to Item 2.11

Table 5-15: Resource Efficiency and Pollution Prevention

15	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
15.1	Resource Efficiency	TP-OTC developed a project-specific Environmental and Social Management System for SGFD, which includes various management plans, such as the Resource Efficiency Management Plan. This plan outlines the management system to be implemented for identifying measures and corporate targets aimed at reducing resource consumption. It also focuses on avoiding, or when avoidance is not possible, minimizing and controlling negative environmental impacts, including those related to greenhouse gas emissions, and conserving air, water, and soil resources from adverse effects resulting from Phase 1 and 2 activities.	PS3.6- The client will implement technically and financially feasible and cost-effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities.	Resource Efficiency Management Plan will be updated to ensure alignment with Phase 3 activities. No Gap	Review and revise the management plan as needed to align with the activities of Phase 3.
15.2	Pollution Prevention	TP-OTC developed an ESMS for SGFD, which includes the Pollution Prevention Management Plan to identify pollution sources and implement the mitigation hierarchy to eliminate the impacts of pollution generated by the Phase 1 and 2.	PS1.10- The client will avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release	Pollution Prevention Plan will be updated to ensure alignment with Phase 3 activities. No Gap	Review and revise the plan as needed to align with the activities of Phase 3.
15.3	Hazardous Material Management	TP-OTC developed an ESMS for SGFD. The strategy for managing hazardous materials throughout the lifetime is detailed in the Chemical and Hazardous Material Management Plan. Developed by TP-OTC, this plan provides guidelines and requirements for handling chemicals and hazardous materials, ensuring that risks to personnel, the public, the environment, and installations are thoroughly assessed. It aligns with TP-OTC policies, guidelines, and international standards and applies to all phases of the Project, including activities by TP-OTC and its contractors	Turkish Regulations PS3.13- The client will avoid or, when avoidance is not possible, minimize and control the release of hazardous materials. In this context, the production, transportation, handling, storage, and use of hazardous materials for project activities should be assessed. The client will consider less hazardous substitutes where hazardous materials are intended to be used in manufacturing processes or other operations. The client will avoid the manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer. PS4.7- The client will avoid or minimize the potential for community exposure to hazardous materials and substances that may be released by the project.	The ESMS will be reviewed to ensure alignment with Phase 3 activities. No Gap	Review and revise the management plan as needed to align with the activities of Phase 3.

Table 5-16: Community Health and Safety

16	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
16.1	Community Health and Safety	Community health and safety was evaluated for Phase 1 and 2 in the respective ESIAs. TP-OTC has plans and procedures to ensure Community Health and Safety: Community Health, Safety, and Security Management Plan; Influx Management Plan; Stakeholder Engagement Plan (SEP).	Turkish Regulations PS4.5 - The client will evaluate the risks and impacts to the health and safety of the Affected Communities during the project life-cycle and will establish preventive and control measures consistent with good international industry practice (GIIP), such as in the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines) or other internationally recognized sources.	The Community Health, Safety, and Security Management Plan; Influx Management Plan; Stakeholder Engagement Plan (SEP). will be updated to include Phase 3. No Gap	Evaluate Community Health and Safety in the ESIA and update the Community Health, Safety, and Security Management Plan; Influx Management Plan; Stakeholder Engagement Plan (SEP). to align with Phase 3 scope.
16.2	Infrastructure and Equipment Design and Safety	During the project design phase, the Hazard Identification (HAZID) and Hazard and Operability (HAZOP) studies are being performed for Phase 3.	Turkish Regulations PS4.6 - The client will design, construct, operate, and decommission the structural elements or components of the project in accordance with GIIP, taking into consideration safety risks to third parties or Affected Communities.	Management plans to mitigate community health and safety risks associated from the Phase 3 activities need to be updated. No Gap	Evaluate Community Health and Safety in the ESIA and update the Community Health, Safety, and Security Plan as well as Emergency Preparedness and Response Plan for construction and operation activities phases of Phase 3.
16.3	Ecosystem Services	Precautions to improve geological stability, storm water and wastewater management were given in the EIA and ESIA reports. Within the ESIA studies of the Phase 1, groundwater sustainability and impact assessment study were undertaken by modelling studies. Also, measures to avoid or reduce water usage to prevent adverse impacts on other users have been studied. Phase 3 does not require additional groundwater use onshore. Impacts on ecosystem services were evaluated within the Phase 1 and 2 ESIAs. LRPs for each phase were prepared. As Phase 3 will not expand beyond the SGFD fence, no ecosystem services impacts are anticipated.	Turkish Regulations PS 4.8 - the client will identify and mitigate risks and impacts on priority ecosystem services that may result in adverse health and safety risks and impacts to Affected Communities.	No Gap	
16.4	Marine Ecosystem services: Marine traffic	Socioeconomic analysis considering marine traffic in relation with the usage of the ecosystem services was evaluated in Phase 1 and 2 ESIAs. An evaluation considering the FPU in Phase 2 has been made.	The World Bank Group's EHS Guidelines for Ports, Harbours and Terminals	Phase 3 is not anticipated to increase the maritime traffic beyond what was evaluated in Phase 1 and 2. There are already plans and procedures for management of marine traffic.	Evaluate impacts of NAVTEX announcement(s) and communicate with stakeholders, specifically with fishers, as outlined in the SEP and LRP, as needed.

16	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		Accidents, accidental releases, etc. were evaluated in Phase 1 and 2 ESIA and management plans and procedures have been prepared, and are being implemented. For Phase 3, NAVTEX restrictions will remain in the areas that are already limited for Phase 1 and 2. The latest published NAVTEX is valid till 7th of October 2026. SGFD has a SEP and two LRPs, describing communication with stakeholders in topics including marine traffic as well. There is also plans and procedures, regulated by the Port Authority related to marine traffic.		No Gap	
16.5	Community Exposure to Disease	Potable water standards and wastewater discharge standards were identified among the Project Standards. TP-OTC controls and monitors its emissions and discharges. Emergency Response Plan addresses this topic.	PS4.9 - The client will avoid or minimize the potential for community exposure to water-borne, water-based, water-related, and vector-borne diseases, and communicable diseases that could result from project activities, taking into consideration differentiated exposure to and higher sensitivity of vulnerable groups. The client will avoid or minimize transmission of communicable diseases that may be associated with the influx of temporary or permanent project labour.	No Gap	
16.6	Security Personnel	Armed security is present at the site. The SGFD Project area has been designated as a military restricted zone and security zone by a Presidential decree in 2022. Unauthorized entry into the area has been prohibited. It was stated that permission is required for entry according to Article 21, Paragraph c of the Military Restricted Zones and Security Zones Law No. 2565, which regulates the principles to be applied in security zones. The General Directorate of Turkish Petroleum Corporation (TPAO) Private Office (Özel Kalem Md.) has requested that actions be taken in accordance with the entry rules and the entry request form, and that personnel be informed. In a statement from the Governorship, it was announced: "With Presidential Decree No. 6061, the TPAO Sakarya Gas Field Development Project area has been designated as a Military Restricted Zone and Security Zone. In this context, according to Article 21, Paragraph c of the Military Restricted Zones and Security Zones Law No. 2565, it is stated that only those authorized by the relevant authorities can enter and reside in security zones established	IFC PS4 When the client retains direct or contracted workers to provide security to safeguard its personnel and property, it will assess risks posed by its security arrangements to those within and outside the project sit. The client will make reasonable inquiries to ensure that those providing security are not implicated in past abuses; will train them adequately in the use of force (and where applicable, firearms), and appropriate conduct toward workers and Affected Communities; and require them to act within the applicable law. The client will not sanction any use of force except when used for preventive and defensive purposes in proportion to the nature and extent of the threat. The client will provide a grievance mechanism for Affected Communities to express concerns about the security arrangements and acts of security personnel.	Relevant plans and procedures will be updated to incorporate Phase 3. No Gap	Review and revise the Plans to align with the Phase 3 and the legislative requirements and ensure that the plan includes security requirements, arrangements, physical security measures, potential conflict risks related to security personnel and community interaction, Security Policy, hiring process, trainings, gender consideration, external grievance mechanism. The plan should cover Contractors' security arrangements as well.

16	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
		in areas where expropriation has been carried out and in marine areas designated as security zones. Security measures are addressed within the Community Health, Safety, and Security Management Plan. This plan also considers the risk of potential conflicts. There are also plans and procedures for management of Project security..			

Table 5-17: Land Acquisition and Involuntary Settlement

17	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
17.1	Avoid or minimize displacement	The TP-OTC SGFD Phase 1 Project area is owned by the treasury and assigned to Turkish Ministry of Industry and Technology. Upon assent of Turkish Ministry of Industry and Technology, the right of easement of this land has been granted by Turkish Ministry of Environment, Urbanization and Climate Change to TPAO for 49 years. The area, consisting of the landfall area and the route where pipelines are installed, has been assigned by the Turkish Ministry of Transportation and Infrastructure to TPAO. No displacement is reported within the scope of Phase 1 or Phase 2. Phase 2 and 3 have very limited footprint onshore, within the SGFD fence. No displacement will happen within the scope of Phase 3.	PS 5 – 9 &112 &14	No Gap	No relevant action
17.2	Consultation	Public participation for the EIA was conducted on 08.08.2024. TP-OTC has a Stakeholder Engagement Plan (SEP) and a Grievance Mechanism (GM) and regularly engages with its stakeholders, including fishers. Engagement and consultation were carried out for the Livelihood Restoration Plans (LRPs) prepared for Phases 1 and 2, and these activities continue as detailed in the SEP. No land acquisition or involuntary resettlement will occur under Phase 3.	PS 5 – 10 EP4 – Principle 5	No Gap	Update SEP to include Phase 3. Continue engagement with stakeholders. Disclose Phase 3 plans to stakeholders.
17.3	Compensation for displaced persons	No displacement will occur under Phase 3.	PS 5 – 26, 27,28, 29	Phase 3 is not expected to induce any physical displacement. No Gap	No relevant action.
17.4	Grievance mechanism	TP-OTC has Grievance Mechanism system under the ESMS. Grievances are being recorded and assessed according to defined grievance mechanism system. Grievance mechanism has been disclosed to stakeholders through SEP and LRP disclosure meetings for Phase 1 and 2.	PS 5 – 11 EP4 – Principle 6 For all Category A and, as appropriate, Category B Projects, the EPFI will require the client, as part of the ESMS, to establish effective grievance mechanisms which are designed for use by Affected Communities and Workers, as appropriate, to receive and facilitate resolution of concerns and grievances about the	No Gap	No relevant action

17	Sub-component	Information Available	Applicable Standard (Parag. #)	Gap Analysis	Actions Required
			Project's environmental and social performance. …The client will inform Affected Communities and Workers about the grievance mechanisms in the course of the Stakeholder Engagement process.		
17.5	RAP/LRP implementation	LRPs were prepared for Phase 1 and 2, and have been implemented. No further restrictions or displacement are anticipated under Phase 3. Project continues to monitor its impacts on fish species, through offshore biodiversity and physical surveys.	PS 5 – 26, 27,28, 29	No Gap	If NAVTEX restrictions go beyond the existing areas, evaluate impacts of NAVTEX announcement(s) and communicate with stakeholders, specifically with fishers, as outlined in the SEP and LRP, as needed.
17.6	Monitoring	LRP for Phase 1 and 2 are implemented and monitored as defined in the plan by TP-OTC. SGFD Project impact on fishers are being monitored by monitoring fish species and their abundance.	PS 5 – 26, 27,28, 29	No Gap	No relevant action

6.0 OFFSHORE PHYSICAL AND BIOLOGICAL ASSESSMENT

6.1 Offshore - Physical and Biological Baselines

This document aims to provide an initial framework for environmental assessment and planning for Phase 3. The information reported in this section represent the baseline study, prepared based on evidence collected during the investigations carried out before the commencement of project activities for Phase 3, including those collected in the previous project phases. The baseline are updated to the latest campaigns available, integrating the information gathered so far and revising, where necessary, the assessment of sensitivity.

6.1.1 Physical environment

This section describes the offshore physical environment, including the components considered to be potentially affected by the project actions.

Such components are the following:

- Seafloor morphology;
- Sediments (grain size and chemical characterization);
- Seawater;
- Physical oceanography (currents and waves);
- Underwater noise

6.1.1.1 Seafloor morphology

Table 6-1: General overview of the seafloor component

Definition	Seafloor morphology is defined as the shape of the seabed. Most of the ocean is very deep, where the seabed is known as the abyssal plain. From the abyssal plain, the seabed rises toward the continents and becomes, in order from deep to shallow, continental rise, slope, and shelf. Like land terrain, the ocean floor presents mountains, including volcanoes, ridges, valleys, and plains. Most of the oceans have a common structure, created by common physical phenomena: tectonic movements and sediment transportation. Sediment on the seafloor originates from a variety of sources, including biota from the overlying ocean water, eroded material from land transported to the ocean by rivers or wind, ash from volcanoes, and chemical precipitates derived directly from seawater. Sea currents transport sediments which interact with the seafloor. These interactions create various geological structures that occur both near the coast and at greater depths.

