TANAP

TRANS ANATOLIAN NATURAL GAS PIPELINE PROJECT

IESC Monitoring Report October 2023

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HOLDS

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Acronyms and Abbreviations

AGI	Above-Ground Installation
AMC	Area Maintenance Center
BAP	Biodiversity Action Plan
BOMP	Biodiversity Offset Management Plan
BOS	Biodiversity Offset Strategy
BScm	Billion Standard Cubic Meters
BVS	Black Valve Station
CH	Critical Habitat
CS	Compressor Station
EBRD	European Bank for Reconstruction and Development
EEC	European Economic Community
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ERT	Electrical Resistivity Tomography
ESAP	Environmental and Social Action Plan
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
EU	European Union
FC	Fully Compliant
GHG	Greenhouse Gas
GIS	Graphical Information System
GPR	Ground Penetrated Radar
GPS	Global Positioning System
H&S	Health and Safety
HQ	Headquarter
HR	Human Resource
HSE	Health, Safety and Environment
IESC	Independent Environmental and Social Consultant
IFC	International Finance Corporation
IFI	International Financial Institutions
IMP	Integrity Mapping Platform
IMS	Integrated management systems
ISO	International Organization for Standardization
KP	Kilometre Point
KPI	Key Performance Indicator

LEP	Land Exit Protocol
LRE	Land Rights Entity
LRP	Livelihood Restoration Plan
MCC	Main Control Center
MoEUCC	the Ministry of Environment, Urbanisation and Climate Change
MP	Management Plan
MS	Metering Station
MSDS	Material Safety Data Sheet
MTI	Medical Treatment Injury
NG	Net Gain
NGO	Non-Governmental Organisation
NNL	No Net Loss
OEMP	Environmental Monitoring Plan for Operations
OHL	Overhead Transmission Lines
OHS	Occupational, Health and Safety
PAP	Project-Affected Person
PBF	Priority Biodiversity Features
PC	Partially Compliant
PEP	Project Execution Plan
PPE	Personal Protective Equipment
PR	Performance Requirement
PS	Performance Standard
QHSE	Quality, Health, Safety and Environment
QHSSE	Quality, Health, Safety, Security and Environment
RAP	Resettlement Action Plan
RETIE	RAP End-Term Impact Evaluation
RoW	Right of Way
SCC	Species of Conservation Concern
SE	Stakeholder Engagement
SEP	Stakeholder Engagement Plan
SME	Subject Matter Expert
SMP	Social Management Plan
SPS	Safeguard Policy Statement
Sustainability	Sustainability Pty Ltd
TANAP	Trans Anatolian Natural Gas Pipeline Project
TAP	Trans Adriatic Pipeline
TARP	Trigger Action Response Framework
TPMC	Third Party Monitoring Company
WB	World Bank

Executive Summary

Sustainability Pty Ltd (Sustainability) is engaged as the Independent Environmental and Social Consultant (IESC) for the Trans Anatolian Natural Gas Pipeline project (TANAP). This year marked the second year of field based monitoring following COVID-19 risks and travel related restrictions. The field assessment was designed as a sampling exercise to assess TANAP against all of the relevant EBRD Performance Requirements and project standards. Due to the size of the TANAP project pipeline and the logistical reality of assessing such a project the site assessment could only be completed for a pre-selected sample of the entire length of the pipeline. This year's assessment was focused on the eastern portion of the pipeline as this has not been assessed since the Operations Phase began. This is in line with previous assessment however it should be noted that this report can only be based on the materials provided and areas visited during the site inspection. Finding no non-conformances does not necessarily represent a fully compliant project – it represents the areas, work, systems, etc. assessed as part of the risk based focused assessment.

The original Project Execution Plan (PEP) described the implementation of the IESC Services for Phase 1 construction works and for operation phase(s) of Phase 0 and Phase 1, which includes assessing the various environmental and social requirements of the International Financial Institutions (IFIs) including World Bank's (WB) Safeguard Policies, TANAP policies and the commitments given in the Environmental and Social Impact Assessment (ESIA) package including the management system documents of both TANAP and its Contractors. The services include the presentation of recommended actions associated with identified non-compliances or areas of improvement.

The PEP presents the implementation arrangements reflected in the IESC's contract, Sustainability's proposal and the outcomes of the Project Kick-Off Meeting.

The PEP had been revised to reflect the changes in the approach for the 2021 remote monitoring and included the addition of an extra year of monitoring in 2022 to validate all of the findings from the past two years. The assessment is still based on appropriate lender codes (FC & PC) and takes into accounts actions completed by TANAP since the last report.

The following sections outline the summary of specific Performance Standards.

PR 1 Monitoring and Reporting

Environmental

Environmental Monitoring and Reporting requirements are defined within the Environmental Monitoring Plan for Operations (TNP-PLN-ENV-GEN-008), as part of the Environmental Management System. TANAP has achieved 100% of target performance for all environmental KPIs during the year to date, except for '*the % of tests/samples compliant with Project standards for effluent discharge*'. Compliance with Project wastewater effluent quality standards appears to be a consistent issue for TANAP, as this was also a reported problem in 2022. Whilst the problems were due to technical issues and appropriate remedial actions were taken, it is recommended that TANAP takes a more proactive approach and reviews the operation and maintenance protocols for the wastewater treatment plants at the relevant Stations, to ascertain whether additional/alternative measures could be taken to avoid further issues.

The findings of internal environmental compliance reviews partially corresponded with the IESC's observations. Non-conformances relating to waste and materials management practices (including hazardous waste and materials) were identified. However, all the findings were minor (e.g. inadequate labelling of containers and incorrect storage of chemicals), and can be/have already been easily addressed.

Pipeline integrity management relies on a combination of monitoring conducted along the entire pipeline route every 15 days by 10 RoW Patrol Teams, annual geo-hazard surveys undertaken by the new Contractor Fugro Sial (under the leadership of subject matter experts, relevant academics, and experienced engineers), aerial photogrammetric surveys (by plane and drone), and the development and use of high-resolution 3D terrain models. All survey results are input to the Integrity Mapping Platform that enables the Integrity Management Department to have immediate access to, and analyse, live information relating to any identified risks to the integrity of the pipeline. Going forward, TANAP is planning to employ additional geo-physical investigation methods to help detect and monitor the formation and extent of any underground cavities, sinkholes etc. in karstic regions. These methods include both ground penetration radar (GPR) and multi electrode electrical resistivity tomography (ERT).

PR 2 Labour and Working Conditions

TANAP's operational organisation is in place, alongside appropriate policies, management plans and procedures to recruit, select, manage and support the workforce. Adequate protections for the workforce, including equal opportunity and non-discrimination, are provided through the Human Resources Management Plan.

Social Inductions/Refresher trainings have continued to be organised for workers by the Site Social Impact Specialists; as of the end of 2022 all trainings were completed for all workers and during 2023 only new workers underwent the training.

Only 1 worker complaint was received relating to unfair dismissal. The complaint was closed. No grievances have been raised about security personnel conduct.

PR 3 Resource Efficiency, Pollution Prevention and Control

Following the previous site visit in 2022, the IESC observed that there were no environmental KPIs relating to resource efficiency and as such, there was no formal requirement for TANAP to measure or demonstrate performance (or improvements in performance) in relation to this element of the Lender's Standards. The Environmental Monitoring Plan for Operations has consequently been revised to include KPIs and targets in relation to both water and energy consumption. TANAP has declared that 2023 is the 'Year of Sustainability', and the targets to achieve a 1% reduction in the total volumes of electricity and water consumed per capita at Ankara Head Office relative to the previous year reflect a public commitment to achieve annual improvements in resource efficiency.

TANAP has achieved 100% target performance for all pollution prevention KPIs (other than for wastewater quality, as outlined above). This includes 0 complaints received relating to noise, 100% of tests being compliant with Project standards for air emissions, 0 spills to land over 50 litres, and 0 spills to water. As such, the IESC is assured that the operational management systems, plans and procedures in place are generally adequate to ensure that direct negative environmental impacts of TANAP's operations are being avoided/limited.

Greenhouse gas emissions are being calculated and reported in line with Project commitments. Total annual GHG emissions for 2022 were 35% higher than 2021. This is mainly due to an increase in mobile combustion of 98% following the resumption of site visits that were suspended during the Covid-19 pandemic. Furthermore, due to a 40% increase in the amount of gas flow transferred to Europe in 2022, the CS1 and CS5 main compressors

worked with an increased flow regime compared to 2021. GHG emissions from stationary Natural Gas combustion also increased compared to 2021. Nevertheless, greenhouse gas emissions per quantity of transmitted natural gas in 2022 only increased by 9% compared to the previous year. This increase is not an unusual outcome because 2022 was the commencement year of TANAP operations during the plateau period. Therefore, it will be considered as the year providing the reference baseline data when tracking the real change in GHG emissions in the following years. A decrease is expected compared to the 2022 baseline data with the improvement works and additional measures to be taken.

There are on-going geo-hazard risks and impacts across the Project that will need to be monitored and managed on a continuous basis, especially where the pipeline passes through more challenging mountainous and karst landscapes. The IESC is assured that the TANAP Lead Integrity Engineer for Geohazards has an excellent appreciation of the full range of geo-hazard risks across the Project, having been involved in the initial ground investigations, and route design and construction processes. Furthermore, the scope and frequency of geo-hazard monitoring being undertaken are considered by the IESC to be appropriate and adequate for the levels of geo-hazard risks identified. To date, this has ensured that any immediate risks to the integrity of the pipeline have been detected and effectively addressed.