Study Area	**RSA**: The Black Sea with focus on the Turkish continental shelf, slope and abyssal plain. **Rationale**: The Turkish continental shelf of the Back Sea shows several prominent structures such as slumping, pockmarks, mud volcanoes, sliding and faults (ÇİFÇİ et al., 2002). **AoI**: The project footprint plus a buffer of 500 m per side. **Rationale**: Seafloor morphology is a seascape component. Impacts (if any) may only occur in the near proximity of the project footprint because of the limited influence on local hydrodynamics. A buffer of 500 m is considered highly precautional for the pipeline laying and even for the activities of dredging and deposition of the sediments at the temporary storage area.		
Data Analysis	**Analysis:** Primary data collection through Side Scan Sonar (SSS), Sub Bottom Profiler (SBP) and Multibeam Echosounder (MBES) combined with secondary data obtained from literature review. **Rationale:** Determining seafloor morphology and monitoring its changes over time is essential to understanding the geological processes that characterize the area. These surveys play a crucial role in identifying potential natural hazards, enabling more accurate project planning and reducing the likelihood of harmful events. Moreover, they support the protection of marine ecosystems, the sustainable management of resources, and the safety of offshore infrastructures. Continuous monitoring is also vital to detect potential modifications induced by the presence of infrastructures, ensuring their long-term stability and minimizing environmental impacts.		
Data sources	**Primary sources:** Geophysical data gathered through Side Scan Sonar (SSS), Sub Bottom Profiler (SBP) and Multibeam Echosounder (MBES) and data reported in the following reports: ■ **“**Hydrographical and Oceanographic Survey Report” by DenAr (Deniz Araştırmaları A.Ş, 2024). ■ Environmental and social impact assessment offshore physical and biological monitoring report phase-3 baseline company doc. no. SC26-3-PER-PRJ-SU-REP-600031_R01. ■ Direct communication with TP-OTC engineering team (Most recent reference reports can be found in APPENDIX A and B). **Secondary sources**: Secondary data from scientific papers, grey literature, and databases.		
Sensitivity	**Sensitivity features**	**Supported by**	**Sensitivity value**

	Absence of rocky outcrops and gently sloping bathymetry upon the continental slope Presence of sedimentary waves in the canyon area Presence of Mud Volcano 3 at about 6 km from the AoI Medium Seismicity Several gas leaks in the AoI	Primary data (DenAr, 2025) and secondary data	**Medium-high**

Gap analysis results	Black Sea morphology has three units distinctly separated from each other: shelf, continental slope and abyssal plane. The shelf border is defined by an isobath of 100 m. While the shelf of this basin covers an area as narrow as 20 km on Turkish coasts. According to the Hydrographical and Oceanographic Survey Report by DenAr Deniz Araştırmaları A.Ş the bathymetric characteristics of Project Area showed that Turkey's continental margin has a narrow shelf (up to 10 km width) located at a water depth of 100 m, a steep continental slope (inclination up to 25 degrees) scoured by the canyon systems, a continental elevation with mild and soft incline, and a smooth abyssal plane with maximum water depth of 2200 m. A Slope Index Map of the project area were produced in scale 1:30,000. Most recent Phase III surveys showed that seabed morphology within the Göktepe Area is generally smooth and gently undulating, exhibiting subtle variations consistent with the deep-basin morphology of the Western Black Sea. The bathymetry chart illustrates deeper depressions toward the central portion and gradually shallower slopes along the basin flanks. No major shoals, ridges, or isolated topographic highs were observed, indicating a uniform seafloor morphology typical of the deep-basin environment.In relation to the Multibeam Bathymetric. Survey conducted along Route-6 show that the area is characterized by an escarpment zone, where the seafloor exhibits a sharp gradient transition from the upper slope down to the lower basin flank. Depths range from approximately -17 m to -336 m with steeply descending morphology along the central portion and smoother topography toward the base of the slope. As for the areas located in the escarpment zone and the adjacent shallow-water regions, the overall depths range from 3.5 to 1381 meters. The escarpment itself is distinguished by steep slopes, intricate seabed morphology, and the presence of submarine canyons. No evidence of UXO or wrecks was reported along Route-6 based on the latest available survey data; however, SSS and SBP surveys conducted in 2021 identified a shipwreck within the project area, near Amasra gas field. Relating previous phases' areas, Phase 1 corridor anomalies were detected in correspondence with the intersections with Phase 1 and Phase 2 routes due to the presence of concrete mats. In any case, apart from pipeline crossings, the area features showed consistency with previous observations with an average difference of -0,03 meters depth change and indication of erosion in the shallowest part of the area. Regarding the Phase 2 pipeline route, the comparison between the latest bathymetric dataset with Nearshore UXO survey (February 2024) showed that the pipeline is represented by a linear

	positive relief feature with adjacent signs of trench excavation and backfill morphology, proving clear evidence of installation activities and localized seabed modifications. **Temporary Disposal Area** The bathymetric changes examined in the last monitoring report (June 2025) showed that, in comparison with 2022 dataset, the nearshore temporary disposal area had some zones of positive elevation change, consistent with localized sediment accumulation, and smaller patches of negative change due to erosion events or material redistribution. However, these patterns are consistent with the expected dynamics of a managed disposal area, influenced by the presence of the Filyos River. The studies indicate that the temporary disposal area reveals gently sloping seabed morphology with depths ranging from approximately 6 to 12 m. The overall seabed gradient is low and uniform, reflecting the natural physiographic characteristics of the coastal shelf in this region. Except for the pipeline crossing points, which are not foreseen for Phase 3, the seabed dynamics are consistent to those described for Phase 1and Phase 2, as well as any future localized morphological modification induced by the presence of the pipeline and by the interventions planned along the AoI.

6.1.1.2 Sediments

Table 6-2: General overview of the sediment component

Definition	Marine sediments are a mixture of material deposited on the seafloor that originated from the erosion of continents, volcanism, biological productivity, hydrothermal vents, and/or cosmic debris. The contributions of these sediment sources to the seafloor are controlled by wind, ocean circulation, and water depth that collectively determine the transport, deposition, and preservation of each sediment type. The alteration of these sediment types is also an important process affecting the final composition of marine sediment. Both natural and human-made perturbations have the capability to alter the chemical-physical characteristics of the sediment (Boggs Jr. & Boggs, 2009). In addition, where/if contaminants are present, they tend to accumulate within the sediment (Lijklema et al., 1993). Thus, both sediment composition and contaminants can be used as indicators of the ecosystem health (Handley et al., 2014).

Study Area	**RSA**: Western Black Sea basin. **Rationale**: The Andrusov Ridge and Archangelsky Ridge extending south from the Crimean Peninsula divide the Black Sea into two depositional basins: the Western Black Sea and the Eastern Black Sea (Shillington et al., 2008). **AoI**: The project footprint plus a buffer of 500 m per side. **Rationale**: The activity of pipeline laying onto the seafloor may resuspend a limited amount of sediment with scarce possibility to be transported through long distances. A buffer of 500 m is considered as highly precautional even for the activities of dredging and deposition of the sediments at the temporary storage area.		
Data Analysis	**Analysis:** Grain size distribution analysis and chemical characterization. **Rationale:** Grain size distribution analysis is a fundamental component of sediment characterization in environmental monitoring and assessment as it provides essential information on the physical structure of the seabed and supports the interpretation of associated chemical and biological data. The relative proportions of sand, silt, and clay significantly influence sediment behavior and environmental response. In particular, variations in particle size distribution directly affect the overall sensitivity of marine sediments, making this analysis a key element in sensitivity classification. Specifically, it helps assess the potential for contaminant accumulation, understanding sediment transport, deposition processes, and identifying temporal and spatial variations in seabed composition. Chemical characterization is a key component in assessing sediment sensitivity, as the presence and concentration of specific compounds, particularly pollutants and contaminants, can significantly influence environmental responses. This analysis provides essential insights into the chemical properties of sediments, supporting the interpretation of ecological data and helping to identify potential sources of contamination. Moreover, it enables the mapping of spatial distribution patterns of chemical substances across the study area, contributing to a more comprehensive understanding of sediment quality and its implications for marine ecosystems.		
Data sources	**Primary sources**: Sediment samples collected (from 2023 to 2025) from Phase 1, Phase 2 monitorings and Phase 3 AoI at different depths and analyzed for chemical-physical properties (DenAr Explorer). (Most recent reference reports can be found in APPENDIX A and B). **Secondary sources**: Secondary data from scientific papers, grey literature, and databases.		
Sensitivity	**Sensitivity features**	**Supported by**	**Sensitivity value**

	Presence of fine sediment in the excavation area (trench) Temporary exceedances of regulatory limits and short-lived concentration increases observed in certain elements, with overall levels remaining within acceptable thresholds.	Primary data	**Medium-Low**

Gap analysis results	Between 2023 and 2025, multiple sediment monitoring campaigns (Phase 1, Phase 2 and Phase 3) were conducted to assess the environmental conditions along the project routes. From previous analyses, a general progressive increase in the fine fraction of sediments (silt and clay) was observed between 2024 and 2025, reaching an average of 63.6%. This trend, coupled with a decline in sand content, suggests a shift toward a low-energy depositional environment that favors contaminant accumulation. Specifically, grain-size data from the 2025 baseline campaigns indicate a clear transition from locally sand-influenced conditions during the early survey in June toward increasingly uniform fine-grained seabed by October, especially in Phase 3 AoI. These seasonal changes are likely driven by variations in hydrodynamics and sediment supply, including fluvial input from the Filyos River, contributing to the observed spatial heterogeneity, particularly along the escarpment. Sediment chemistry results indicate generally low to moderate concentrations of trace metals and organic contaminants, with parameters below regulatory thresholds. Only cadmium and mercury exceeded regulatory limits in some earlier monitoring sessions, with concentrations returning to compliant levels in September and October 2025. Specifically, cadmium peaked in October 2024 (6.08 mg/kg) before declining sharply by June 2025, while mercury exceeded the threshold in June 2025 (5.88 mg/kg) but fell below detection by October 2025. This pattern suggests episodic inputs rather than persistent contamination probably associated with fluvial inputs from the Filyos River and resuspension processes, while subsequent surveys confirmed background conditions. Up to June 2025, slight increases in chromium, copper, and nickel were also observed, although concentrations remained below regulatory thresholds, with variability likely linked to sediment supply and seasonal hydrodynamics. Following this period, subsequent surveys indicated a general decline in these elements, suggesting that the earlier elevations were short-lived and possibly associated with seasonal dynamics rather than persistent trends. Specifically, during Phase 3 sampling session in October 2025, no exceedances occurred; however, cadmium showed a general decrease across the area, with a localized increase only in the corridor zone, likely linked to higher fine sediment fractions. Overall, spatial variability and seasonal trends appear driven by hydrodynamics, sediment supply, and local morphology, with no evidence of widespread anthropogenic contamination. Although concentrations remained within regulatory thresholds, the observed variability in certain elements, combined with the concurrent rise in the fine fraction of sediments, suggests a gradual shift in the system's sensitivity, from low to medium-low. Natural processes such as riverine input, sediment resuspension, and seasonal hydrodynamics remain the most plausible drivers of these fluctuations. Considering that earlier datasets extended only to June, the temporary elevations recorded may reflect short-lived seasonal peaks rather than sustained contamination. Nevertheless, these findings highlight the importance of maintaining and potentially intensifying monitoring efforts to detect early signs of environmental change and ensure long-term ecosystem stability.

6.1.1.3 Seawater

Table 6-3: General overview of the seawater component

Definition	Seawater is the largest aqueous ionic solution on the earth: 3.3% of its chemical composition consists of dissolved salts, and seven ions (Na, Mg, Ca, K, Cl, S, and Br) account for 93.5% of the total species. Over the globe, sea surface salinity varies from 32 to 37 PSS; on average, seawater surface salinity is about 35 PSS. The temperature of ocean water varies with depth and latitude. At high latitudes, ocean waters receive less sunlight, in fact, the poles receive only 40% of the heat that the equator does. These variations in solar energy mean that the ocean surface can vary in temperature from a warm 30°C in the tropics to a very cold -2°C near the poles. The average ocean surface temperature is 17 C while the deep ocean (below about 200 meters depth) is cold, with an average temperature of only 4°C. Cold water is also denser, and as a result heavier than warm water. Seawater has an extremely high dilution power against pollutants, providing itself a so-called “auto-depuration”. It is estimated that ~2.2 million species live in seawater and that 91% of earth species in the ocean still await a description (Mora et al., 2011).
Study Area	**RSA**: The Black Sea **Rationale**: All the basin is characterized by a permanent halocline and anoxic zone with a limited input of saltwater from the Mediterranean Sea at about 100-150 m of depth (Tuğrul et al., 2014). **AoI**: The project footprint plus a buffer of 500 m per side. **Rationale**: Water has a great diluting effect, depending on the flow rate and the dimensions of the basin (Farhadian et al., 2015). A buffer of 500 m is considered as highly precautional for the pipeline laying and even for the activities of dredging and deposition of the sediments at the temporary storage area.
Data Analysis	**Analysis:** Physical and chemical analysis. **Rationale:** Physical parameters, such as temperature, salinity, turbidity, and electrical conductivity, play a critical role in regulating biological processes, mediating chemical interactions, and influencing sediment transport dynamics. Their measurement supports the characterization of water column stratification, mixing regimes, and hydrodynamic behavior, all of which are essential in understanding pollutant dispersion and ecological responses. Chemical analysis, encompassing the quantification of nutrients, trace metals, and organic contaminants, is essential for determining the extent and impacts of anthropogenic influence on marine environments. These parameters serve as key indicators for evaluating both natural background conditions and potential anthropogenic influences. Specifically, the assessment contributes to the identification of potential sources of contamination, supports the evaluation of environmental quality against established regulatory benchmarks, and provides a scientific basis for assessing risks to ecosystem integrity and public health. It provides insight into nutrient dynamics, organic and inorganic contamination levels, and overall water column health, forming a critical component of the marine environmental monitoring framework.