PR 4 Health and Safety

OHS

The IESC conducted a focused, risk-based assessment of OHS at TANAP. There were no recordable incidents for the period under review, and near-miss incidents did not represent any failings in core OHS systems or procedures. TANAP has a robust internal audit process, and the close out rate of corrective actions was 90% at the time of the field visit.

Road safety remains one of the highest OHS risks for TANAP. The IESC commends TANAP's road safety management initiatives and the level of validation.

A physical assessment of OHS compliance was conducted at CS3/AMC. The site had a very high level of housekeeping and general OHS considerations were beyond international best practice. The IESC commends the extremely high quality of OHS signage, labelling, storage, and organisation. A minor non-compliance regarding the incompatible storage of flammables and poisons was discovered but quickly remediated.

There was a further improvement in the scheduling and conducting of emergency exercises which is commended. 19 emergency response exercise reports were sampled, and these represented a good variety of scenarios and locations.

Overall, TANAP has a strong OHS performance. The IESC commends TANAP's commitment to OHS and its efforts to continually improve its OHS management system.

Social

Disclosure and distribution of the Community-Based Emergency Response Plan (CBERP) have been completed in AGI-affected settlements through community informative meetings. Disclosure meetings with pipeline-affected settlements have commenced in some areas and printed information are provided at all meetings. Even though the CBERP have not yet been rolled out in the communities visited as part of this audit there was a clear communication procedure that would be followed in case on an emergency. . Current emergency contact information (including mobile phone numbers rather than landlines) is also being gathered to ensure TANAP has the capability of direct communications with relevant stakeholders in the event of an emergency. As was evident during the community meetings the Site Social Impact Specialists have ongoing communication with the affected communities.

PR 5 RAP and LRP

Implementation of corrective actions identified under the RAP End-Term Impact Evaluation (RETIE) are continuing. Corrective Action 1 relates to outstanding expropriation payments; this was facilitated by communications with BOTAS, however, additional actions could be considered on this topic. Corrective actions 2 and 3 relate to reinstatement and land exit processes which are being addressed concurrently. Actions are ongoing to log reinstatement-related issues as a means of clearing legacy construction contractor issues. Issues have been raised and complaints registered relating to reinstatement, stones in the parcel, expropriation and slope barriers. Corrective actions are being implemented, according to harvest and other seasonal constraints. Corrective actions 4 and 5 relate to information on restrictions and community contacts during operations. Information continuous to be shared and often refresher sessions are held. TANAP is commended for progressing these actions in a systematic and thorough manner.

PR 6 Biodiversity conservation and sustainable management of living resources

The Biodiversity Action Plan (BAP) requirements for critical habitat areas and Species of Conservation Concern (SCC) monitoring post construction are ongoing and being implemented as described within the BAP. TANAP has continued its monitoring of high-risk areas along the OHL to identify risks to bird species from the OHL operation. Due to bird carcasses being found during 2023, it is recommended that bird flight deflectors are fitted to the OHL and that monitoring continues for a further two years.

The operations biodiversity monitoring works are being undertaken by ASSYSTEM. The faunal and botanical reports have been reviewed and found to be well written and comprehensive. The review included the 2022 botanical report and the 2022 aquatic survey reports had not been received at the time of the 2022 IESC review.

The Site-specific Biodiversity Offset Management Plans implemented by TANAP. The Forest Offset Management Plan is progressing very well, and the General Directorate of Forestry is pleased with the outcome too. The Steppe Offset Management Plan is also being implemented, with a strong emphasis on social liaison, which has enabled a high “buy-in” to the project, increasing its likelihood of success, as grazing regimes are changed.

As with the 2022 report, the main recommendations made by IESC for TANAP in this report relate to reducing the residual impacts of the project, through the monitoring of the right of way, and the implementation of remedial actions (seeding/planting) where required. A full EUNIS survey of the right of way (scheduled in 2024), can then be used to update the residual impacts table (habitat loss) provided in the BOS. As vegetation stabilises on the right of way, and habitats become established over time, it is likely that the residual impacts will decrease, from those currently predicted. For the Lenders Group, a simple monitoring strategy should also be applied to the Steppe Offset Management, so that changes in species richness or percent cover of botanical species can easily be determined and compared between years. This information can then be compared against the updated residual impacts, allowing the project to determine is no net loss/net gain has been achieved especially regarding steppe habitat.

PR10 Stakeholder Engagement and Disclosure

Key engagement topics at this phase of operations relate to: land use conditions; land use violations and permitting; community health and safety; and maintenance activities.

Landowners and users are being advised/reminded about restrictions prior to any violations through informative meetings held along the pipeline route. The Social Impact team is supporting landowners/land users to make the necessary permit applications to TANAP to avoid potential land use violations mostly relating to irrigation channels.

Maintenance activities increase in the summer period, and TANAP's SI team reports that their work includes provision of information about the type and duration of maintenance work. The TANAP Operation Phase Land Access Management Procedure (Land Entry, Land Exit and Compensation) is the key guide to access, compensation and damage prevention. The relevant procedure TNP-PCD-LAC-GEN-004-P6-2 has also been updated to reflect the recommendation that increased vulnerability be identified and addressed appropriately.

Third party monitoring has commenced for the operations phase, carried out by consultant, ASSYSTEM, on operational delivery of engagement, grievance management and community health and safety commitments. Additionally, internal reviews are also conducted, with positive results and improvements identified. Third party assessments did prioritise review of the eastern section of the pipeline to account for how TANAP is performing in this area.

Grievance KPIs are above target for the most recent two quarters.

Summary of concerns and recommendations

The following table outlines the key findings and recommendations of this report. The Table includes open items with recommendations. These items are fully explained in the relevant sections. The first column of the table shows the reference number as X.Y where X is the PR number and Y is the issue number. The reference number is followed by the section in which the issue is expanded upon. For reference, the summary findings table from last year's report with closed items has been attached in Appendix B.

Table 1 - Summary Findings

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
1.1 (2.3.4.7)	Issue for consideration: Annual independent third party	Monitoring of social commitments of the Project by a third	FC	PR1 / PS1 Project	**Closed**

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
	ESIA monitoring is advised to be conducted in the eastern section of the pipeline (i.e. east of the MCC).	party is conducted bi-annually; it is suggested that this be conducted both in the east and western sides of the pipeline, given substantial differences in issues and operating context and ensure that benefits of third-party assessments can be fully realised by TANAP. Both IESC and TPMC reviews were carried out in the western sections in 2022 to date.		Monitoring and Reporting	
2.1 (2.5.3.4)	Hazardous waste containers at CS3 (AMC) were not all clearly labelled, in addition to the incompatible storage of flammable and poisonous materials.	All employees responsible for the storage of hazardous materials and hazardous waste at CS3 (AMC) should be given refresher training, and additional checks carried out over the next 6 months by the Environmental Department to	PC	PR2 / PS2 OHS PR3 / PS3 Pollution Prevention and Control	Open

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
		ensure the correct hazardous materials/waste storage measures are being implemented.			
3.1 (2.3.4.4)	There are no KPIs in the OEMP relating to resource efficiency. As such, there is no requirement for TANAP to measure or demonstrate performance (or improvements in performance) in relation to this element of PR 3.	TANAP should revise the OEMP to include appropriate KPIs in relation to water and energy consumption.	FC	PR3 / PS3 Environmental Monitoring Plan for Operations	**Closed** – TANAP has revised the OEMP to include KPIs and targets for both electricity and water consumption
3.2 (2.4.3)	Soil erosion issues at KP 1518+302 are being exacerbated by surface water run-off following the natural contours of the slope towards the gully running parallel to the lateral slope of the RoW. gully at the foot of the lateral slope. This is within Government controlled Forestry land and TANAP are not permitted to divert	TANAP attempts to negotiate with the relevant Government Department to allow run-off to be discharged into the natural gully.	FC	PR3 / PS3 Resource Efficiency, Pollution prevention and Control;	**Closed** – TANAP has obtained agreement from the Directorate of Forestry to divert run-off from the RoW into the natural gully.

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
	water from the RoW into this gully.				
3.3 (2.3.5.1)	Exceedances of Project wastewater quality standards at various TANAP Stations due to technical issues	Review the operation and maintenance protocols for the wastewater treatment plants at MS1, CS5/MS2 and the MCC, to ascertain whether there are measures that could be implemented to avoid further effluent quality failures at these Stations	FC	PR3 / PS3 Resource Efficiency, Pollution prevention and Control;	Open
6.1 (2.10.1.1)	TANAP has not observed any bird carcasses at BVS21 thought to have died due to collision with power lines over the last three years of monitoring (2020, 2021 and 2022) since the initial 16 carcasses were observed in 2019. In 2022 the IESC recommended that TANAP consider the need for continued bird monitoring.	It is therefore recommended that bird flight diverters (BFDs) are installed on the line, to make it more visible to birds, so that they can see it and take evasive actions earlier, to avoid collision. There are many types of BFDs, some of which are suitable for installation on active power lines, through the use of	FC	PR6 / PS6 Implementation of Mitigations	Open

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
	In 2023 , five dead birds were found under the transmission line at BVS21	a drone. The bird diverters should be installed on the line, before the spring movement of birds or as soon as practicable, and the efficacy monitored for a further two years.			
6.2 (2.10.5.1)	Even though the aftercare monitoring period has now been completed for Lot's 1 – 4, TANAP have informed the IESC that ongoing monitoring will continue, with the ROW team patrolling the pipeline and reporting on areas where remedial measures are considered necessary, or where incidents have occurred.	The IESC continues to advise that this should continue for the lifetime of the project.	FC	PR6 / PS6 Monitoring	Closed

1. Introduction

1.1 Project Context

TANAP Doğalgaz İletim A.Ş. (TANAP) has engaged Sustainability Pty Ltd (Sustainability) for the delivery of Independent Environmental, Social and Occupational Health and Safety Monitoring and Consultant Services (IESCS) for the Trans Anatolian Natural Gas Pipeline (the Project), effective from 24 July 2018. The first IESCS monitoring visit undertaken for this assignment occurred in Türkiye from 8 - 12 October 2018. This report presents the findings of the seventh monitoring event which consisted of a site visit and document review. The site visit was completed from 18 – 22 September 2023. Sustainability had previously been engaged by the EBRD as the Independent Environmental and Social Consultant to support financing requirements and had completed environmental and social due diligence in 2016 and six previous annual monitoring visits from 2017 – 2022.

The TANAP Project has completed a 1,811km pipeline to facilitate the transport of natural gas produced from the Shah Deniz Phase II development in Azerbaijan to Türkiye and Europe. The Project has been developed by a group of shareholders who currently comprise of “Southern Gas Corridor” Closed Stock Joint Company (51%), BOTAS (30%), BP (12%) and SOCAR Türkiye Enerji A.S. (STEAS) (7%) and are herein referred to collectively as the “Sponsors”.

The Project runs from the Georgian border, beginning in the Turkish village of Türkgözü in the Posof district of Ardahan, and passes through 20 provinces, ending at the Greek border in the Ipsala district of Edirne. Two off-take stations are located within Türkiye for national natural gas transmission, one located in Eskişehir and the other in Thrace. With 19km running under the Sea of Marmara, the main pipeline within Türkiye reaches a total of 1,811km, along with off-take stations and above-ground installations.

The TANAP project has now entered Phase 1 of operations after having completed Phase 0 of operations.

Phase 0

- Inauguration Ceremony of TANAP Phase 0 was held in Eskişehir CS5-MS2 site on 12 June 2018.

- Gas to Eskişehir facilities (1.338 km long 56" dia P/L + MS1 + MS2 + 39 BVSs + 6 PSs + CS5 L) are operational as of 30 June 2018.

- Commercial Operations have started as of 30 June 2018 as planned. Since its commencement date activities have been conducted and continue in a safe and efficient manner.

Phase 1

- Inauguration Ceremony of TANAP Phase 1 was held in Edirne/Ipsala MS4 site on 30 November 2019.

- Gas to Europe facilities (454.04 km long 48" dia P/L + 2 x 17,5'' dia offshore P/L + MS3+ MS4 + 10 BVSs + 5 PSs + CS1 + CS5) are ready to start commercial operation of 1 July 2019.

- Commercial Operations have started as of 31 December 2020. Since its commencement date activities have been conducted and continue in a safe and efficient manner.

The Project Execution Plan (PEP) describes the implementation of the IESC assessments for Phase 1 construction works and for operation phase(s) of Phase 0 and Phase 1, which includes assessing the various environmental and social requirements of the International Financial Institutions (IFIs) including World Bank's (WB) and EBRD's Safeguard Policies, TANAP policies and the commitments given in the ESIA package including the management system documents of both TANAP and its Contractors. The services include the presentation of recommended actions associated with identified non-compliances or areas of improvement.

This PEP presents the implementation arrangements reflected in the IESC's contract, Sustainability's proposal and the outcomes of the Project Kick-Off Meeting. The objective of the PEP is to both guide implementation and communicate the delivery approach to the key stakeholders. The PEP is adaptive and will be revised as required to ensure effective delivery of services.

1.2 Scope of Work and Objectives of the IESC

The scope of the IESC's activities is specific to Phase 1 construction works and for operation phase(s) of Phase 0 and Phase 1. The services require an independent assessment of the

Project's compliance with relevant local and international legal requirements, the various environmental and social requirements of the International Financial Institutions (IFIs), TANAP policies and the commitments given in the ESIA package including the management system documents of both TANAP and its Contractors. The services include the presentation of recommended actions associated with identified non-compliances or areas of improvement.

The key objectives are to:

- Provide an independent assessment of the Project's compliance with Project commitments, including relevant local and international legal requirements and IFIs' Standards, Requirements and Guidelines; and
- Present recommended actions associated with identified non-compliances or areas of improvement.

To achieve these objectives, the IESC undertakes the role of identifying, monitoring and verifying:

- The implementation of specific provisions, commitments and the overall objectives of the Project ESIA, BAP, BOS, SEP, RAP, LRPs and other related Project documents;
- Implementation of mitigation measures, as documented in the Commitments Register, Environmental and Social Management Plans, Health and Safety Plans and relevant procedures to address material risks and issues associated with constructions works and with Phase 0 and Phase 1 of operations;
- Material changes in design and operations, which have been issued and assessed in line with the Environmental Management of Change Procedure (TNP-PCD-ENV-GEN-002); and
- The implementation of Legal, Political and Institutional framework as presented in Chapter 4 of ESIA Report (TNP-REP-ENV-GEN-002) considering the current updates and relevant IFIs' Standards, Requirements and Guidelines.

1.3 Project Status

At the time of the monitoring visit (18 – 22 September 2023), the construction phase of the Project was complete in all Lots and associated AGIs (Above Ground Installations). Phase 1 Main Stations (i.e. CS1, CS5, MS3 and MS4) were mechanically complete by 27.04.2019 whereas technical hand over dates were 30.06.2019 for MS3 and MS4, and 30.09.2019 for CS1 and CS5. Phase 1 Linefill activities (48 inch section) from CS5 to MS4 have been successfully completed as of 15 June 2019. Upon completion of the certification process as per the Joint TANAP-TAP Linefill Procedure, hydrocarbon was introduced into the TANAP-TAP Interconnection Pipeline on 26 of November 2019 and the pipeline was pressurized up to 30 bar on 26 of November 2019. TANAP – TAP Interconnection Pipeline Linefill activity has been completed on 26 November 2019. The Inauguration Ceremony of TANAP Phase 1 was held in Ipsala MS4 site on 30 November 2019. Accordingly, TANAP notified the Shipper that the system was ready for the commencement of commercial deliveries to TAP by the end of November 2019.

A summary of milestone events is outlined below:

Operation Phase 0

- 1338.85 km of 56” pipeline completed
- 39 Block Valve Stations (BVS) completed
- 6 Pig Stations (PS) completed
- 2 Metering Stations (MS) completed
- 1 Offtake Compressor Station (CST)
- Inauguration Ceremony of TANAP Phase 0 was held in Eskişehir CS5-MS2 site on 12 June 2018.
- Gas to Eskişehir facilities (1338.85 km long 56” dia P/L + MS1 + MS2 + 39 BVSs + 6 PSs + CS5 L) are commercially operational as of 30 June 2018.
- BOTAS Second Contract Year was successfully completed by 30 June 2020 with 100% operational efficiency.

Operation Phase 1

- Gas to Europe facilities (incorporating 454.04 km long 48" diameter pipeline and 18.78 km long 2 x 36'' diameter offshore pipelines, MS3 + MS4 + 10 BVSs + 5 PSs + CS1 + CS5); all Metering, Block Valve, Pigging and Compressor Stations were mechanically complete as of 28 December 2018.
- TANAP and TAP pipelines connected.
- TANAP-TAP Interconnection Pipeline cleaning pig activity completed on 21st June 2019.
- TANAP-TAP interconnection pipeline was purged with N2 and filled with hydrocarbon on 26 October 2019.
- Phase 1 Linefill activities (48inch section) from CS5 to MS4 have been successfully completed as of 15 June 2019.
- Offshore Pipeline Construction
    - 2 parallel 36" offshore pipelines completed
    - 4 Fibre Optic Cables completed
    - 24 Crossings completed
- Phase 0 and Phase 1 facilities have been handed over to TANAP Operations and have implemented the following Control of Work operational procedures as of 28 October 2019:
    - Operations Permit to Work;
    - Energy Isolation; and
    - H&S Risk Assessment and Management.
- TANAP provides transit services for TAP Pipeline Linefill and Commissioning activities since 06 February 2020 under TAP Pipeline Linefill and Commissioning Framework Agreement dated 02 December 2019

- Commercial Operations for Phase 1 started as of 31 December 2020.
- As of 31st of August 2023, 3.78 BScm out of 23.37 BScm gas has been successfully transported to Türkiye in 2023
- As of 31st of August 2023, 7.56 BScm out of 27.05 BScm gas has been successfully transported to Europe in 2023.

1.4 Applicable Project Standards

International Lender Financed Projects are expected to be designed and operated in compliance with good international practices relating to sustainable development. TANAP adhere to relevant IFIs' Standards, Requirements and Guidelines including:

IFC Performance Standards (2012)

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts;
- Performance Standard 2: Labour and Working Conditions;
- Performance Standard 3: Resource Efficiency and Pollution Prevention;
- Performance Standard 4: Community Health, Safety, and Security;
- Performance Standard 5: Land Acquisition and Involuntary Resettlement;
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; and
- Performance Standard 8: Cultural Heritage.

IFC Environmental, Health and Safety (EHS) Guidelines, including EHS General Guidelines (2007)

EBRD Environmental and Social Policy and Performance Requirements (2014)

- PR1 – Assessment and Management of Environmental and Social Impacts and Issues;

- PR2 – Labour and working condition;
- PR3 – Resource Efficiency, Pollution prevention and Control;
- PR4 – Health and safety;
- PR5 – Land acquisition, involuntary resettlement and economic displacement;
- PR6 – Biodiversity conservation and sustainable management of living resources;
- PR8 – Cultural heritage; and
- PR10 – Information disclosure and stakeholder engagement.

World Bank Safeguard Policies

- OP 4.01 Environmental Assessment;
- OP 4.04 Natural Habitats;
- OP 4.09 Pest Management;
- OP 4.36 Forestry;
- OP 4.11 Physical Cultural Resources; and
- OP 4.12 Involuntary Resettlement.