Data sources	**Primary sources**: Seawater samples collected (from 2023 to 2025) from Phase 1, Phase 2 and Phase 3 AoI monitoring at different depths and analyzed for chemical-physical properties (DenAr Explorer). (Most recent reference reports can be found in APPENDIX A and B). **Secondary sources**: Secondary data from scientific papers, grey literature, and databases.		
Sensitivity	**Sensitivity features**	**Supported by**	**Sensitivity value**
	CTD measurements in line with the regional context AoI is located mainly in open sea area with good water circulation Contaminants levels are above the Limit Value set by the Turkish regulations and NOAA	Primary data	**High**

Gap analysis results	The assessment of water quality for the AoI during Phase 3 is based on the results from the October 2025 baseline survey, complemented by data from previous monitoring phases to ensure continuity and provide a comprehensive understanding of trends. The comprehensive assessment indicates good water quality throughout the study area, with stable water column parameters across all phases. Physicochemical indicators, including dissolved oxygen and pH, reflect a generally healthy aquatic ecosystem. pH and color values consistently met regulatory standards, showing expected seasonal variation. Turbidity and suspended solids were generally low, with only localized and short-lived increases observed at a few stations, likely linked to transient natural processes such as resuspension, current-induced mixing, or fluvial influence rather than sustained degradation of water quality. The absence of floating matter across all campaigns further supports the good physical quality of surface waters. CTD profiles confirmed structural consistency, with stable thermocline, halocline, and oxygen profiles across all phases, and dissolved oxygen levels generally above 90% saturation, indicating good oxygenation. In particular, the October 2025 measurements reflect the expected late-autumn transition with surface cooling and slightly enhanced vertical mixing while the general stratified structure of the water column remains preserved. In terms of chemical contaminants, results were more variable. Total phenols were generally compliant, with only a marginal exceedance at one station in June 2025, located within a submarine channel, likely linked to episodic input or sediment resuspension. Exceedances for certain parameters were observed in June and September at very few stations along the escarpment zone, while Phase 3 October values were generally lower, with only one exceedance recorded in the nearshore corridor. These patterns suggest localized and temporary anomalies rather than persistent contamination. Trace metals presented mixed results, reflecting a combination of sporadic exceedances, improving trends, and consistent compliance. Trace metals in surface waters were generally below detection limits or present at very low concentrations throughout the study period, with most values well below relevant regulatory thresholds. Mercury exceeded both chronic and acute NOAA thresholds in 2024 and peaked at one station in June 2025, approaching Turkish limits; however, concentrations in September and October 2025 were below the detection limit of 1 µg/L at all stations, indicating an episodic input rather than persistent contamination. Lead, previously undetected, surpassed chronic NOAA thresholds at eight stations in June 2025 but was also below detection in subsequent surveys (September-October 2025). Nickel showed exceedances in 2024 but declined by June 2025, while copper, which exceeded Turkish and NOAA thresholds in 2024, showed only chronic exceedances in June 2025 in the corridor and a single occurrence in October 2025 in the escarpment area. Chromium exceeded limits in 2024 but remained compliant thereafter. Ammonia concentrations, although reduced compared to the previous year, displayed localized exceedances in June 2025 and September 2025 (mostly in the escarpment area), decreasing to four stations in October 2025. Cadmium, zinc, and arsenic consistently complied with both NOAA guidelines and Turkish regulatory thresholds. Overall, these patterns suggest short-term fluctuations likely driven by natural variability, hydrodynamics, and fluvial inputs rather than chronic contamination.

	Organic pollution indicators, including BOD, crude oil derivatives, and total phenols, were mostly below detection limits or at very low concentrations during 2025, with occasional localized detections that were not persistent and showed no upward trend, likely linked to natural inputs or maritime activity. In conclusion, water quality across the study area remains broadly consistent with previous assessments, with most parameters below detection limits or well within regulatory thresholds. The temporary exceedances observed in earlier phases for mercury and lead were not confirmed in subsequent surveys, and concentrations during Phase III (October 2025) were below detection limits at all stations. These patterns suggest short-lived, episodic fluctuations, likely driven by seasonal dynamics and natural processes, such as fluvial inputs, hydrodynamic variability, and occasional contributions from major rivers like the Sakarya, rather than persistent contamination or significant anthropogenic sources. Continued monitoring remains essential, particularly during summer months and in morphologically sensitive areas such as submarine channels and nearshore corridors, to detect potential seasonal peaks and ensure long-term ecosystem stability.

6.1.1.4 Physical oceanography

Table 6-4: General overview of the physical oceanography component

Definition	Physical oceanography refers to the dynamics of seawater masses at both surface and deeper layers that influence the productivity and diversity of marine ecosystems at different scales (Lévy, Franks, & Smith, 2018). Such movements are the main responsible for particle transport and pollutant dilution and dispersion throughout the oceans. Currents are underwater streams made of vertical and horizontal movements in the circulation system of the ocean waters produced by gravity, wind and water density variations (Gordon & Cenedese, 2021). Water waves are a swell or ridge in the surface of a body of water normally having an oscillatory motion and a distinct forward motion of the particles that consecutively compose it. Gravity and surface tension are the two physical mechanisms that control and maintain wave motion (Cenedese & Tricker, 2018).
Study Area	**RSA**: The Black Sea **Rationale**: A basin-wide gyre called Rim Current is present in the Black Sea and numerous eddies are present along the coastline. Eddies and the Rim Current keep interacting by merging and detaching creating a big current system in the Black Sea (Oguz et al., 1993). **AoI**: The project footprint plus a buffer of 500 m per side. **Rationale**: Water has a great diluting effect, depending on the flow rate and the dimensions of the basin (Farhadian et al., 2015). A buffer of 500 m is considered as highly precautional for the pipeline laying and even for the activities of dredging and deposition of the sediments at the temporary storage area.

<table>
<tr><td>Data Analysis</td><td colspan="3">Analysis: Meteorological and oceanographic measurements.

Rationale: Meteorological and oceanographic measurements, including wind speed and direction, air pressure, air temperature, relative humidity, water level, and wave height, are essential for understanding the physical forces shaping the marine environment. These parameters influence key processes such as sediment transport, resuspension, and deposition, which in turn affect the distribution of contaminants. Wind-driven circulation also plays a critical role in upwelling phenomena, which bring nutrient-rich deep waters to the surface, enhancing biological productivity and influencing local biogeochemical conditions. The integration of these measurements provides essential context for interpreting sediment and ecological data, contributing to a more accurate assessment of environmental sensitivity and system dynamics.</td></tr>
<tr><td>Data sources</td><td colspan="3">Primary sources:

Samples collected from Phase 1, Phase 2 and Phase 3 AoI across the years 2023-2025, by DenAr Explorer.

(Most recent reference report can be found in APPENDIX A and B).

Secondary sources: Secondary data from scientific papers, grey literature, and databases</td></tr>
<tr><td rowspan="2">Sensitivity</td><td>Sensitivity features</td><td>Supported by</td><td>Sensitivity value</td></tr>
<tr><td>Absence of local upwelling phenomena

Low probability of extreme wave events</td><td>Primary and secondary data</td><td>Medium-low</td></tr>
</table>

Gap analysis results	Overall, the physical environment of the Project Area remains consistent with the expected behavior of the Black Sea. Observed variations align with typical seasonal dynamics, including increased current activity in spring, variable but predictable wave regimes, and atmospheric conditions consistent with regional climatology**.** The area experiences a temperate maritime climate, with cold winters and warm-humid summers moderated by strong maritime influence. Seasonal wind patterns (north in summer, south in winter) and storm events drive fluctuations in wave energy and coastal dynamics. Wind speeds peak in January and calm in June, while temperature ranges remain within historical norms, despite a gradual warming trend and more frequent extreme heat days in July-August. Hydrodynamic observations confirm a low-energy deep-water environment dominated by basin-scale circulation rather than local wind forcing. Currents are generally weak, with most velocities below 10 cm/s and only occasional short-lived events exceeding 15 cm/s during summer. Flow patterns exhibit a persistent bi-modal orientation along the basin axis, alternating between east-southeast and west-northwest directions, with strongest coherence in summer and broader dispersion in transitional seasons. Vertical profiles indicate coherent flow across depth layers with gradual velocity reduction toward the seabed and weak shear, supporting interlayer mixing and occasional internal wave activity during seasonal transitions. Wave conditions during late summer and early autumn were generally calm to moderate, with a slight increase in energy toward September as seasonal transition began. Prevailing directions remained consistent with regional wind patterns, and surface currents were weak and stable. Compared to winter and spring, this period reflects a typical seasonal shift without anomalies. As a result, there is currently no indication of persistent or structural changes in the physical system under observation, nor have any deviations from previous baseline values or notable shifts been observed when compared to previous monitoring efforts conducted in the same area.

6.1.1.5 Underwater noise

Table 6-5: General overview of the underwater noise component

Definition	In acoustics, the term “sound” is usually referred to as the acoustic energy radiated from a vibrating object, with no reference for its function or potential effect, whereas “noise” is usually referred to as the acoustic emission causing specifically described adverse effects (Southall et al., 2009) or technical distinctions (i.e., ambient noise). Sounds are omnipresent in the underwater environment and can be produced by both natural and anthropogenic sources (OSPAR, 2015).

Study Area	**RSA**: Turkish EEZ of the Black Sea. **Rationale**: Most maritime routes intersect with the Turkish Exclusive Economic Zone (EEZ), particularly within Turkish territorial waters, as the Bosphorus Strait is the sole passage to and from the Mediterranean Sea. **AoI**: The project footprint with a buffer of 10 km on both sides. **Rationale**: Sound speed in the seawater is approximately 1500 m/s (Pierce, 1989), proportionally increasing with pressure, temperature and salinity and density (Mackenzie, 1981). Any alteration of the ambient acoustics can be detected up to several km far, depending on the sound level emitted by the source (Urick, 1979). A buffer of 10 km is considered as highly precautional for any kind of manmade underwater sound emission.		
Data Analysis	**Analysis:** Acoustic recordings **Rationale:** Acoustic recordings provide essential data on the underwater soundscape, which includes biological, physical, and anthropogenic sources. Specifically, analyzing parameters of dolphin whistles and clicks, such as frequency range and peak frequency, offer valuable insights into vocal activity, species identification, and behavioral states. These measurements help interpret ecological patterns and contribute to the classification of acoustic sensitivity. Understanding the spatial and temporal distribution of underwater sounds, both biological and anthropogenic, is crucial for assessing potential impacts on marine fauna and for mapping acoustic habitats.		
Data sources	**Primary sources**: Samples collected from Phase 1 and Phase 2 AoI across the years 2023-2025, as well as within the framework of Phase 3, by DenAr Explorer. (Most recent reference report can be found in APPENDIX A and B). **Secondary sources**: Secondary data from scientific papers, grey literature, and databases.		
Sensitivity	**Sensitivity features**	**Supported by**	**Sensitivity value**
	Presence of cetaceans High number of maritime routes (primarily in the outermost part of the project area)	Primary and secondary data	**Medium-High**

Gap analysis results	The acoustic monitoring results obtained from the survey conducted between September and October 2025 in the Göktepe and Sakarya areas are consistent with previously reported baseline conditions. Underwater noise levels within the AoI appear to be primarily influenced by low-frequency anthropogenic sources, mainly maritime traffic, and high-frequency biological vocalizations from resident cetacean species. The presence of cetaceans has been acoustically confirmed, and maritime traffic levels remain stable, with spatial distribution patterns matching those previously described. No anomalies have been recorded in relation to expected baseline values, nor have any deteriorations been observed when compared to previous monitoring campaigns conducted in the same area. Therefore, the acoustic sensitivity of the area remains unchanged.

6.1.2 Biological Environment

This section describes the offshore biological environment, including the components considered to be potentially affected by the project actions. Such components are the following:

- Plankton (phyto- and zooplankton);
- Benthic communities (phyto- and zoobenthos);
- Fish;
- Marine mammals;
- Marine habitats;
- Legally Protected Areas and Internationally Recognized Areas; and
- Critical Habitats assessment.

However, it is to note that, according to literature review, there are no sea turtles inhabiting the Black Sea (when spotted, they are only considered as occasional visitors) (IUCN, 2012; Zinenko et al., 2021). According to Zinenko et al. (2021), from 1922 to 2021 only 11 specimens of *Caretta caretta* have been sighted in the Black Sea. Regarding Green Turtles (Chelonia mydas), while nesting sites can be found in the Mediterranean side of Türkiye (in addition to Syria and Cyprus), the species has only once been found in the Black Sea: Nanakinov (1998) found only one Green Turtle record from Bulgaria, no records are available from Romania (Nanakinov, 1998), and according to Valkanov et al. (1978) there are no reports of sea turtles from the former Soviet coasts (Öztürk et al., 2013). For such reason, sea turtles are not described in this baseline. Also, considering their ecological habits, linked both to the terrestrial and marine environments, seabirds are described in the onshore biological baseline only.

6.1.2.1 Plankton

Table 6-6: General overview of the plankton component

Definition	Plankton are all those organisms that cannot contrast water circulation and are horizontally moved by currents. The group is usually divided into: (i) phytoplankton, which groups the autotrophic cells, (ii) zooplankton, which groups the heterotrophic cells and organisms, and (iii) ichthyoplankton, which is a particular subgroup of the zooplankton, composed by only fish eggs and larvae. Although these organisms are subjected to even hourly vertical migrations in the water column, plankton is considered an important indicator of the water quality being the base of the marine food chain.
Study Area	**RSA:** The Black Sea **Rationale**: A basin-wide gyre called Rim Current cover all the Black Sea, which is also characterized by a strong freshwater input, causing also a permanent halocline and anoxic zone and limited input of saltwater from the Mediterranean Sea at about 100-150 m of depth (Tuğrul et al., 2014). **AoI:** The project footprint plus a buffer of 500 m per side along the new pipeline, and a 5 Km buffer around the FPU2. **Rationale:** Plankton is rather affected by natural environmental factors (i.e., rain) and, considering the dilution power of water, it is unlikely that limited pressures introduced may alter the plankton communities and mid and long distance. A buffer of 500 m is considered as highly precautional for the pipeline laying. The activity of the FPU2, in its operational phase, implies the discharge of cooling waters and production waters, which could affect pelagic ecosystems, for this reason a buffer of 5 Km was set to describe plankton communities of the AoI and their sensitivity.
Data Analysis	**Analysis:** Phytoplankton and zooplankton samples analysis. **Rationale:** Phytoplankton and zooplankton analysis is based on the evaluation of biological parameters that describe the composition and structure of plankton communities, such as species richness, taxonomic composition, and abundance patterns. These metrics allow for the detection of fluctuations and shifts in community dynamics, which may reflect changes in environmental conditions. For instance, the distribution of phytoplankton and zooplankton (including ichthyoplankton) is influenced by factors like light availability, oxygen concentration, and nutrient levels. A sudden or unusual bloom might indicate an increase in nutrient concentrations, potentially pointing to eutrophication, whether driven by natural processes or human activities.

<table>
<tr><td>Data sources</td><td colspan="3">Primary sources:

Samples collected from Phase 1, Phase 2 and Phase 3 AoI across the years 2023-2025 by DenAr Explorer.

(Most recent reference report can be found in APPENDIX A and B).

Secondary sources:

Secondary data from scientific papers, grey literature and databases.</td></tr>
<tr><td rowspan="2">Sensitivity</td><td>Sensitivity features</td><td>Supported by</td><td>Sensitivity value</td></tr>
<tr><td>Presence of highly productive waters</td><td>Primary data and secondary data</td><td>High</td></tr>
<tr><td>Gap analysis results</td><td colspan="3">Phase 3 results suggest a stable aquatic ecosystem, with no notable changes in species richness or community structure among both phytoplankton and zooplankton groups.

Phase 3 results confirmed a seasonally coherent phytoplankton community, with species richness in October slightly lower than in June and September, consistent with the natural decline of late-summer blooms at mid-latitudes. The community displayed a taxonomic structure dominated by Heterokontophyta, accompanied by stable contributions from dinoflagellates and a minor presence of Chlorophyta, a composition fully consistent with the patterns observed throughout the 2025 surveys. This repeated phylum-level distribution from June through October indicates an undisturbed and ecologically regular community structure. When compared with previous years, the October 2025 values align with expected seasonal dynamics, and the small differences recorded between phases in 2024 likely reflect station-specific variability rather than true ecological shifts. Overall, Phase 3 stations fall well within the natural variability expected for this period of the year.

Similarly, as for zooplankton, Phase 3 findings also indicated continuity in the communities, with copepods remaining the dominant group . Their presence together with the occurrence of other reflects a productive system, sustained by favorable and stable environmental conditions.

Environmental conditions, including pH, dissolved oxygen, temperature, salinity, and light, remained within expected ranges and supporting both primary productivity and zooplankton dynamics. These environmental parameters not only remained within expected seasonal ranges but also directly supported the persistence and abundance of key planktonic groups, reinforcing the conclusion that the ecosystem maintained its functional integrity and productive capacity throughout the monitoring periods.

Moreover, the assessments carried out during the Phase 2 monitoring in June 2025 indicated a general improvement in ecological conditions, characterized by reduced eutrophic features and increased mesotrophic stability across most taxonomic groups. Given that the surveys pertain to approximately the same geographical area, these considerations may also be deemed applicable to the environmental conditions characterizing the Phase 3 sector, subject to confirmation through subsequent monitoring activities.</td></tr>
</table>

6.1.2.2 Benthic communities (phyto - and zoobenthos)

Table 6-7: General overview of the benthic component

Definition	Benthos is a category that encompasses different taxonomical groups, vegetal or animal, both sessile and motile. All the species belonging to this category are characterized by living in close contact with the substrate or settled down on it, either soft or hard (Wetzel, 2001). The animal organisms belonging to this group show all the existing feeding habits, including filter feeders, detritus feeders, grazers, scavengers, and carnivores (Versar, 2006).
Study Area	**RSA:** Western Black Sea basin with focus on the Turkish continental shelf, slope and abyssal plain. **Rationale:** The Andrusov Ridge and Archangelsky Ridge extending south from the Crimean Peninsula divide the Black Sea into two depositional basins: the Western Black Sea and the Eastern Black Sea (Shillington et al., 2008). **AoI:** The project footprint plus a buffer of 500 m per side. **Rationale:** The activity of pipeline laying onto the seafloor may resuspend a limited amount of sediments with scarce possibility to be transported through long distances. A buffer of 500 m is considered as highly precautional even for the activities of dredging and deposition of the sediments at the temporary storage area.
Data Analysis	**Analysis:** Benthic macroinvertebrates sampling and consequent identification. **Rationale:** Monitoring of benthic communities involves identifying the species collected and estimating their spatial distribution, diversity and abundance within the area of interest. Monitoring these three factors plays a key role in assessing the ecosystem's condition and the overall biodiversity status of the area. Considering its importance in the complexity of food web, this assessment also guarantees indirect monitoring on population dynamics and ecosystem functioning. The spatial distribution, abundance and diversity of species in benthic communities depend on environmental factors such as sediment quality, oxygen and nutrient availability, as well as human pressures. These parameters influence the ecological structure of the benthos which needs to be monitored to ensure good environmental conditions and prematurely detect possible threats.
Data sources	**Primary sources:** Samples collected from Phase 1, Phase 2 and Phase 3 AoI across the years 2023-2025, by DenAr Explorer. (Most recent reference report can be found in APPENDIX A and B). **Secondary sources:** Secondary data were gathered from scientific papers, grey literature, and databases.

	Sensitivity features	Supported by	Sensitivity value
Sensitivity	Absence of protected, endemic or threatened species Presence species of economic value	Primary data and secondary data	**Medium-high**
	Potential presence of nursery area	Primary data	
Gap analysis results	Results from previous monitoring activities combined with what emerged from Phase 3 investigations suggest that the macrobenthic fauna aligns with patterns documented in the literature for the RSA and with previous surveys conducted in the same area, in terms of species richness, distribution, and overall abundance. Compared to earlier investigations in the AoI, the number of species observed in October 2025 remains consistent, indicating continuity in community composition. Also, when compared with the results of the October 2024 survey conducted for Phase 2 monitoring, no variations in species composition were observed, indicating a stable macroinvertebrate assemblage over the yearly interval and suggesting the absence of significant environmental changes affecting community structure during this period. The presence of both juvenile adult individuals detected in previous monitoring activities among the macroinvertebrate's community suggests the stability of the habitat and the potential presence of nursery areas in the shallower regions of this habitat. The monitoring programs also confirmed the presence of the invasive species *Rapana venosa,* already present in the area, which also represents a new resource for fisheries activities. None of the observed species (registered in previous and present survey) are included in the Turkish evaluation list or the IUCN Red List and considering the absence of significant specific sources documenting bivalve fisheries in AoI. However, considering the presence of different commercial species in the area commercial value of *Donax trunculus* and *Chamelea gallina*, the area can be considered ecologically significant, justifying a precautionary approach in its assessment.		

6.1.2.3 Fish

Table 6-8: General overview of the fish component

Definition	Fish are gill-bearing aquatic animals that can be found in almost all aquatic environments and have a great diversity. It's an informal group, universally recognized by some common features, resulted from convergent evolutionary processes (such as scales, fins, gills and shape) lampreys, hagfish, bony fish, and cartilaginous fish (Castro & Hubert, 2012).		
Study Area	**RSA**: The Black Sea **Rationale**: Fish are highly motile organisms, able to cover long distances and some species are migrant, but the Black represents a closed basin with similar characteristics. **AoI**: The project footprint with a buffer of 5 Km per side **Rationale**: This component includes both highly vagile species, able to move for long distances in a day, and demersal species, more linked to the sea bottom. A 5 Km buffer is considered appropriate and highly precautional also considering that demersal species become inexistent beyond the continental shelf (because of anoxic conditions).		
Data Analysis	**Analysis:** Fish sampling, biometric measurements, species identification, biodiversity assessment (including species richness, individual counts, and relative abundance), and interviews with local fishermen. **Rationale:** Identifying species and recording the number of individuals per species allows for a detailed assessment of biodiversity, helping to detect spatial and temporal patterns within fish communities. Evaluating abundance and species distribution as well as biometric measurements (such as length and weight) supports the interpretation of ecological dynamics and contributes to understanding the overall condition and resilience of fish populations. These measurements also enable the identification of dominant or sensitive species and provide insight into potential ecological changes. Integrating biological data with local knowledge from fishermen allows for a broader perspective on long-term trends and pressures, strengthening the reliability and relevance of the assessment.		
Data sources	**Primary sources:** Samples collected from Phase 1, Phase 2 and Phase 3 AoI across the years 2023-2025, by DenAr Explorer. (Most recent reference report can be found in APPENDIX A and B). **Secondary sources:** Secondary data from scientific papers, grey literature, and databases		
Sensitivity	**Sensitivity features**	**Supported by**	**Sensitivity value**

	Abundance of pelagic fish targeted by fisheries. Presence of species of economic interest. Presence of species cited as VU -EN -CR in IUCN red lists.	Primary data and secondary data.	**High**
Gap analysis results	Monitoring data collected between August 2023 and October 2025 indicate a relatively stable ecological structure over time. Despite the outcomes of the Phase 3 survey (October 2025), which indicated a marginal reduction in species richness if compared with the October 2024 campaign, overall richness patterns remain consistent across surveys, particularly under comparable seasonal conditions. While minor variations in species composition occur, dominant species in terms of abundance, such as *Mullus barbatus* and *Mullus surmuletus* tend to recur across years. Additionally, certain species, regardless of their abundance, are consistently found at the same sampling locations, suggesting predictable spatial patterns in community distribution. Critically Endangered (CR) and Endangered (EN) fish species identified in literature during the Critical Habitat Screening were not detected during any of the 2023-2025 surveys, nor reported by fishermen. However, several species recorded during monitorings over time are listed in the European and Global IUCN Red Lists with conservation statuses such as Vulnerable (VU) or Near Threatened (NT), including *Trachurus trachurus*, *Pomatomus saltatrix*, *Raja clavata*, *Umbrina cirrosa*, and *Scophthalmus maximus*. These findings are further reinforced by local ecological knowledge: species commonly reported by fishermen align to those consistently recorded during field surveys. Moreover, official records from the Filyos Fisheries Cooperative show an increase in catches and revenue during the first quarter of 2025. This trend is likely linked to reduced off-season fishing pressure and improved protection of spawning grounds, contributing to healthier fish populations. Although some fishermen reported reduced activity, the overall data suggest ecological recovery in previously impacted areas, indicating improving habitat conditions and a positive outlook for sustainable fisheries.		

6.1.2.4 Marine mammals

Table 6-9: General overview of the marine mammal component

Definition	Marine mammals are aquatic mammals that depend on the sea and other marine ecosystems for their existence (Castro & Hubert, 2012). They are considered an informal group, unified only by their reliance on marine environments for feeding (Jefferson et al., 1993). This group includes cetaceans, pinnipeds, sirenians, and marine fissipeds (such as polar bears and sea otters). In the Black Sea, however, only cetaceans and pinnipeds are found. All cetaceans are protected in the Black Sea by the international Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area (ACCOBAMS).
Study Area	**RSA:** The Black Sea **Rationale:** The Black Sea hosts three endemic subspecies of cetaceans in the basin, which migrate throughout it. **AoI:** The project footprint with a buffer of 10 km per side **Rationale:** Marine mammals are highly skilled swimmers, capable of covering long distances in a short amount of time (Berta et al., 2015), and that heavily rely on underwater acoustics. Given that, any acoustic alteration can be detected up to several kilometers away (Urick, 1979). Therefore, a buffer zone of 10 km is considered appropriate as a highly precautionary measure.
Data Analysis	**Analysis:** Primary data collection through visual and acoustic surveys. **Rationale:** Monitoring marine mammals is essential for estimating population densities and understanding spatial and temporal distribution patterns within the area of interest. When possible, surveys allow the assessment of groups size and encounter rates, providing valuable information on relative abundance and seasonal activity patterns. Also, photo-identification allows the tracking of individuals overtime, revealing movement corridors and the occurrence of individuals in the area. In addition, acoustic monitoring allows the assessment of species presence, behavioral responses and potential disturbance caused by anthropogenic activities. Combined, these approaches offer a comprehensive understanding of long-term dynamics, behavioral adaptations, and potential anthropogenic pressures enabling the development of targeted avoidance and mitigation strategies, and supporting compliance with international environmental standards, and contributing to the assessment of potential impacts on sensitive species.

<table>
<tr><td>Data sources</td><td colspan="3">Primary sources:

Samples collected from Phase 1, Phase 2 and Phase 3 AoI across the years 2023-2025, by DenAr Explorer.

(Most recent reference report can be found in APPENDIX A and B).