Equator Principles (2013)

- Principle 1: Review and Categorisation;
- Principle 2: Environmental and Social Assessment;
- Principle 3: Applicable Environmental and Social Standards;
- Principle 4: Environmental and Social Management System and Equator Principles Action Plan;
- Principle 5: Stakeholder Engagement;

- Principle 6: Grievance Mechanism;
- Principle 7: Independent Review;
- Principle 8: Covenants;
- Principle 9: Independent Monitoring and Reporting; and
- Principle 10: Reporting and Transparency.

As noted in the executive summary and Section 1.8 of this report, the site assessment was an indicative snapshot of the entire project and does not assess against all of these requirements. The findings in this report reflect only what was sampled and provided during the document request.

1.5 Sources of Information

For this year's assessment monitoring included document review and presentations as well as a physical site visit. Key documents were supplied by TANAP including presentations to specialists at Sustainability. Further documentation was provided immediately following the presentations as requested by the IESC team to allow clarification of the presented material. A full list of reviewed documents can be found in Appendix A of this report. The primary sources for information accessed for this review included, but was not limited to:

- In person, site based monitoring across a selected range of locations across the TANAP project.
- Presentations prepared by TANAP teams focused on Overall Progress in Operation Environment, Social, OHS and biodiversity
- Supplementary environmental and social assessments undertaken in accordance with Project management of change processes;
- Other relevant Health, Safety, Environmental and Social materials including HSE statistics, incident reports, external monitoring reports and audits, surveys, grievance registers and additional assessments;

- Environmental and social monitoring reports completed by Contractors, third party monitoring service providers and TANAP;
- Information from site inspections and interviews with TANAP personnel, Contractors and stakeholders;
- Patrolling reports, Training Records, letters and other documents outlining the environmental monitoring of sites during the operational phase;
- Environmental and Social Management Systems (ESMS) for the operating phase including environmental social and H&S procedures.
- Various offset management plans for specific offset areas;
- Interviews with Project Affected Persons (PAPs); and
- Monitoring reports from previous years as well as an Action Update Status document provided by TANAP outlining progress on previous recommendations.

1.6 Site Assessment Attendance

The site assessment was conducted from the 18th to 21th September 2023 by the IESC, TANAP and EBRD. The team members of the IESC were:

- Heath Thorpe: Independent Consultant Team Project Director and OHS Specialist;
- Claire Penny: Independent Consultant Team Environmental Specialist;
- Nicola Faulks: Independent Consultant Team Biodiversity Specialist;
- Herman Roos: Independent Consultant Team Social, labour and Cultural Heritage Specialist; and
- Aleksa Marinovic: Independent Consultant Team Project Manager.

1.7 Presentations Site Assessment Schedule

In summary, the following activities were undertaken during the site assessment:

Table 2 – Site Assessment Schedule

Sessions	Scope
DAY - 1	**September 18, 2023 Monday**
Welcome & Opening Presentation	Opening speeches Approach/methodology and focus of this Monitoring
Overall Progress	Safety Moment Overall updates (Works in Operation Phase) Environment/OHS/Social/Biodiversity Presentations
Travel to Erzurum	
DAY - 2	**September 19, 2023 Tuesday**
Meeting with the Local Forest department Visit to biodiversity area	Overview (enviornment team)
Erzurum/Aşkale Erzurum/Aşkale/Gökçebük village	Overall review of stakeholder engagement activities (social team)
Erzincan/Çayırlı/Bölükova village	Overall review of stakeholder engagement activities (social team)
Travel to Erzincan	
DAY - 3	**September 20, 2023 Wednesday**
Erzincan/Refahiye/Üçören village	Overall review of stakeholder engagement activities (social team)
Visit to KP616+172 (Verification) BVS19	Verification site (including RVX4_00276) and BVS19 (environment team)
Sivas/Zara/Şeymerzuban village Sivas/Hafik/Durulmuş village	Overall review of stakeholder engagement activities (social team)
Visit toKP657+596 (karstic area)	Verification Site Visit (environment team)
Biodiversity Offset Area visit	Site visit (environment team)
Travel To Sivas	
DAY – 4	**September 21, 2023 Thursday**
Sivas/Yıldızeli/Merkezyeniköy village	Overall review of stakeholder engagement activities (social team)
As-Built KP702+500 (erosion control area)	Verification Site Visit (environment team)

CS3/AMC	<u>TANAP Team:</u> ● Site Induction ● Overall Site Presentation ● Site Activities <u>IESC Team:</u> ● EBRD/IESC 2023 Visit Closure Meeting with TANAP ● presentation of preliminary findings ● overall evaluation
DAY – 5	**September 22, 2023 Friday**
Flight to Istanbul	

1.8 Report Limitations and Assumptions

Due to the size of the TANAP project pipeline and the logistical reality of assessing such a project the site assessment could only be completed for a pre-selected sample of the entire length of the pipeline. This is in line with previous assessment however it should be noted that this report can only be based on the materials provided and areas visited during the site inspection. Finding no non-conformances does not necessarily represent a fully compliant project – it represents the areas, work, systems, etc assessed as part of the risk based focussed assessment. It should be noted that some sections of the pipeline have not been assessed by the IESC. The IESC did not physically visit KP 1518+302, and therefore is unable to verify that the rectifications and repairs made have been effective in addressing soil erosion issues at this site (although the 2023 SME Land and Slope Erosion Survey Report provided following the site visit suggests that there are now only minor issues at this site).

2. Findings and Observations

2.1 Classification Criteria for Review Findings

Project compliance and performance against the applicable Standards was considered by the IESC in terms of material risk to the Project and the IESC's confidence in the assessment of compliance following review of information available. The compliance classification of each topic will be determined as outlined in Table 2.

Table 3 - Compliance Classification

NOP	**No Opinion Possible:** The IESC was not able to determine an opinion e.g. the topic was not a focus of the audit; due to a lack of information; the inability to remotely visit a certain site; or the specific stage the Project is at.
Level of Non-Compliance (NC):	
EC	**Exceeding Compliance:** The Project has gone beyond the expectations of relevant IFI requirements / standard / principle. IFIs should be able to use projects rated EC as a role model for positive Environmental and Social effects.
FC	**Fully Compliant:** The project is fully in compliance with relevant IFI requirements / standards / principles, and local environmental, health and safety policies and guidelines.
PC	**Partially Compliant:** The project is not in full compliance with relevant IFI requirements / standards / principles, but has systems, processes or mitigation measure in place which are working towards addressing the deficiencies.
MN	**Materially Non-Compliant:** The project is not in material compliance with relevant IFI requirements / standards / principles, and the systems, processes and mitigation measures in place are not working towards addressing the deficiencies.

2.2 Environmental, OHS and Social Review

This Monitoring Report documents the findings and observations resulting from the site assessment from 18 - 22 September 2023 and the additional documentation provided to the IESC by TANAP. This report also factors in the review of recently drafted HSE documentation and construction environmental and social management plans and procedures.

A summary of the classification of Project compliance with the Applicable Standards that has been allocated to each topic is presented in Table 3 below.

Table 4 - Project Compliance with the Applicable Standards

Topic Heading	Compliance Criteria
PR/PS1 Environmental and Social Assessment	
Compliance with Local Legislation	FC (where sampled)
Status of ESAP	FC
Environmental and Social Assessment	FC
Environmental and Social Policy	FC
Environmental and Social Management System	FC
Organisational Capacity and Commitment	FC
Project Monitoring and Reporting	EC[1]
Assessment and management of Change	FC
PR/PS2 Labour and Working Conditions	
Human Resource Policies and Working Relationships	FC
Protecting the workforce	FC
OHS	PC
Retrenchment	FC
Grievance mechanism	FC
Security Personnel Requirements	FC
PR/PS3 Resource Efficiency and Pollution Prevention	
Resource Efficiency	FC
Pollution Prevention and Control	PC
Greenhouse Gases	FC
Hazardous Substances and Materials	FC
PR/PS4 Community Health Safety and Security	
Infrastructure, Building, and Equipment Design and Safety	FC
Hazardous Materials Safety	NOP
Traffic Safety	FC
Exposure to Disease	FC
Natural Hazards	NOP
Emergency Management	EC
PR/PS5 Land Acquisition, Involuntary Resettlement and Economic Displacement	
Consultation	EC
Compensation	FC
Grievance	FC
Resettlement and Livelihoods Planning and Implementation	FC
Monitoring	FC
PR/PS6 Biodiversity	
Assessment and Identification of Impacts	FC
Biodiversity Management Planning	FC
Implementation of Mitigations	FC
Conservation of Biodiversity	FC
Restoration and Rehabilitation	FC
Monitoring	FC

[1] The IESC considers that TANAP has exceeded compliance in relation to geo-hazard and environmental monitoring and this is reflected in this classification. This does not extend to monitoring in relation to social, OHS or Biodiversity risks and impacts.

PR8 Cultural Heritage	
Assessment	NOP
Consultation	NOP
PR10 Disclosure and Stakeholder Engagement	
Stakeholder Engagement Planning	FC
Grievance management	FC
Information Disclosure	FC

2.3 Environmental and Social Assessment

2.3.1 Compliance with Local Legislation

There were no warnings or penalties issued for any of the Lots, stations, MCC, offshore section of the pipeline or Scada/Telecoms system in relation to failures to meet the requirements of the relevant environmental authorities since the previous site visit. All required declarations to the Ministry of Environment, Urbanisation and Climate Change (MoEUCC) have been made by TANAP in accordance with relevant Regulations (e.g. the Waste Management Regulation and Regulation on Monitoring of Greenhouse Gas Emissions).