Secondary sources:

Secondary data were gathered from scientific papers, grey literature, and databases.</td></tr>
<tr><td rowspan="4">Sensitivity</td><td>Sensitivity features</td><td>Supported by</td><td>Sensitivity value</td></tr>
<tr><td>Presence of protected and/or threatened species</td><td>Primary data and secondary data</td><td rowspan="3">High</td></tr>
<tr><td>Presence of feeding grounds</td><td>Primary data and secondary data</td></tr>
<tr><td>Potential presence of breeding ground</td><td>Primary data</td></tr>
</table>

Gap analysis results	The results obtained from the campaigns conducted during Phase 1, Phase 2 and Phase 3 suggested that AoI is home to three dolphin subspecies endemic to the Black Sea*: Phocoena phocoena relicta*, *Tursiops truncatus ponticus*, and *Delphinus delphis ponticus*. All three have been seasonally observed across different monitoring phases, confirming their recurring presence. During the three-day survey in September 2025 a total of 46 cetacean detections were recorded. The harbour porpoise has been consistently recorded since 2021, suggesting the AoI may serve as a key feeding and possibly breeding ground. During the last campaign, conducted in September 2025, 8 encounters occurred. Bottlenose dolphins have also shown feeding behavior, and the sighting of a female with a calf in June 2024, followed by a group of 11 individuals in June 2025, supports the idea of seasonal use, particularly in summer. The common dolphin, initially less frequent, has become more prominent in recent surveys. Large groups were observed in June 2024 and June 2025 (up to 75 individuals), with additional sightings in October 2024. In September 2025, in the Sakarya area, the most frequently observed species was the common dolphin with 30 encounters followed by 8 encounters with harbour porpoises. Bottlenose dolphins were not encountered during this campaign. During Phase 3 campaign, conducted in October 2025 in the Göktepe area, the common dolphin was the only observed species with 30 encounters. However, neither bottlenose dolphins nor harbour porpoises were encountered in Göktepe region during October 2025 survey effort. These patterns suggest seasonal use of the area for feeding, extending beyond summer months and partially aligning with literature that reports a peak in July. Overall, during monitoring activities, a range of ecological behaviors, including foraging, travelling, and courtship, were observed, particularly in offshore zones. These visual observations were complemented by acoustic data, which revealed vocalizations primarily from delphinids, indicating active echolocation and social communication. Taken together, these findings confirm that the AoI supports essential ecological functions such as feeding, socializing, and resting, and plays a significant role in the life cycles of local cetacean populations. Its ecological value is further reinforced by recognition under IUCN assessments and various conservation frameworks. Altogether, data collected across different monitoring phases, including Phase 3, appear balanced, with no major changes or anomalies observed over time.

6.1.2.5 Marine habitats

Table 6-10: General overview of the marine habitat component

Definition	Marine habitats are saltwater habitats which sustain marine life (Abercrombie, Hickman, & Johnson, 1966). Because of the tridimensionality of the marine environment, marine habitats are divided into benthic habitats, standing on the substrate, and pelagic habitat, relying on the water column. Both the habitat typologies are highly influenced by the light availability, which is the main limiting factor.		
Study Area	**RSA**: Western Black Sea basin with focus on the Turkish continental shelf, slope and abyssal plain. **Rationale**: The Andrusov Ridge and Archangelsky Ridge extending south from the Crimean Peninsula divide the Black Sea into two depositional basins: the Western Black Sea and the Eastern Black Sea (Shillington et al., 2008). **AoI**: The project footprint plus a buffer of 500 m per side along the new pipeline, and a 5 Km buffer around the FPU2. **Rationale**: The activity of pipeline laying onto the seafloor may resuspend a limited amount of sediments with scarce possibility to be transported through long distances. A buffer of 500 m is considered as highly precautional. The activity of the FPU2, in its operational phase, implies the discharge of cooling waters and production waters, which could affect pelagic ecosystems, for this reason a buffer of 5 Km was set to describe the pelagic habitats of the AoI and their sensitivity.		
Data Analysis	**Analysis:** Data acquisition through box corer sampling and ROV imaging acquisition. **Rationale:** The study and identification of marine habitats enable the assessment of ecosystem conditions within the area of interest. The identification of the habitat is based on sampling procedures on the field which are eventually validated and compared with secondary data acquisition obtained through grey literature and databases consultation. It is then possible to verify the presence and the precise location of sensible habitat to protect and evaluate the effects external factors produce on them. Their sampling also allows the determination of biodiversity richness which, if monitored, indicates the status of the habitat and potential pressures.		
Data sources	**Primary sources:** Samples collected from Phase 1, Phase 2 and Phase 3 AoI across the years 2023-2025, by DenAr Explorer. (Most recent reference report can be found in APPENDIX B). **Secondary sources**: Secondary data from scientific papers, grey literature and databases		
Sensitivity	**Sensitivity features**	**Supported by**	**Sensitivity value**
	Benthic habitats		

	Simple communities characterized by moderate diversity Absence of bioconstructions and seagrasses.	Primary Data	**Low**
	Pelagic habitats		
	Productive pelagic habitats highly rich in species Probable feeding area. Presence of protected species.	Primary and secondary data	**High**
Gap analysis results	Observations collected between August 2023 and October 2025 offer a dependable representation of current conditions within the project area. Data collected during the monitoring activities suggested the presence of 4 different habitats classified as ME54, ME64, MG64 and MB54 according to EUNIS habitat classification. The most common habitat class resulted in ME64 “Black Sea upper bathyal mud”, a non-protected habitat characterized by anoxic fine and sandy mud covering most of the abyssal zone of the Black Sea including the Amasra area, while the least common resulted in the habitat class coded ME54, closer to the coast. In the Göktepe area, investigated among September and October 2025, the habitat identified coincided with MG64 (Black Sea abyssal mud). Overall, the habitat characterization was consistent among the different phases of the monitoring program and showed the same habitat distribution among the stations sampled. Regarding the pelagic habitat within the area of interest, its presence was not confirmed during monitoring activities, consistent with the baseline study findings and the anoxic conditions characteristics of the Black Sea. However, as highlighted in the baseline studies, the presence of pelagic habitats can be inferred from the high primary production in the area, driven by the Fylos river. This indicates the potential occurrence of the biological components considered in the study, which inhabit depths of up to 100 m.		

6.1.2.6 Legally Protected Areas and Internationally Recognized Areas

Table 6-11: General overview of legally protected areas and internationally recognized areas

Definition	Legally protected areas are clearly defined geographical spaces, nationally or internationally recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values (IUCN, 2008). Internationally recognized areas are important areas for biodiversity identified and designated because their particular features have the potential to support global biodiversity. Officially, they are non-legally protected areas and are usually defined by networks of internationally recognized environmental NGOs and Institutions (e.g., IUCN; Conservation International; Birdlife International, etc.) based on solid standardized scientific criteria. Some of the important areas for biodiversity may also overlap with legally protected areas, while others remain with no legal protection for a period of time until they are eventually recognized as such by the local authorities.		
Study Area	**RSA**: Turkish EEZ of the Black Sea **Rationale**: Turkey is the nation the Project belong to and, for this reason, the Black Sea waters under its jurisdiction are taken as reference. **AoI**: The project footprint with a buffer of 10 km per side. **Rationale**: Turkey does not have regulations on distances from the boundaries of a protected area where a project can be implemented. Therefore, using a precautionary approach, a 10-km buffer is considered as appropriate.		
Data Analysis	**Analysis:** Secondary data acquisition was obtained through the consultation of geographic information systems and literature review. **Rationale:** The identification of legally and internationally protected areas within the project framework facilitates the avoidance of such areas, thereby preserving their integrity and promoting their conservation. In cases where the crossing of one or more areas proves unavoidable, this identification enables the development of a more precise and targeted mitigation strategy, specifically addressing potential impacts on the habitats and species present within the affected area.		
Data sources	**Secondary sources**: Secondary data from scientific papers, grey literature and databases.		
Sensitivity	**Sensitivity features**	**Supported by**	**Sensitivity value**

	Absence of legally protected areas Presence of internationally recognized coastal areas	Secondary data	**Medium-High**
Gap analysis results	The considerations made in the baseline study regarding Internationally Protected areas and those Legally Protected remain valid to date. Considering the distances between the Project area and the Legally Protected Areas in the region, no project-related impacts were estimated on these areas. Regarding Internationally Protected Areas, as previous Phases, Phase 3 AoI, partially intersects the Internationally Protected Area 'Amasra Coasts' KBA/IBA for approximately 1 km in length. This area is about 17,413 hectares wide within Amasra, Bartın Merkez and Çaycuma district boundaries of Bartın Province and hosts the species *Lutra lutra (*Eurasian otter) which is estimated to occur in the coastal part of the study area and which protection status results to "Near Threatened" according to IUCN criteria.		

6.2 Offshore Impact Assessment

Based on the considerations outlined in the previous chapters, specifically that no substantial variations are expected in the overall characterization of the area compared to previous phases, the assessment of evaluation of potential impacts on the components under analysis remains consistent with the impact estimates established for Phase 2. The only component which may require a re-assessment analysis concerns marine sediment, whose sensitivity value has shifted from low in Phase 2 to medium-low in Phase 3. This reflects the outcomes of the most recent monitoring activities carried out following the completion of Phase 2 and preceding the construction of Phase 3. In fact, although contaminant concentrations did not exceed regulatory threshold values, the observed variability in certain elements, together with an increased proportion of fine sediments previously identified during Phase 2 monitoring activities and currently more evident particularly along the escarpment area, indicates a slight modification of local sedimentological conditions. These changes are most plausibly driven by natural processes, including riverine inputs, sediment resuspension and seasonal hydrodynamics, rather than by construction-related contamination; therefore, the observed conditions do not suggest long-term or irreversible impacts and are considered reversible, with the system expected to stabilize over time. Nevertheless, continued and specific monitoring is considered appropriate in order to track potential seasonal fluctuations and to ensure early.

6.3 Onshore – Landfall Area Biological Baselines Assessment

This section evaluates the terrestrial flora and fauna within the landfall area that will be directly affected by the construction activities of the Phase 3 pipeline. Baseline studies and monitoring results conducted during Phase

1 and Phase 2 have been briefly summarized, and the sensitivity of each component has been assessed accordingly (Table 6-14).

6.3.1 Terrestrial Flora and Habitats

6.3.1.1 Phase 1

Terrestrial Flora

For the Phase 1 baseline studies, terrestrial flora surveys were conducted within the Project Area of Influence (AoI), defined as a 200 m buffer around the project footprint. Field surveys were carried out between April and May 2021, November and December 2021, and February and May 2022.

A total of 199 flora species were identified within the AoI, six of which were considered sensitive or potentially sensitive under national and/or international conservation classifications. *Centaurea kilaea, Peucedanum obtusifolium* and *Pancratium maritimum* were found in the Coastal Stable Dune Grassland (Grey Dunes) habitat (classified as EUNIS B1.4) and are listed on the Red List of Habitats.

Due to the ecological sensitivity of the grey dune habitat, all individuals of the two most abundant species (*C. kilaea* and *P. maritimum*) within the AoI were translocated to a suitable, protected location prior to any site preparation activities, as a preliminary mitigation measure. A specific Biodiversity Action Plan (BAP) (Golder, 2022) was prepared, including baseline information and the methodological approach for the transplantation process. *H. platyphylla* and *P. obtusifolium* were not included in the transplantation as the few specimens present within the AoI were only identified in May 2022 and are outside the footprint of the planned works.

According to the 'Site Report: The Translocation of Sensitive Species' (May 2022), individuals of *C. kilaea* and *P. maritimum* located in the landfall area were collected and transplanted to the Kızılkum area. These operations were carried out simultaneously between 17–21 January and 1–3 February 2022.

A plot of land owned by the General Directorate of Forestry was allocated to ensure long-term protection of the species and their transplantation to a suitable habitat. A formal usage permit for the area was obtained on 17 January 2022 (numbered 3384168). Between 22 and 27 November and 1 December 2021, seeds of *C. kilaea* and *P. maritimum* were collected from the Landfall area and stored under controlled conditions to prevent humidity-, temperature-, and weather-related damage. The seeds were delivered to the Seed Gene Bank of Türkiye on 2 March 2022 (numbered 4772815).

Additionally, *P. maritimum* seeds were planted in Kızılkum on 9–10 March 2022 under the supervision of Prof. Hayri Duman, the flora specialist from the Department of Biology at Gazi University. To ensure long-term protection and prevent anthropogenic pressure, a wire fence was installed around the translocation site and signboards indicating “Rare Plant Protection Area” were placed on 13–15 February 2022.**Habitat Classification**

Within a 1,000 m buffer around the Project Area and along the ETL route, a total of ten EUNIS habitat types were identified and mapped:

- B1.4c – Black Sea coastal stable dune grassland (grey dunes)
- C1.2 – Permanent mesotrophic lakes, ponds, and pools
- C2.3 Permanent non-tidal, smooth-flowing watercourses
- C3.2 – Water-fringing reedbeds and tall helophytes other than canes

- D5.2 – Beds of large sedges normally without free-standing water
- G1.1 – Riparian and gallery woodland with dominant Alnus, Betula, Populus or Salix
- G1.A – Meso- and eutrophic Quercus, Fraxinus, Acer, Tilia, Ulmus and related woodland
- G1.C – Highly artificial broadleaved deciduous forestry
- G2.8 – Highly artificial broadleaved evergreen forestry

The B1.4c (grey dune) habitat includes *Centaurea kilaea* (a regional endemic species), as well as *Pancratium maritimum* and *Peucedanum obtusifolium*, both non-endemic but rarely occurring species of conservation concern.

According to the 2022 Biodiversity Action Plan (BAP), the estimated impact on biodiversity within the dune area includes a loss of dune morphology, with approximately 27,000 m^2 of dune habitat expected to be directly affected by construction activities.

Additionally, other habitats were expected to be disturbed during the preparation and construction phases, including approximately 25,000 m^2 of water-fringing reedbeds, sedges, and riparian woodland. These impacts mainly relate to verge clearing along the service road and the creation of a 50 m corridor along the onshore pipeline route.

6.3.1.2 Phase-2

For Phase 2 flora baseline studies, the Area of Influence (AoI) was defined in the same way as in Phase 1. The Phase 1 baseline and monitoring studies, together with the Phase 2 baseline surveys, were used as the primary data sources.

As a result of all flora studies, the total number of identified species increased to 211. During the monitoring surveys, new species were recorded, but none of them were classified as sensitive, endemic, or restricted-range species.

Populations of *C. kilaea* and *P. maritimum* were also observed in dune habitats that were not impacted by Phase 1 construction activities. To raise awareness among employees and encourage conservation efforts, signs were installed to draw attention to the presence of these species, which grow in the coastal dune habitat next to the natural gas transmission line (Figure 6-1).

Figure 6-1: Signage for the protection of Centaurea kilaea and Pancratium maritimum species

As part of the Phase 1 studies, approximately 4,500 rooted individuals of *C. kilaea* and 6,000 bulbs of *P. maritimum* distributed in the coastal dune habitat were translocated to Kızılkum Beach, a similar habitat located outside the Project footprint. The site was designated as a "Rare Plant Protection Area" and fenced with wire for protection. The transplantation success rate was nearly 100%, and around 10,000 seeds of *P. maritimum* collected from the Project area were also planted in March 2022, showing almost full germination (Figure 6-2).

Figure 6-2: General view of the "Rare Plant Protection Area" established near Kızılkum Beach

Habitat Classification

During Phase 2 baseline studies, the habitat map was updated based on the field observations of Prof. Hayri Duman. Phase 2 pipeline route is entirely located within modified habitats, and therefore, no natural habitat loss was identified.

According to Prof. Duman, the area to the east of the Phase 2 pipeline was previously classified as G1.1 Riparian and Gallery Woodland. However, it has now been transformed into a shrub-dominated formation due to the loss of its connection with the wetland after the construction works of Phase 1. Consequently, this area has been reclassified as "B1.6 Coastal Dune Scrub", resulting in the identification of a new habitat type at the Phase 2.

6.3.1.3 Phase-3

The Phase 3 flora and habitat baseline studies were developed by reviewing the Phase 1 and Phase 2 baseline and monitoring reports, as well as the 2025 monitoring results. Additionally, Prof. Hayri Duman conducted the Phase 3 baseline survey in October 2025.

For Phase 3, the area of influence (AoI) for flora was defined in the same way as in Phases 1 and Phase 2: a 200 m buffer zone surrounding the project area (Figure 3-1). A total of 214 species of flora were recorded within Project AoI.

Priority was given to natural habitats and areas where species with critical distribution occur when selecting Sampling Points (SPs). Accordingly, two SPs were designated to represent coastal dune habitats, and two SPs were designated to represent riparian habitats. The SPs, their habitat types, and coordinates are presented in Table 6-12.

Table 6-12: Onshore Flora Sampling Points and Coordinates

Sampling Points	Coordinates	Habitat
SP1	421171 D 4603645 K	B1.4: Coastal stable dune grassland (grey dunes)
SP2	421151 D 4603674 K	B1.4: Coastal stable dune grassland (grey dunes) B1.6: Coastal dune scrub
SP3	421167 D 4603723K	B1.4: Coastal stable dune grassland (grey dunes)
SP4	421162 D 4603516 K	G1.1: Riparian and gallery woodland, with dominant Alnus, Betula, Populus or Salix

According to the October 2025 monitoring report, the populations of the regional endemic species *C. kilaea*, as well as the rare non-endemic species *P. maritimum* and *P. obtusifolium*, were found to be in good condition within the coastal dune habitat. This dune habitat is located east of the Phase 1 and Phase 2 routes and belongs to the EUNIS B1.4 (grey dune) habitat type. It has not been impacted by previous construction activities. As a result of the October 2025 field study, approximately 3,000 individuals of *P. maritimum*, 2,000 individuals of C*. kilaea*, and 80 individuals of *P. obtusifolium* were recorded within the coastal dune habitat. In addition, these species were observed to be in good condition and produce a large number of fruits, indicating that their populations are likely increasing.

Construction of the Phase 3 pipeline will be conducted within three natural habitats: EUNIS B1.4, B1.6 and G1.1. Of these, the B1.4 habitat is particularly important as it is habitat to three sensitive species of flora (*C. kilaea*, *P. maritimum* and *P. obtusifolium*). Specific mitigation measures need to be planned and implemented to minimize potential impacts on these species and their associated dune habitat. As mentioned in Section 9.3, the translocation of these flora species is planned prior to the construction phase.

Coastal Dune Area within Phase 3 Route and Impact Area (SP1 and SP3- EUNIS Habitat: B1.4).

Coastal Dune Scrub within Phase 3 Pipeline Route and Impact Area (SP2- EUNIS Habitat: B1.4).

Riparian and Gallery Woodland within Phase 3 Pipeline Route and Impact Area (SP4- EUNIS Habitat: G1.1).

Figure 6-3: B1.4 grey dune habitat and endemic species (October 25)

Invasive Flora Species Management

Invasive species, including *Aster subulatus, Datura stramonium, Xanthium strumarium* and *Conyza canadensis*, were recorded along the route of the natural gas pipeline at the landfall area, around the area of the former ACD Campand on the service road. Following cleaning and removal efforts to control these species, their populations have significantly decreased. To prevent recolonization and maintain the ecological integrity of the area, the control measures targeting these species will continue without interruption.

In the coastal dune habitat (36 T 421283-4603758), control efforts have been initiated against IAS such as *Xanthium strumarium, Aster subulatus, Ambrosia artemisiifolia*, and *Conyza canadensis*, which were identified during the 2024 monitoring period. These plants were manually removed by workers using hand tools and/or

hoes, uprooted, and collected. To ensure sustainable conservation of the coastal dune habitat, control efforts will continue without interruption and before IAS reach the fruiting stage.

Habitat Classification

No additional habitat types were identified within Project AoI during the Phase 3 studies.

The habitat map of the onshore biological AoI, based on the EUNIS habitat classification system, is provided in Figure 6-4 while the corresponding area calculations are shown in **Table 6.13**.

Table 6.13 EUNIS habitat types present in the Biological AoI.

EUNIS Habitat Type	Area (ha)	%
Natural Habitats		
B1.4-Black Sea coastal stable dune grassland (grey dunes)	2.2	0.7
B1.6- Coastal Dune Scrub	0.4	0.1
C1.3- Permanent eutrophic lakes, ponds and pools	0.1	0.0
C2.3- Permanent non-tidal, smooth-flowing watercourses	7.6	2.5
C3.2-Water-fringing reedbeds and tall helophytes other than canes	1.5	0.5
D5.2-Beds of large sedges normally without free-standing	16.2	5.3
G1.1-Riparian and gallery woodland, with dominant Alnus, Betula, Populus or Salix	5.9	1.9
G1.A-Meso-and eutrophic Quercus, Fraxinus, Acer, Tilia, Ulmus and related woodland	26.0	8.6
Subtotal	**60.0**	**19.7**
Modified Habitats		
G1.C-Highly artificial broadleaved deciduous forestry	18.0	5.9
G2.8-Highly artificial broadleaved evergreen forestry	4.6	1.5
I1.2- Mixed crops of market gardens and horticultur	22.6	7.4
J1.6- Urban and suburban construction and demolition sites	195.3	64.3
J4.2- Road networks	3.4	1.1
Subtotal	**243.9**	**80.3**
TOTAL	**303.9**	**100.0**

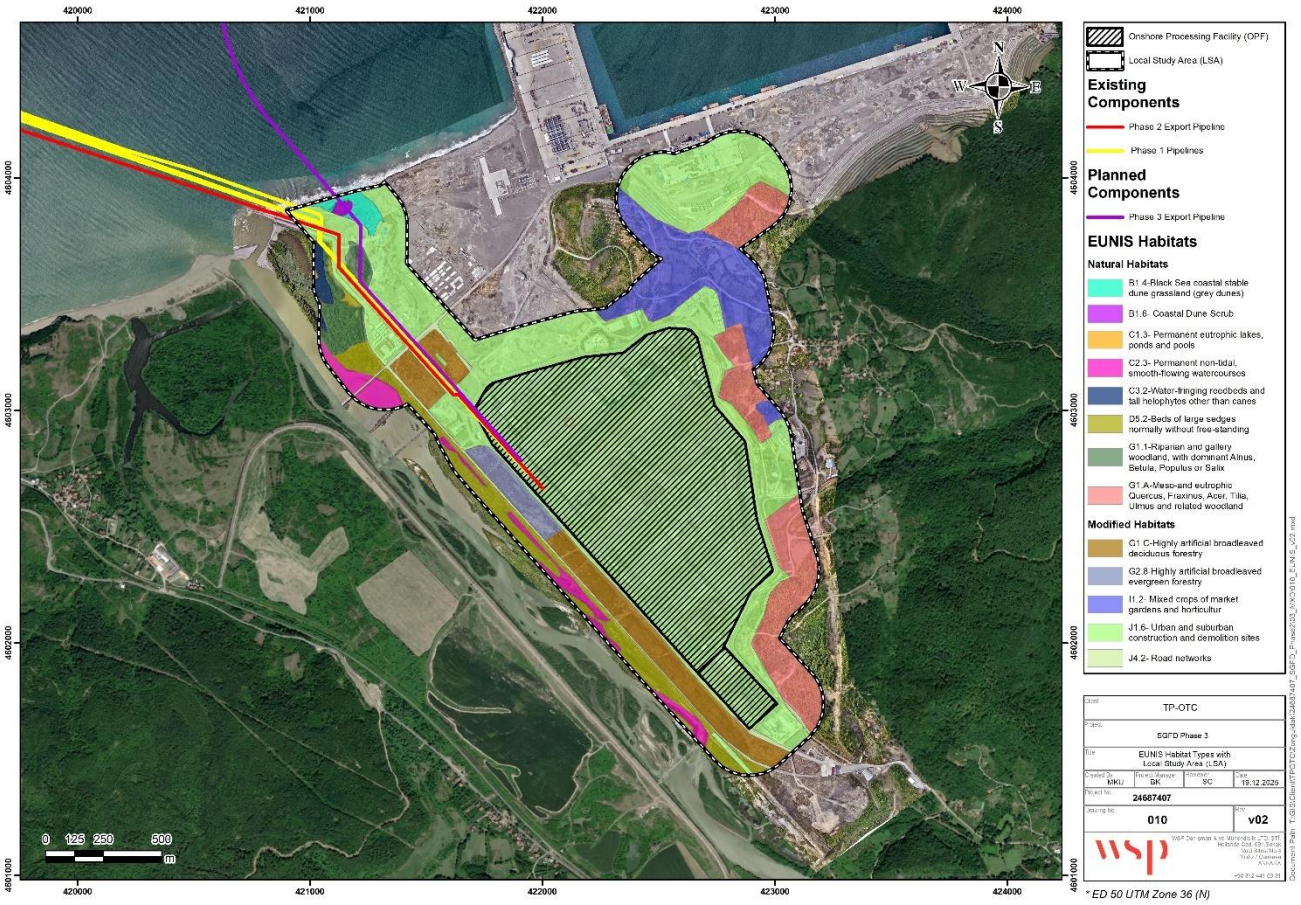


Figure 6-4: EUNIS Habitat types within the onshore biological AoI

The planned 1.4 km onshore pipeline will be constructed to the east of Phase 1 and Phase 2. Of this length, approximately 400 m will cross natural habitats, while the remaining section lies within previously modified areas.

Considering the 25 m construction corridor for each side of the pipeline route, the habitats expected to be directly affected by the Phase 3 construction activities are listed below:

- B1.6 – Coastal dune scrub
- B1.4c – Black Sea coastal stable dune grassland (grey dunes)
- G1.1 – Riparian and gallery woodland dominated by Alnus, Betula, Populus, or Salix species

6.3.2 Terrestrial Fauna Baseline

6.3.2.1 Phase-1

Invertebrates

Invertebrate baseline surveys were conducted within a 1,000 m buffer zone around the project area and the ETL route in January, February and March 2022 by local terrestrial expert Dr Şafak Bulut and in March and May 2022 by freshwater invertebrate expert Prof Aydın Akbulut. A total of 589 aquatic invertebrates were sampled from the Yenice River and the coastal pond. These belonged to 22 species from four taxonomic groups: Arthropods (Insecta: 14 species, Crustacea: 4 species), Molluscs (3 species) and Annelids (2 species).

Terrestrial fauna

Baseline studies of terrestrial fauna were conducted by local fauna expert Dr. Şafak Bulut within a 1,000 m buffer around the Project Area and ETL route during April–May 2021 and April–May 2022.

Amphibians:

Field and literature data confirmed the presence of eight amphibian species within the AoI. Only one endemic species, *Triturus anatolicus*, was recorded, and its occurrence in the Yenice River was also confirmed through eDNA analysis.

Reptiles:

A total of 17 species of reptile were identified within the AoI, including two endemic species: *Darevskia bithynica* and *Vipera barani*. None of the recorded reptile species were listed as Critically Endangered (CR) or Endangered (EN) according to the IUCN Red List. During interviews with field personnel, evidence of Vulnerable (VU) *Testudo graeca* activity was also noted within the area.

Birds:

A total of 263 bird species were recorded within the AoI based on field observations and literature sources. According to IUCN classifications, *Aquila nipalensis* is listed as CR and *Oxyura leucocephala* as EN.

Despite occasional records, the AoI was considered unsuitable for the breeding or overwintering of these species.

Project AoI lies along the western boundary of the Amasra Kıyıları Key Biodiversity Area (KBA) and Important Bird Area (IBA), and the site and surrounding areas are occasionally used as staging grounds for migratory birds.

Mammals:

A total of 41 species of mammal were identified within Project AoI. No endangered species were recorded. Two VU bat species, *Myotis capaccinii* and *Miniopterus schreibersii*, were reported, with the latter being confirmed through acoustic recordings of bats. Bat flying and feeding activity was found to occur more frequently around the project area than within it.

6.3.2.2 Phase-2

The Phase 2 fauna baseline compiled from the Phase 1 baseline and monitoring reports, together with the Phase 2 baseline studies, are summarized below:

- The Area of Influence (AoI) defined for the Phase 2 fauna studies remained the same as for the Phase 1 studies.
- No new invertebrate or amphibian species were observed during the ongoing monitoring studies. The only endemic amphibian species, *Triturus anatolicus*, was confirmed in the Yenice River through eDNA analysis prior to construction work beginning. However, it was not detected during the field surveys conducted in 2023–2024.
- As a result of the ongoing monitoring studies, the total number of recorded reptile species increased to 21. *Emys orbicularis* (NT) (probably subspecies hellenica) was also encountered in the coastal pond during the freshwater fish monitoring surveys.
- No new bird species were recorded during the Phase 2 monitoring studies.
- The number of mammal species increased to 44, but none of the newly identified species were assessed as sensitive.