2.3.2 Environmental and Social Policy

TANAP's Integrated Management System Policy can be found online[2] specifying the company's higher level commitments to health, safety, the environment and communities, to be managed through an ISO-compliant management system. Additionally, the Social Policy[2] remains a publicly disclosed document reflecting the commitment to effective management of community relations and grievance management, meeting current best industry practices during operations. Training is to be provided to employees and contractors on the Social Policy. The Policy can also be found on the TANAP website[3].

2.3.3 Environmental and Social Management System

An Operational Environmental and Social Management System (ESMS) has been developed and is being implemented by TANAP, including relevant Environmental Plans and Procedures. Three environmental Plans have recently been revised/updated to reflect changes in operational practice and previous IESC recommendations. These include:

- Pollution Prevention Management Plan: updated to incorporate a revised list of air emissions sources for the Project.

[2] https://www.tanap.com/tanap-project/integrated-management-system/
[3] https://www.tanap.com/tanap-project/social-policy/

- Environmental Monitoring Plan for Operations: revised to include additional resource efficiency KPIs.
- Ecological Management Plan for Operations: revised to include additional Critical Habitat.

TANAP's social management and monitoring plans are in place for the Operations phase. These include: the Social Action Plan for Operations; the Social Monitoring Plan for Operations; Stakeholder Engagement Plan[4] (and associated annexes); and Grievance Management Procedure[5]. The recently updated Operation Phase Land Access Management Procedure (Land Entry, Land Exit and Compensation) is the key procedure now in place for land access. The RAP End-Term Impact Evaluation (RETIE, see Section 2.7.4) has been completed and implementation of corrective actions are ongoing.

2.3.4 Organisational Capacity and Commitment

2.3.4.1 Environment

There have been some changes to the composition of the Environmental Management Team since the previous site visit in 2022, illustrated in Figure 2.1. There was one vacant Senior Environmental Engineer position, that has now been filled by Yücel Suat Güngör. A further, female Environmental Engineer is due to start in September 2023, as a direct replacement for the previous occupant of this role. An assistant Environmental Specialist (Nihan Nur Karakaşlı) also started in March 2023. The TANAP Environment Department continues to be overseen by the QHSSE Director (Fatih Erdem), to whom the Environmental Manager (Berna Karaduman) reports directly. The Environmental Manager is responsible for the two Senior Environmental Engineers and Assistant Environmental Specialist. In addition, there are environmental personnel based at the various operational Stations (CS1/MS1, CS3, MCC, CS5/MS2 and MS3 & MS4) and in the Project and Modifications Department, who whilst reporting administratively to the site managers, functionally also report to the Environmental Manager.

[4] SEP Rev. P6-1, last updated 23.08.2022
[5] Grievance Management Procedure, Rev P6-2, last updated 19.08.2022

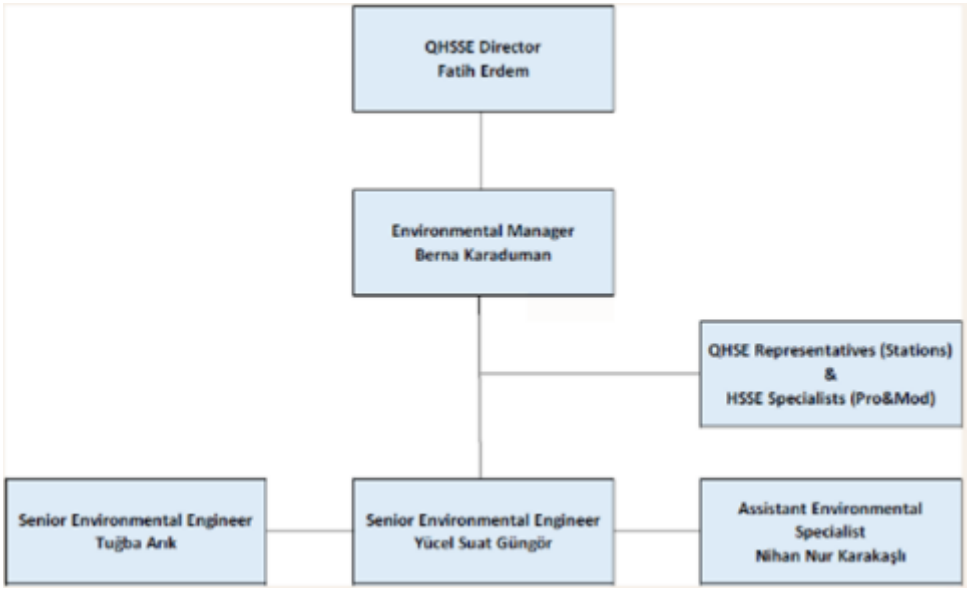

Figure 2.1 Environment Department Structure

2.3.4.2 OHS

The HS department structure including site personnel is noted is noted in Figure 2.2 below.

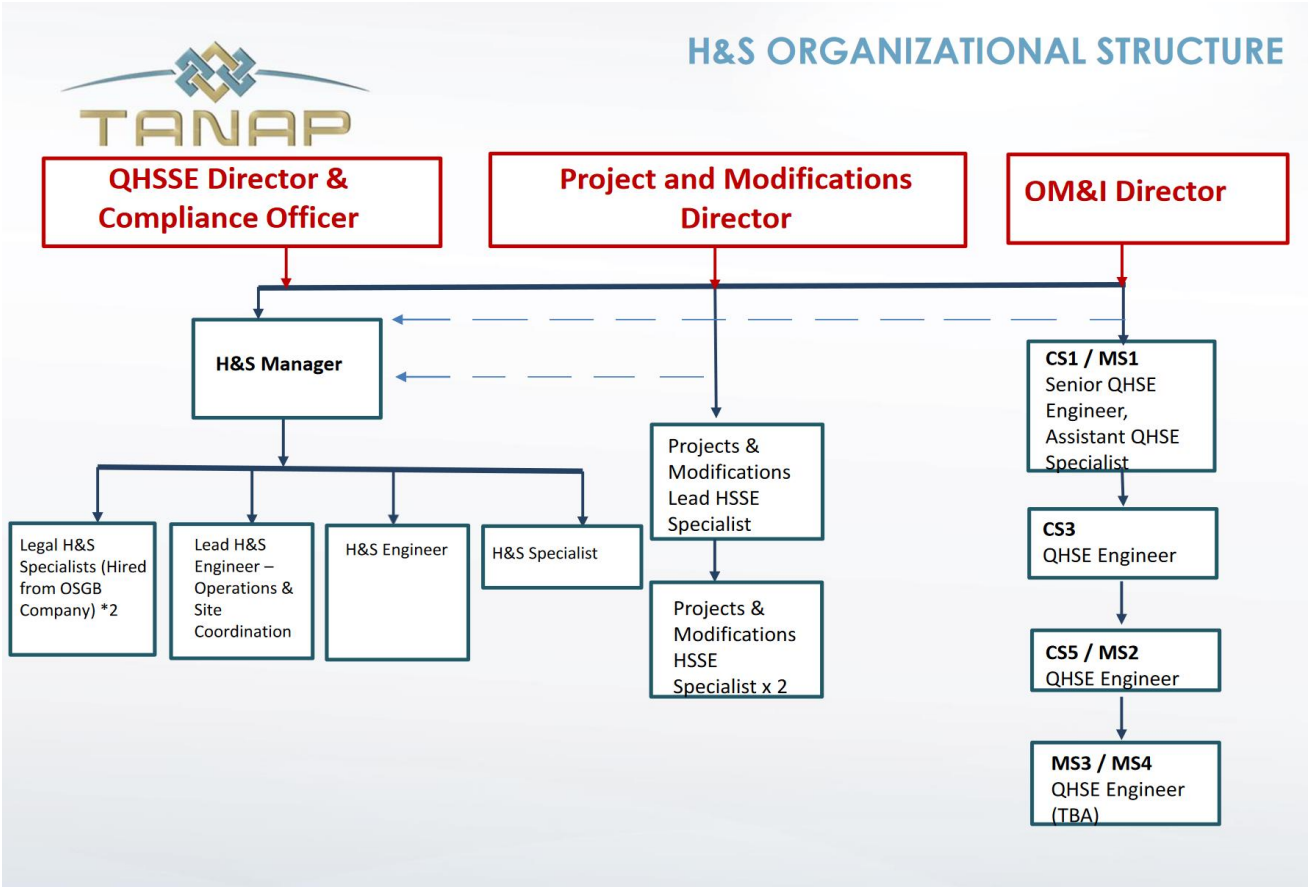

Figure 2.2 HS structure

The QHSE Engineers have received formal and hands-on training across a significant number of OHS aspects including:

- Working at heights
- Energy isolation authority
- Confined space entry
- Chemical awareness
- Lifting activities

In addition to the OHS capacity in the QHSE engineers, there is process safety competence in the Operations and Maintenance team, which is vital in an operational plant.