6.3.2.3 Phase-3

Phase 3 fauna baseline data were compiled by integrating findings from the Phase 1 and Phase 2 baseline and monitoring reports, together with the results of the October 2025 Phase 3 baseline surveys. Sampling points and their coordinates are same as the flora studies (Table 6-14). The Area of Influence (AoI) defined for Phase 3 fauna studies is the same as in Phase 1 and Phase 2 (Figure 3-1). A summary is provided below:

SP1 – Coastal Dune Habitat (B1.4)

- The habitat provides suitable conditions for reptile species such as *Testudo graeca (VU), Ophisops elegans* (LC), and *Podarcis muralis* (LC).
- No amphibian species were recorded.
- Coastal and open areas are used by birds for resting and feeding.
- Tracks of small carnivores were identified within the mammal fauna.
- Based on field verification, *Darevskia bithynica, Vipera barani*, and *Triturus anatolicus* were not found in this habitat.

SP2 – Coastal Dune and Scrub Habitat (B1.4 and B1.6)

- B1.6 habitat hosts nesting and breeding areas for *Streptopelia turtur* (VU), *Gallinula chloropus* (LC), and *Lanius collurio* (NT).
- Reptile activity was low; however, the presence of *Ophisops elegans* (LC) was confirmed.
- The B1.6 habitat serves as an important breeding area for *Ommatotriton nesterovi* (LC), *Bufotes viridis* (LC), and *Pelophylax ridibundus* (LC).
- There are transitional corridors used by small carnivores.

SP3 – Coastal Dune Habitat (B1.4)

- The habitat functions as a transitional corridor for reptile species.

- Reptile activity was low but tracks of *Testudo graeca* were recorded.
- Most bird species used the area for feeding and resting during migration periods.
- Bat activity (particularly *Pipistrellus pipistrellus*) was recorded during nighttime surveys.

SP4 – Riparian and Gallery Woodland Habitat (G1.1 Riparian and Gallery Woodland)

- Structurally moist, shaded, and wooded habitat provides suitable flight and foraging corridors for bat species.
- High songbird activity was observed, but no species with high conservation status were recorded.
- Mammal movement along the stream was identified through tracks.

Table 6-14: Sensitivity Assessment of Terrestrial Flora and Fauna (Phase 1&2&3)

Component	Sensitivity features	Supported by	Sensitivity Value
Flora	Limited Presence (1) of threatened species of flora. Limited presence (1) of protected species. Limited presence of endemic or restricted range species of flora.	Primary data and secondary data	Medium
Invertebrates	Limited number (1) of threatened species of freshwater aquatic invertebrates. Absence of endemic or restricted range. species of freshwater aquatic invertebrates.	Primary data and secondary data	Medium-low
Amphibian	Absence of threatened amphibian species Presence of protected species (8). Limited presence (1) of endemic amphibian. Presence of areas, within the Project's AoI, deemed suitable for the spawning of the amphibian.	Primary data and secondary data	Medium
Reptile	Absence of threatened species. Presence of protected species (17). Limited presence (2) of endemic species.	Primary data and secondary data	Medium
Bird	Presence of threatened bird species (2). Presence of protected species (175). Absence of endemic species.	Primary data and secondary data	Medium-High
Mammals	Absence of threatened species. Presence of protected species (24) including bat species, predators and scavengers, and European otter. Absence of endemic species.	Primary data and secondary data	Medium
Habitats	Presence of threatened and/or protected habitats (B1.4).	Primary data and secondary data	Medium-high

6.4 Onshore Impact Assessment

Similar to Phase 1 pipeline construction, direct impacts such as the removal of natural vegetation and soil are expected during Phase 3 pipeline construction. Indirect impacts during the construction and operation phases, including dust and particulate emissions, potential introduction of alien species, aerial noise and vibration, increased and modified onshore traffic, and light emissions, were already assessed under the Phase 2 ESIA. The mitigation measures defined in that assessment are considered adequate; therefore, no further assessment is required for Phase 3 regarding indirect impacts. The mitigation measures and monitoring actions proposed for Phase 2 will also be implemented for Phase 3. Terrestrial flora and fauna direct impact factors for Phase 3 are given in Table 6-15.

Table 6-15: Project actions and related direct impact factors potentially affecting flora and fauna during construction phase

Project actions	Brief description	Impact factors
Vegetation clearing	Removal of natural vegetation from the area along the pipeline from coastal dune area within the Project's footprint	■ Removal of natural vegetation
Site levelling and grading	Removal of the first 300 mm of soil from dune habitat in the landfall area	■ Removal of natural vegetation ■ Removal of soil

Removal of natural vegetation

During the construction phase of the Phase 3 pipeline, the loss of natural habitats has been calculated as follows:

- G1.1: 0.890 ha
- B1.6: 0.270 ha
- B1.4: 0.465 ha

It is expected that approximately 150 individuals of *Centaurea kilaea*, 30 individuals of *Peucedanum obtusifolium*, and 500 individuals of *Pancratium maritimum* will be directly affected by the project actions. Individuals of these species will be translocated to an area that will not be affected by the activity. The most suitable area for the translocation will be determined through field studies by local experts (Prof. Hayri Duman and his research team) and detailed in the "Landfall Area Translocation and Restoration Plan".

Fauna species will be impacted both directly and indirectly, as the clearance of vegetation may destroy suitable habitats used for feeding, shelter, or nesting. Species with low mobility, such as reptiles, may not be able to escape construction activities, while individuals that rely on concealment to avoid predators could be accidentally killed during works.

In particular, the B1.6 (coastal dune scrub) habitat, which hosts nesting pairs of *Streptopelia turtur* (European Turtle Dove, VU) and *Lanius collurio* (Red-backed Shrike, LC), is considered important for bird breeding. Vegetation removal during the construction phase could destroy nesting sites and disturb breeding activities; therefore, construction in this area should be scheduled outside the breeding season (April–July). If construction

activities need to be carried out in the B1.6 habitat, during the breeding season, a nest check should be conducted by a biologist, and any nest identified should be relocated.

Removal of Soil

Topsoil stripping will be conducted as a subsequent step following the clearance of natural vegetation described above and will therefore affect the same areas. The removed topsoil from the landfall area will be temporarily stored in a designated storage site and reinstated upon completion of construction activities.

7.0 ONSHORE – LANDFALL AREA BIOLOGICAL ASSESSMENT

7.1 Offshore Critical Habitat Assessment

The Critical Habitat assessment remains consistent with previous project phases.

Critical Habitats within the area have been identified based on Criteria 1 and 3 of IFC Performance Standard 6. Specifically, *Phocoena phocoena relicta*, *Tursiops truncatus ponticus*, and *Delphinus delphis ponticus* are considered trigger species under Criterion 1, as all identified EAAAs (Ecologically Appropriate Areas of Analysis) exceed the 0.5% threshold of the species' EOO (Extent of Occurrence). The direct observation of these species within the Area of Interest (AoI) further confirms the ecological relevance of the site and supports its designation as Critical Habitat.

Regarding Criterion 3a "areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1% of the global population of a migratory or congregatory species at any point in its lifecycle", due to the absence of reliable local population estimates all subspecies were assessed using the EOO as a proxy for global population size. More specifically, to determine whether the 1% threshold was met the same EAAAs used for Criterion 1 were compared against each species' EOO. Since all identified EAAAs exceed 1% of the respective EOOs, the three subspecies also trigger Criterion 3, further reinforcing the Critical Habitat determination.

This conclusion remains valid for Phase 3, as the identification of EAAAs is not solely based on physical presence within the AoI, but rather on the ecological influence and potential distribution of the species. In other words, the ecological approach assumes that dolphins are consistently present or have influence over the area, regardless of project phase or spatial boundaries. Therefore, no significant variation is expected across phases, as the ecological relevance of the species remains constant.

For more details regarding the baseline study can be found in the following document "Chapter 6.3 Offshore Physical and Biological Baseline" (Doc. No. SC26-2A-OTC-PRJ-EN-REP-000011).

7.2 Onshore Critical Habitat Assessment

Based on the information reported in Phase-1 ESIA Section 6.2.2, Phase-2 ESIA Section 6.2 and Section 6.3 of this report, 13 species and one habitat are considered eligible to potentially trigger Critical Habitat (CH) according to the definitions, criteria and thresholds provided by IFC Performance Standard 6 (PS6, 2019). The identified species are reported in Table 7-1.

Among these species, *Aquila nipalensis, Oxyura leucocephala, Darevskia bithynica, Vipera barani,* and *Triturus anatolicus* do not use Phase-3 and its AoI as breeding or nesting sites and they do not trigger CH status; therefore, no further assessment was conducted for these species.

Table 7-1: Shortlist of species potentially eligible for the Critical Habitat determination under IFC PS6 Criteria

Species	National Conservation Status Criterion 1	IUCN Global Red List Criterion 1	Endemism Criterion 2	Migratory or Congregator Criterion 3	Habitat Criterion 4
Centaurea kilaea	EN	NE	End.	-	-
Peucedanum obtusifolium	VU	NE	-	-	-
Pancratium maritimum	VU	LC	-	-	-
Aquila nipalensis	-	EN	-	Migrant	-
Grus virgo	-	EN	-	Migrant	-
Oxyura leucocephala	-	EN	-	Migrant	-
Miniopterus schreibersii	-	VU	-	Migrant	-
Myotis capaccinii	-	VU	-	-	-
Darevskia bithynica	-	LC	End.	-	-
Vipera barani	-	NT	End.	-	-
Triturus anatolicus	-	LC	End.	-	-
B1.4c Coastal stable dune grassland (grey dunes)	-	-	-	-	EN

As precise numerical estimates of local populations are unavailable for most of the evaluated species, an Ecologically Appropriate Area of Analysis (EAAA) was defined for each species to determine the potential presence of Critical Habitat (CH). The fauna EAAAs and EOOs defined during Phase 2 CHA were used for Phase 3.

For flora, the status of populations within the Area of Influence (AoI) was evaluated based on data provided by the local flora expert, Prof. Duman, as reported in the Phase I–II Flora–Fauna and Hydrobiology Monitoring and Phase III Baseline Report (October 2025).. Using field observations and local knowledge, Prof. Duman estimated population sizes and calculated concentration values relative to the 0.5% threshold.

Criterion 1: Habitats of significant importance to Critically Endangered and/or Endangered species

Table 7-2: CHA for Flora Species Potentially Triggering Criterion 1

Species	National conservation status	IUCN Classification	Status of population within the AoI	Ratio to Türkiye population	Trigger Critical Habitat [Y/N]
Centaurea kilaea	EN	NE	2000	0.25% - 0.4%	N

Species	National conservation status	IUCN Classification	Status of population within the AoI	Ratio to Türkiye population	Trigger Critical Habitat [Y/N]
Peucedanum obtusifolium	VU	NE	80	0.04% - %0.8%	N
Pancratium maritimum	VU	LC	3000	0.06 %- 0.1%	N

Table 7-3: CHA for Fauna Species Potentially Triggering Criterion 1

Species	IUCN Global Red List Status	Potentially Present/ Observed [P/O]	EOO (km^2)	EAAA (km^2)	% of EOO	EAAA is ≥ 0.5% of EOO [Y/N]	Trigger Critical Habitat [Y/N]
Miniopterus schreibersii	VU	O	19,946,710	1,070	0.005	N	N
Myotis capaccinii	VU	P	53,870,222	1,070	0.002	N	N

Criterion 2: Habitats of significant importance to Endemic and/or Restricted-range species

Table 7-4: CHA for Flora Species Potentially Triggering Criterion 2

Species	IUCN Global Red List Status	Potentially Present/ Observed [P/O]	EOO (km^2)	EAAA (km^2)	% of EOO	EAAA is ≥ 10% of EOO [Y/N]	Trigger Critical Habitat [Y/N]
Centaurea kilaea	EN	O	>50.000	-	-	N	N

Criterion 4: Highly Threatened and/or Unique Ecosystems

Table 7-5: CHA for Habitats Potentially Triggering Criterion 4

Habitat Type	IUCN Status	EOO (km^2)	EAAA (km^2)	%5 of EOO	EAAA is ≥ 5% of EOO [Y/N]	Trigger Critical Habitat [Y/N]
B1.4c Coastal stable dune grassland (grey dunes)	EN	64.21	0.022	3.21	N	N

8.0 CRITICAL HABITATS

8.1 Offshore Critical Habitat Assessment

The Critical Habitat assessment remains consistent with previous project phases.

Critical Habitats within the area have been identified based on Criteria 1 and 3 of IFC Performance Standard 6. Specifically, *Phocoena phocoena relicta*, *Tursiops truncatus ponticus*, and *Delphinus delphis ponticus* are considered trigger species under Criterion 1, as all identified EAAAs (Ecologically Appropriate Areas of Analysis) exceed the 0.5% threshold of the species' EOO (Extent of Occurrence). The direct observation of these species within the Area of Interest (AoI) further confirms the ecological relevance of the site and supports its designation as Critical Habitat.

Regarding Criterion 3a "areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1% of the global population of a migratory or congregatory species at any point in its lifecycle", due to the absence of reliable local population estimates all subspecies were assessed using the EOO as a proxy for global population size. More specifically, to determine whether the 1% threshold was met the same EAAAs used for Criterion 1 were compared against each species' EOO. Since all identified EAAAs exceed 1% of the respective EOOs, the three subspecies also trigger Criterion 3, further reinforcing the Critical Habitat determination.