2.3.4.3 Social

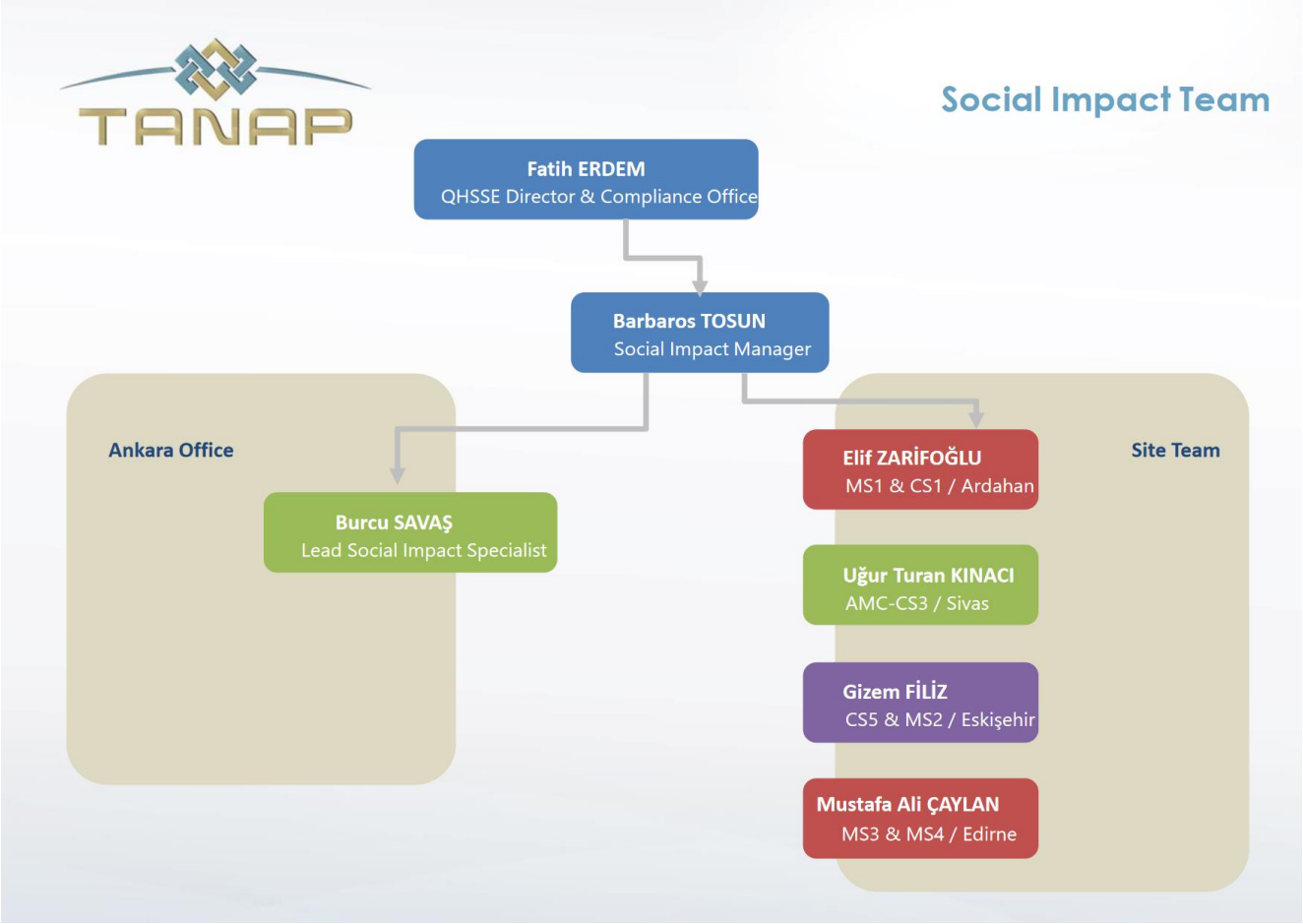

Figure 2.3 Social Team Structure

TANAP's internal Social Compliance Reviews for Operations have been carried out for 2021- 2022, as follows:

- (June 22-November 22) & (December 22 – May 23)– CS1&MS1
- (May 22 – October 22) & (November 22 – April 23) – CS3 AMC
- (March 22 - August 22) & (September 22 – February 23) – CS5&MS2
- (August 22 – January 23) – MS3&MS4

These are semi-annual, internal compliance reviews for each operational area for semi-annual assessment of site activities, identification and correction of potential challenges and general improvement of overall social performance of the Project. Assessments are against the Project ESIA commitments, legal and international requirements, and TANAP policies, plans and procedures. Areas for improvement as identified by these reviews included: lagging registration of grievances into the eBA (in-house electronic stakeholder management system of TANAP); carrying out inductions of all new staff/ refreshers for existing staff outside time limits; long wait times for resolution of grievances (see also Section 2.9.2). The reviews also identify that site-based staff should call on support from Ankara where required; the IESC notes that bi-annual Social Impact team workshop intend to support this recommendation.

2.3.4.4 Environmental Monitoring and Reporting

TANAP is implementing the Environmental Monitoring Plan for Operations (OEMP) (TNP-PLN-ENV-GEN-008) as part of the Environmental Management System, which is applicable to all Project activities conducted during the Operations Phase. This document was most recently re-issued following annual review and revision on 10 August 2023.

Current monitoring and reporting requirements are summarised in Figure 2.3 below. 'TPMC' is Third Party Environmental and Social Monitoring and Consultancy Services Company (i.e. ASSYSTEM).

Monitoring / Verification Activity	Reporting Format	Frequency
Internal Monitoring / Verification		
HSE Site Inspections	Checklists	Weekly
Internal Audits	Audit Reports	As required
CEMS	Monitoring Report	Annually
GHG Monitoring	Monitoring Report	Annually
External Monitoring / Verification		
IESC Inspections	Monitoring Report	Annually
Biodiversity Offsetting Evaluations	Monitoring Report	Annually
RoW Patrol Inspections	Progress Reports Summary Report	Daily Monthly
TPMC	Progress Report Summary Report	Monthly Annually

Figure 2.4 Operations Phase Environmental Monitoring and Reporting Requirements

The OEMP outlines Key Performance Indicators that have been developed for the Operational Phase of the Project, and requires that performance is tracked monthly, using data from the various monitoring and verification processes outlined within the Plan. (Also see Section 2.4.1of this Report).

TANAP has achieved 100% of target performance for all KPIs during the year to date, except for '*the % of tests/samples compliant with Project standards for effluent discharge*', which only achieved 40% in January, 80% in February and March, and 60% in June and July. Compliance with Project wastewater effluent quality standards appears to be a consistent issue for TANAP as this was also a problem in 2022. At CS5/MS2, quality standard failures in March, June and July were all due to a problem with the chlorine dosing system that resulted in coliform bacteria exceeding threshold levels (sampling was not undertaken in April and May). The reported lower KPI performance in January was partly due to a problem at CS5/MS2, where there was a filter failure on the day of sampling leading to elevated levels of suspended solids. Furthermore, at the MCC there were exceedances of threshold levels for both BOD[5]

and COD at the MCC in January. This was due to 'activated sludge escape to discharge'. There were also several problems at MS1, including filter failure and biological process failure. Whilst appropriate actions are being taken to address identified problems, ***the IESC recommends that TANAP takes a more proactive approach and reviews the operation and maintenance protocols for the wastewater treatment plants at MS1, CS5/MS2 and the MCC, to ascertain whether there are measures that could be implemented to avoid further effluent quality failures at these Stations.***

The data tables showing the wastewater discharge analysis results in the ASSYSTEM monthly reports for January, February, March and May-June 2023 indicate a number of exceedances of Project standards for wastewater which correspond directly to the issues outlined above for MS1, CS5/MS2 and the MCC. There are also breaches of Project standards for wastewater for Total Nitrogen (TN) and/or Phosphorus (TP) at all Stations. It is understood that these are not reported as non-compliances by ASSYSTEM because Turkish regulations and Council Directive 91/271/EEC of 21 May 1991 concerning Urban Wastewater Treatment have no limit values for these parameters unless the receiving environment is categorized as 'sensitive', in which case TN and TP removal should be undertaken. As the TANAP receiving environments for wastewater discharges are not considered to be sensitive, the adopted Project Standards are not applicable and are used as guiding values only. Furthermore, the results are not taken into account in reporting on KPIs.

2.3.4.5 Internal Monitoring/Verification

In accordance with the OEMP, the TANAP Environmental Department conducts formal environmental compliance reviews at least annually at all operational stations. At the time of the site visit, these had been completed for 2023 at CS1/MS1, CS3 (AMC), CS5/MS2 and the MCC (and the Reports provided for IESC review), with reviews on-going at MS3/MS4. The objectives of the reviews are to assess compliance with TANAP's ESMS and legal requirements, identify the root cause of any non-compliances, and propose corrective actions/improvements where necessary.

There were consistent findings relating to waste management at all Stations. These include inadequate labelling, poor waste segregation and scrap metal not being stored correctly. Further findings were relating to the incorrect storage of chemicals and content of spill kits. These are not material issues and can easily be addressed. Waste management is typically an area where lower levels of performance are observed, as it requires consistent and constant effort. As suggested in the Report for CS5, regular refresher training on waste management is also recommended by the IESC, as a way to increase employee awareness regarding Project requirements.

The review completed at CS3 (AMC) in April 2023 highlighted the incorrect storage of chemicals, with some containers being improperly labelled, out of date, and/or with open lids. These findings partially correspond with the IESC's observations at this Station (lack of labelling of containers), which

demonstrates that at least some the issues identified by the internal team have been effectively addressed by the station staff. However, the IESC observed a further non-compliance regarding incompatible chemical storage at this Station, as outlined in Section 2.5.3.4 of this Report.

In addition to monitoring environmental compliance at stations, the Environmental Department conducts audits of external companies providing environmental services, to ensure the level of service being provided is in accordance with TANAP's requirements. Planned audits for 2023 include the Pest Control services company, Ekopest (in November) and the Hazardous Wase Disposal Services company, Ardam (in December).

During 2023, the Environment Team has participated in Integrated Management System (IMS) audits that were led by the Quality Department for the following:

Internal:

- Maintenance Management

External:

- TEKFEN Emergency and Non-Emergency Pipeline Repair Services
- TANAP was Audited by Intertek for IMS re-certification for ISO 14001, 19001 and 45001 in April/May. Some minor recommendations were made that must be actioned by TANAP prior to the certificates being re-issued.

2.3.4.6 Integrity Management

RoW Patrolling Inspections

There are 10 RoW Patrol Teams (sub-contracted by BOTAŞ-PTT Anadolum). Each team covers a 150-200 km section of the pipeline, checking for any third-party infringements or interference, soil erosion and on the general surface conditions of the RoW. The KPI target for RoW patrolling is the completion of one complete tour of the pipeline route (a total of 1,811 km) every 15 days. As such, each team should be very familiar with their section of the route; to facilitate the identification of any new risks to the integrity of the pipe. At the time of the site visit, 17 tours had been completed along the pipeline route and at BVS34 – MCC. Of the total number of findings, the vast majority (316) were medium priority, 72 were low priority and 56 were high priority.

The top three findings are shown in Table 4.

Table 5 – Top three findings of RoW Patrols 2023

Type of Finding	Count of Findings	Priority Classification
Planting of tree of RoW	150	Medium
Test post damage	18	Medium
Subsidence on Row of 50cm	17	High

Damage to test posts was mainly due to collisions with agricultural machinery and subsidence was especially noticed after periods of heavy rainfall due to natural ground settlement, rather than serious soil erosion issues.

Integrity Management Platform

The TANAP Integrity Mapping Platform (IMP) is the central repository for aerial images, permits, as built data, survey results and information from the QHSE, Engineering, Operations & Maintenance and Security Departments relating to the RoW and stations. The RoW management process has been fully integrated with the IMP. This includes that each RoW Patrol Team has GPS supported tablets to facilitate the input of GPS data to the IMP during patrols, for the purpose of immediate digitalization. ArcGIS Filed Maps have also been developed and customized to collate site data from the RoW patrols. The IMP enables the Integrity Management Department to have immediate access to, and analyse, live information relating to any identified risks to the integrity of the pipeline. This includes through the integration of photogrammetric and high resolution 3D data following the completion of aerial surveys, which makes spatial analysis easier and more accurate and also reduces TANAP's carbon footprint.

External Geo-hazard Monitoring

TANAP has installed a Geodetic Network with a total of 1795 ground control points to facilitate all surveying, monitoring and inspection activities during the operations phase of the Project.

Geo-hazard surveys are being conducted on an annual basis by the Contractor Fugro Sial, under the leadership of subject matter experts (SMEs), relevant academics and experienced engineers. The monitoring surveys cover the following geo-hazard risks:

- Land and slope erosion
- Karstic regions
- River Crossings
- Landslides
- Other geo-hazards:

- Soil subsidence at stations
- Buoyancy
- Floods, earthquakes, liquefaction.

TANAP employs a risk-based inspection strategy, whereby geo-hazard risks levels are determined according to the findings of the previous surveys, and the frequency of subsequent monitoring surveys is set according to the risk level, i.e. 'Medium risk' sites are monitored on an annual basis, 'Low risk' sites every 3 years and 'Notable' sites every five years. If a site is classified as 'High risk', urgent action must be taken to reduce the risk level to Medium or lower.

The latest land and slope erosion surveys had been completed 3 weeks prior to the site visit and as such, the Reports were not available for review at the time of the site visit. However, the Lead Integrity Engineer for Geohazards was aware of the results and was actively coordinating with other Departments to instigate any necessary rectifications/repairs. Of the 345 slopes inspected, only 5 required minor rectifications, such as the removal of accumulated sediment from slope breakers. The IESC had previously raised concerns regarding the frequency of monitoring for 'Low risk' sites in relation to soil/slope erosion. However, the frequency of geo-hazard surveys based on the assessed level of risk appears to be sufficient, and there have been no instances of unexpected soil/slope erosion risks to the integrity of the pipeline occurring between monitoring visits by SMEs. TANAP provided a selection of Medium and Low risk 'Land and Slope Erosion Survey Service Reports' from January 2023. These indicate that soil erosion, subsidence, scouring of irrigation water channels and inadequate slope drainage are on-going problems where the prevailing soil type has high erosion potential. Appropriate remedial actions were recommended in all cases to address problems (such as extending drainage channels, replacing temporary with permanent slope breakers and lining water channels with concrete) Section 2.4.3 of this Report outlines examples of the rectification works that were verified by the IESC following the results of the latest surveys.

In addition to physical monitoring surveys of karstic regions, and in accordance with recommendations made by the SME's following the August 2022 surveys, TANAP is planning to employ additional geo-physical investigation methods to help detect and monitor the formation and extent of any underground cavities, sinkholes etc. These methods include both ground penetration radar (GPR) and multi electrode electrical resistivity tomography (ERT). GPR uses radio waves to detect and characterize subsurface geological features and has the highest resolution of any geophysical method with cm scale resolution sometimes possible. ERT profiles comprise modelled 2-D cross sectional plots of resistivity versus depth. These can accurately indicate the geometry, lithology, hydrology and petrology of subsurface geological features.

An aerial survey by plane of a 500m corridor along the entire pipeline route was completed in Q4 2022 and TANAP has been processing and analyzing the imagery obtained since January 2023. It is intended that this survey is repeated every 3 years for comparative purposes, depending on the available budget. TANAP has also completed a photogrammetric inspection of the majority of the RoW using drones equipped with Lidar features. Flying restrictions (such as battery life, military zones, airports) have prevented the entire RoW from being photographed by drone, however, the resulting images have helped to facilitate the generation of high-resolution 3D terrain models of the pipeline route, such as the example in Figure 2.4, to help detect any changes in ground elevation, surface conditions and RoW violations. These 3D terrain models are also helping to assess complaints from landowners/stakeholders regarding reinstatement, by enabling a comparison of the RoW before and after construction to identify any topographical anomalies.

Drones have also been used by TANAP for event analysis, e.g. following flood events or earthquakes to record video footage that can be inspected to detect any new risks to the integrity of the pipeline that require a more detailed in person site visit.

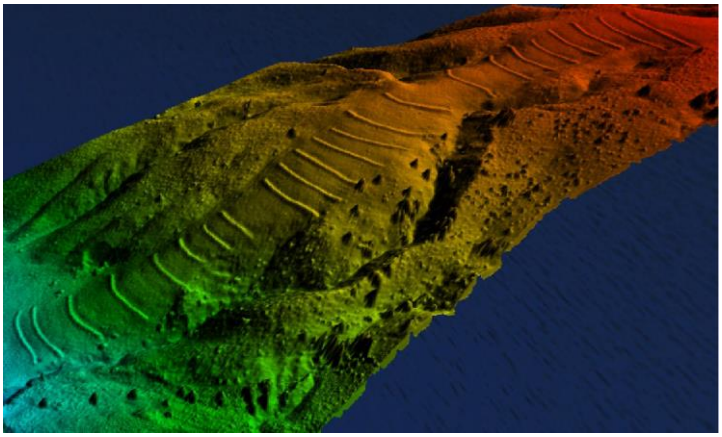

Figure 2.5 Example of a 3D Terrain Model of the RoW

The results of all aerial and drone surveys are input to the IMP, to help ensure that TANAP has an up-to-date overview of the condition of the RoW.

The annual landslide survey for 2023 has been completed, and change analyses is planned to be performed on the existing photogrammetry data. At the time of the site visit, there were no landslide risks identified that could pose a threat to the integrity of the pipeline.

Other geo-hazards have been monitored and evaluated, e.g. through undertaking soil subsidence (ground level) surveys at stations. To date, no issues have been detected.

Given the scope and extent of both physical (RoW Patrols, SME surveys), and remote (GPR, ERT, Lidar, photogrammetry, aerial surveys etc.) monitoring surveys that are being, or are planned to be,

undertaken at regular intervals, the IESC considers it highly unlikely that TANAP will not be immediately aware of any new geo-hazard risks to the integrity of the pipeline, and take appropriate action as necessary.

2.3.4.7 Third Party Monitoring Company (TPMC)

There are several third-party monitoring companies active in delivering operational requirements. These are:

Environment

- Environmental Third-Party Monitoring and Consultancy Services (ASSYSTEM)
- Greenhouse Gas Emission Verification Services (AURA Uluslararası Belgelendirme)
- Long Term Services Contract for Water & Wastewater Treatment Plants Maintenance, Spare Parts and Support Program (GNS Arıtma Teknolojileri Mühendislik Hizmetleri Proje Taahhüt Ticaret)

Social

- Annual independent ESIA monitoring by a Third Party Monitoring Company (TPMC) is required under TANAP's Social Monitoring Plan for Operations (TNP-PLN-SOC-GEN-014). The third party monitoring of social impacts is conducted by consultant *ASSYSTEM*, whose most recent report was issued in October 2022. The monitoring comprised of visits to 17 settlements in the eastern section of the pipeline: four (4) AGI-affected villages; seven (7) BVS-affected villages, and Six (6) pipeline-affected villages. Monitoring included face to face interviews with Muhtars to understand perceptions of the grievance mechanism; stakeholder engagement activities; and community health and safety measures.
- Findings included: overall satisfaction with TANAP's stakeholder engagement and disclosure of information including a high level of awareness about land use restrictions and confidence in accessing TANAP representatives. There is increased confidence in TANAP's security measures, specifically, that people feel safer knowing what TANAP's security measures are, so they are more confident in TANAP's operation of the pipeline. Expectations about social investment programs continue to be high but are decreasing with time. Some grievances are still outstanding which has caused the handling of grievances to continue to be viewed as insufficient for about half the settlements visited.

- The IESC notes that the TPMC visit this year was to the eastern side of the pipeline as recommended by the IESC previously thereby providing a more balanced view of stakeholder opinions across the pipeline.