This conclusion remains valid for Phase 3, as the identification of EAAAs is not solely based on physical presence within the AoI, but rather on the ecological influence and potential distribution of the species. In other words, the ecological approach assumes that dolphins are consistently present or have influence over the area, regardless of project phase or spatial boundaries. Therefore, no significant variation is expected across phases, as the ecological relevance of the species remains constant.

More details regarding the baseline study can be found in the following document "Chapter 6.3 Offshore Physical and Biological Baseline" (Doc. No. SC26-2A-OTC-PRJ-EN-REP-000011).

8.2 Onshore Critical Habitat Assessment

Based on the information reported in the Section 6.3, 13 species and one habitat are considered eligible to potentially trigger Critical Habitat (CH) according to the definitions, criteria and thresholds provided by IFC Performance Standard 6 (PS6, 2019). The identified species are reported in Table 8-1. Among these species, *Aquila nipalensis, Oxyura leucocephala, Darevskia bithynica, Vipera barani,* and *Triturus anatolicus* do not use Phase-3 and its AoI as breeding or nesting sites and they do not trigger CH status; therefore, no further assessment was conducted for these species.

Table 8-1: Shortlist of species potentially eligible for the Critical Habitat determination under IFC PS6 Criteria

Species	National Conservation Status Criterion 1	IUCN Global Red List Criterion 1	Endemism Criterion 2	Migratory or Congregator Criterion 3	Habitat Criterion 4
Centaurea kilaea	EN	NE	End.	-	-
Peucedanum obtusifolium	VU	NE	-	-	-

Species	National Conservation Status Criterion 1	IUCN Global Red List Criterion 1	Endemism Criterion 2	Migratory or Congregator Criterion 3	Habitat Criterion 4
Pancratium maritimum	VU	LC	-	-	-
Aquila nipalensis	-	EN	-	Migrant	-
Grus virgo	-	EN	-	Migrant	-
Oxyura leucocephala	-	EN	-	Migrant	-
Miniopterus schreibersii	-	VU	-	Migrant	-
Myotis capaccinii	-	VU	-	-	-
Darevskia bithynica	-	LC	End.	-	-
Vipera barani	-	NT	End.	-	-
Triturus anatolicus	-	LC	End.	-	-
B1.4c Coastal stable dune grassland (grey dunes)	-	-	-	-	EN

As precise numerical estimates of local populations are unavailable for most of the evaluated species, an Ecologically Appropriate Area of Analysis (EAAA) was defined for each species to determine the potential presence of Critical Habitat (CH). The fauna EAAAs and EOOs defined during Phase 2 CHA were used for Phase 3.

For flora, the status of populations within the Area of Influence (AoI) was evaluated based on data provided by Prof. Duman, the local expert. Using field observations and local knowledge, Prof. Duman estimated population sizes and calculated concentration values relative to the 0.5% threshold.

Criterion 1: Habitats of significant importance to Critically Endangered and/or Endangered species

Table 8-2: CHA for Flora Species Potentially Triggering Criterion 1

Species	National conservation status	IUCN Classification	Status of population within the AoI	Ratio to Türkiye population	Trigger Critical Habitat [Y/N]
Centaurea kilaea	EN	NE	2000	0.25% - 0.4%	N
Peucedanum obtusifolium	VU	NE	80	0.04% - %0.8%	N
Pancratium maritimum	VU	LC	3000	0.06 %- 0.1%	N

Table 8-3: CHA for Fauna Species Potentially Triggering Criterion 1

Species	IUCN Global Red List Status	Potentially Present/ Observed [P/O]	EOO (km^2)	EAAA (km^2)	% of EOO	EAAA is ≥ 0.5% of EOO [Y/N]	Trigger Critical Habitat [Y/N]
Miniopterus schreibersii	VU	O	19,946,710	1,070	0.005	N	N
Myotis capaccinii	VU	P	53,870,222	1,070	0.002	N	N

Criterion 2: Habitats of significant importance to Endemic and/or Restricted-range species

Table 8-4: CHA for Flora Species Potentially Triggering Criterion 2

Species	IUCN Global Red List Status	Potentially Present/ Observed [P/O]	EOO (km^2)	EAAA (km^2)	% of EOO	EAAA is ≥ 10% of EOO [Y/N]	Trigger Critical Habitat [Y/N]
Centaurea kilaea	EN	O	>50.000	-	-	N	N

Criterion 4: Highly Threatened and/or Unique Ecosystems

Table 8-5: CHA for Habitats Potentially Triggering Criterion 4

Habitat Type	IUCN Status	EOO (km^2)	EAAA (km^2)	%5 of EOO	EAAA is ≥ 5% of EOO [Y/N]	Trigger Critical Habitat [Y/N]
B1.4c Coastal stable dune grassland (grey dunes)	EN	64.21	0.022	3.21	N	N

9.0 MITIGATION & MONITORING MEASURES

9.1 Mitigation measures

Based on the ESIA Phase 2 the potential impacts on offshore biological/environmental components deriving from project actions during construction and operation phases are:

1) removal of natural vegetation and soil;
2) changes in flow/circulation of water bodies;
3) emission of dust and particulate matter;
4) dredging and sediment removing;
5) discharge of wastewater;
6) increase in vehicular traffic;
7) presence of working and moving vessels;
8) emission of aerial and underwater noise, light and vibration;
9) increase and modification of traffic onshore;
10) minor leakage of contaminants into water and soil;
11) handling and resuspension of sediments;
12) possible introduction of alien species;
13) emission of light;
14) emission of aerial heat;
15) emission of electromagnetic fields (EMF);
16) presence and introduction of new offshore infrastructures;
17) emission of contaminants into marine water.

In the Biodiversity Management Plan (BMP) a table will be present with details of the environmental management and mitigation measures/actions identified as Biodiversity (BIO) management activities during construction and operation phases. For each measure/action identified, the table will show:

- Item: the identification code of the mitigation measure/actions (ID.);
- Biodiversity Component: biological or environmental component
- Impact: measurable effect of the impact factor on the component
- Mitigation Measure: description of the mitigation measure/ actions;
- Objective of Mitigation: the environmental target to be achieved after mitigation;

- KPI (Key Performance Indicator): quantitative compliance indicator or qualitative acceptance criteria that can be used to verify the actual effectiveness of the mitigation measure/actions;
- Schedule and Frequency of Mitigation: frequency/timing of the measure/action;
- Primary Role for Mitigation (Mit.) and Verification (Ver.) of Performance: resource responsible for implementing the measures/actions;

Verification Output of the Mitigation Implementation: report and/or internal documentation of the implemented mitigation measure/actions;

The aim of the “mitigation hierarchy” (avoidance, minimization, rehabilitation/restoration, offset) is applied for **the selection of the measures to limit as far as possible negative impacts to the environment.**

Figure 9-1: Project Biodiversity Hierarchy.

This process is intended as an adaptive management system, so that the mitigation and management approach will be adapted based on any new findings which could arise from the monitoring program described in the following sections.

In case during monitoring non-conformities or unexpected residual impacts due to the Project are identified on site, the Environmental specialists will evaluate the situation and, if needed, propose changes and integrations to the mitigation and monitoring activities included in the present BMP. The proposed changes will be evaluated TP-OTC HSSE Coordinator and the HSSE Team and approved by TP-OTC Project Director. The mitigation and monitoring measures originally established for Phase 2 are deemed equally applicable and effective for Phase 3 and will be summarized in the up-to-date Biodiversity Management Plan.

With regard to Phase 3, based on the data currently available and considering that the planned activities, the intervention area and the environmental components considered are substantially the same as those involved in previous phases, the nature and magnitude of potential impacts are anticipated to remain consistent with prior assessment. Consequently, the existing measures will be implemented and adjusted to address specific conditions of Phase 3, particularly in the areas affected by the new infrastructures. Should any unforeseen impact or significant deviation arise during implementation, supplementary and context-specific mitigation actions will be implemented.

The BMP will include all the measures from Phase 2 specifically updated to accommodate Phase 3 additional infrastructures (both in the construction and operation stages) as well as the new restoration and offsetting strategies for the onshore habitats.

9.2 Monitoring measures

Monitoring helps to evaluate that the identified mitigation measures generate the expected results, avoiding or reducing potential impacts on the environment and, if the monitoring detects significant residual or unanticipated impacts, these should serve to define new mitigation measures to eliminate or further mitigate these impacts.

Considering that no significant changes to the methodology adopted in Phase 2 are deemed necessary, the monitoring methodology will be appropriately adapted for the activities planned in Phase 3 within the areas affected by the new infrastructures (pipeline along route 4, FPU2 etc.). Furthermore, should any critical issues arise from the data collected, targeted and context specific monitoring measures be proposed. The precise sampling points will therefore be defined during subsequent design phases.

9.3 Onshore Mitigation and Monitoring Measures

Mitigations and monitoring measures for the construction and operation stages from previous phases will also be implemented (where relevant) for Phase 3 with the addition of the following:

- The construction corridor of the Phase 3 pipeline landfall area should be narrowed to 10 meters on each side, which will reduce the loss of sensitive flora species within the area.
- Excavated material should be stored in already modified areas located west of the pipeline, rather than within natural habitats. Strict measures should be implemented to ensure that no vehicles or machinery enter the natural habitats outside the defined project footprint.
- A Landfall Area Translocation and Restoration Plan should be prepared for the habitats affected by the Project (B1.4 – Black Sea coastal stable dune grassland, B1.6 – *Coastal* dune scrub, and G1.1 – Riparian and gallery woodland).
    - This plan should clearly define the locations and methods for the translocation of sensitive flora species (*C. kilaea, P. obtusifolium*, and *P. maritimum*) and outline the restoration measures to rehabilitate the impacted habitats.
- To achieve the net gain objective, the restoration and translocation plan will also include an Offset Strategy.
- If construction activities need to be carried out in breeding period (April-July) within the B1.6 habitat, which hosts nesting and breeding areas for *Streptopelia turtur* (VU), *Gallinula chloropus* (LC), and *Lanius collurio* (NT), during the breeding season, a nest check should be conducted by a biologist, and any nests identified should be relocated to suitable location.
- The Biodiversity Management Plan (BMP) should be updated to incorporate these mitigation measures.

10.0 CONCLUSION

Based on the review of the Project documentation, meetings with TP-OTC representatives and gap analysis prepared for compliance with IFC PS and EP 4, across the offshore and onshore Areas of Influence, Phase 3 does not introduce new or significant environmental or social impacts.

Updated surveys, covering offshore physical and biological environments, onshore biodiversity, and critical habitats, confirm that baseline conditions remain broadly comparable with those assessed in previous phases. Offshore, natural variability in water quality, sediment characteristics, and biological communities continues to fall within previously documented ranges, with no new critical habitat triggers. Onshore habitat impacts remain confined to a limited footprint within the landfall area, and while direct disturbance to B1.4 grey dunes, B1.6 coastal scrub, and G1.1 riparian woodland will occur, the significance of these impacts will be mitigated through pre-defined translocation, reinstatement, and restoration measures detailed in Landfall Area Translocation and Restoration Plan, Offset Strategy.

The existing Environmental and Social Management System (ESMS) remains robust and appropriate for continued implementation, requiring only targeted updates to integrate Phase 3 specific activities. Contractors and subcontractors remain contractually bound by SGFD's environmental and social requirements, and the new FPU's construction by Wison New Energies will continue under internationally certified management systems.

The Gap Analysis identifies only Low and Medium gaps, primarily related to procedural updates, documentation alignment, and integration of Phase 3 into the existing ESMS. No High gaps were identified. Required actions focus on updating management plans, refining monitoring and mitigation measures, and maintaining regulatory compliance.

To achieve full alignment with Lender requirements, TP-OTC will implement the following key actions:

- *Update all relevant ESMS plans and procedures, including: ESMP, SEP, BMP, Pollution Prevention Plan, Resource Efficiency Plan, Waste Management Plan, OHS Plans, HR and Labor Plans, and Community Health & Safety Plans.*
- *Prepare the Emergency Preparedness and Response Plan (EPRP) for Phase 3 construction and operations.*
- *Quantify Phase 3 Scope 1 and Scope 2 GHG emissions, update the GHG inventory.*
- *Update Biodiversity Management Plan.*
- *Prepare the Landfall Area Translocation and Restoration Plan for affected habitats (B1.4, B1.6, G1.1).*
- *Implement flora translocation and habitat reinstatement measures; apply corridor narrowing, access controls, invasive species management, and breeding-season protections for fauna.*
- *Update the Stakeholder Engagement Plan, including identification of vulnerable groups, disclosure requirements, and ongoing engagement with fishers regarding NAVTEX-related access restrictions.*
- *Update the Influx Management Plan, Human Rights Management Plan, Supply Chain Management documentation, and security-related procedures.*
- *Continue offshore and onshore monitoring aligned with Phase 1 and Phase 2 methodologies, with adjustments for Phase 3 infrastructure.*

- *Obtain and maintain all required permits for construction, dredging, waste management, emissions, and operation.*
- *Review and update transitional risk assessment to reflect recent COP decisions, Türkiye's climate commitments, and energy transition trends.*

In case of any changes of the gap analysis findings, following should be considered:

- *If the Phase 3 FPU design significantly deviates from Phase 2, and/or the capacity increases:*

  i) an alternatives analysis for lower-GHG alternatives and technology selection should be undertaken.

  ii) CCRA should be undertaken for physical risks as well.

- *If restrictions in the marine areas go beyond the existing restrictions, impacts of NAVTEX announcement(s) should be evaluated and engagement with stakeholders, specifically with fishers, should be undertaken as outlined in the SEP and LRP. Further requirements for PS 5 alignment should be evaluated.*

APPENDIX A

ESIA Offshore Physical and Biological Monitoring Report Phase-1 Monitoring 3 & Phase-2 Monitoring 1

APPENDIX B

FPU Layout