2.3.5 Assessment and Management of Change

All outstanding environmental Management of Change (MoC) cases, relating to the:

- Extension of exhaust stacks of the Water Bath Heaters in MS2
- Construction of Central Waste Accumulation Areas, Chemical Storage Areas and Pressurized Cylinder Storage Areas at MS1, CS1, CS5, MS3, MS4 stations; and
- CS5 Offtake, CS5 Main, CS1 Water Bath Heaters' Stacks Monitoring Ports Installation were completed as of March 2023. There are no new MoC's.

2.4 Resource Efficiency and Pollution Prevention

2.4.1 Resource Efficiency

Following the previous site visit, whilst it was clear that resource efficiency is a priority for TANAP, the IESC observed that there were no KPIs in Appendix 3 of the OEMP relating to water or energy consumption. As such, there was no consistent mechanism for TANAP to demonstrate good levels of performance in relation to this element of the EBRD's Performance Requirement 3 (and other equivalent Lender's Standards). It was, therefore, recommended that the OEMP was revised to include appropriate KPIs in relation to water and energy consumption. It is gratifying to report that the OEMP has been amended to include two additional KPIs and targets relating to natural resource efficiency (for both electricity and water consumption). TANAP has declared that 2023 is the 'Year of Sustainability', and the targets to achieve a 1% reduction in the total volumes of electricity and water consumed per capita in Ankara Head Quarters relative to the previous year reflect a public commitment to achieve annual improvements in resource efficiency. The previous IESC finding is therefore closed.

In order to achieve annual savings in electricity consumption, TANAP has initiated an IT campaign including making e-mail announcements and issuing computer screen pop-ups to remind employees to adopt energy saving behaviours. Additionally, reminders are being issued during meetings, and on the 23rd Floor of the Head Office building in Ankara, a pilot scheme to automate the lighting has been implemented. If this is successful, it will be expanded to the rest of the building and other facilities. Since January, there has been an overall decrease in electricity consumption as illustrated in Figure 2.6, which implies that the pilot scheme is having a positive effect.

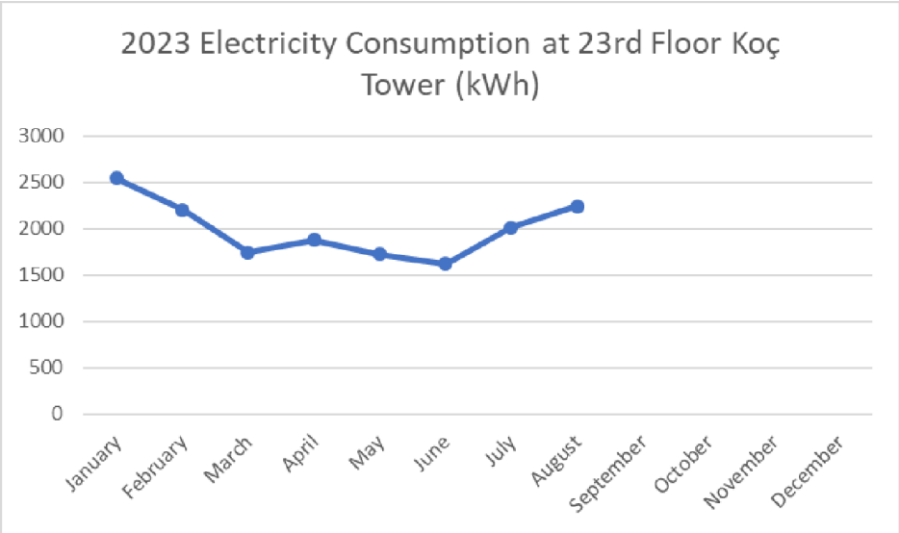

Figure 2.6 Electricity consumption for 23rd Floor of Head Office in Ankara (2023)

TANAP has already implemented water saving measures but is attempting to identify further methods for reducing water consumption. Figure 2.6 below illustrates the impact of a change in the number of people being in the office, or out of the office on site, which suggests that reducing the water pressure or introducing flow rate limiting devices on taps will help to achieve the target improvements.

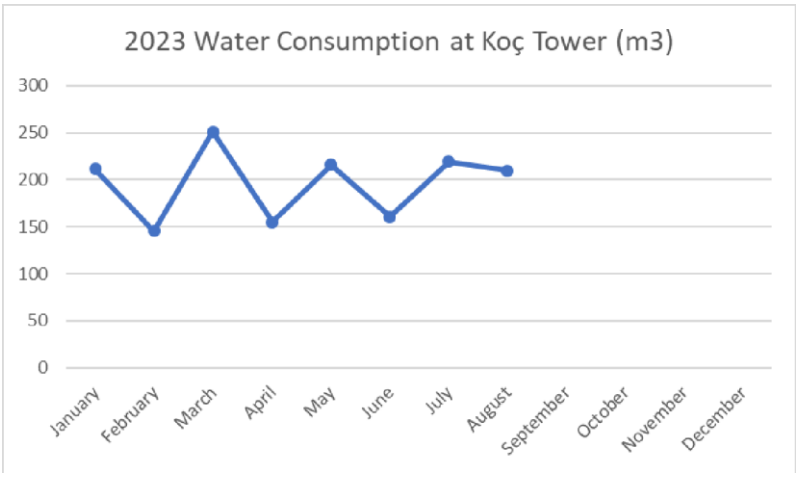

Figure 2.7 Water consumption for Head Office in Ankara (2023)

2.4.2 Pollution Prevention & Control

There has only been one environmental incident in 2023, which occurred on 7 March at CS3/AMC. It is noted that this is a 50% decrease in the number of environmental incidents since 2022 (when there were 2). A Contractor's van had come to the facility to collect some materials from the warehouse and as it was exiting the building, the drainage grating lifted under the weight of the vehicle, puncturing the fuel tank and resulting in the spill of around 70 liters of diesel, as shown in Figure 2.7.

Figure 2.8 Accidental fuel spill at CS3/AMC

Employees at the site immediately blocked off the drainage channel to contain the spill and employed the fuel spill kits available at the facility to clear up the diesel. The unsuitability of the grating had previously been identified, and work was already planned for the summer to rectify the problem. Following this incident and before the works could be completed, the gratings were welded in place as a temporary mitigation measure to prevent any recurrence of the incident.

ASSYSTEM do not monitor air quality emissions as part of their scope of work. As outlined in Section 2.4.4 of this Report, the MoEUCC will allocate a laboratory (via the Central Laboratory Determination System) to undertake the measurement and analysis of emissions from heating boilers at all compressor stations and metering stations; including to determine whether they are meeting the threshold values specified in the Industrial Air Pollution Regulation. The results will be reported to the related Provincial Directorate of the MoEUCC.

TANAP additionally outlined during the visit that the annual environmental inspection by the Eskişehir Provincial Directorate of the MoEUCC was conducted on 3 August. The findings were compliant with the relevant legal requirements.

TANAP is monitoring and has achieved 100% of target performance for all pollution prevention KPIs (other than for wastewater quality as outlined above). This includes 0 complaints received relating to noise, 100% of tests being compliant with Project standards for air emissions, 0 spills to land over 50 litres, and 0 spills to water. As such, the IESC is assured that the operational management systems, plans and procedures in place are generally adequate to ensure that direct negative environmental impacts of TANAP's operations are being avoided/limited.

2.4.3 Geo-Hazards

On 6 February 2023, a 7.8 magnitude earthquake occurred in south-eastern Türkiye (and northern Syria), followed by a second 7.5 magnitude earthquake 9 hours later. The TANAP pipeline is located around 200 km from the epicenter of the closest earthquake, however the Pipeline Monitoring System (PMS) alarms detected the movement. In response to this event, TANAP undertook assessments of ground movement at all fault crossing points, landslides, liquefaction/buoyancy, damage to any civil structures and possible sinkhole development. Following these assessments, it was determined that there were no threats to the integrity of the pipeline resulting from the seismic events.

During the 2022 site visit, the IESC observed significant on-going soil erosion issues at **KP 1518+302.** The main contributing factors to high soil erosion risk at this site include soil composed of weathered granite (with a very high erosion potential) and a small river crossing parallel to the RoW. Furthermore, whilst there is a natural gully at the foot of the lateral slope that would be the most effective way to direct run-off/drainage from the RoW, it is within Government controlled Forestry land and TANAP were not (at the time of the 2022 visit) permitted to divert water from the RoW into this gully. Despite extensive, recent rectification works at this site (including the slope being fully re-graded, the slope breakers being repaired and extended, and additional slope breakers being added) the IESC observed that slope breakers had already been breached, and there were clear signs of rilling and deep gullies forming.

The IESC previously recommended that TANAP negotiate with the relevant Directorate of Forestry to allow surface run-off to be discharged into the natural gully, thereby following the natural contours of the slope and resulting in lower rates of soil erosion. During this site visit, the IESC was informed that following discussions with the Directorate of Forestry, TANAP are now allowed to divert surface run-off into the gully, which should at least partially reduce the soil erosion risk at this site. Further rectifications (with the permission of the Directorate) and repairs have also been completed, as shown in Figure 2.8 below (taken from a recent RoW Patrol Report). This site was not visited during 2023 and as such, the current status of soil erosion can not be verified. It will be requested that this site is a focus of the 2024 site visit. However, following the site visit, TANAP was able to provide the latest SME Land and Soil Erosion Survey Report (completed on 23 July 2023) for this site. The only reported issue was minor soil wash marks on the side slope breakers. The recommendations were for the site to continue to be periodically monitored by the ROW Patrol Teams and for the side slope breakers with minor erosion features to be reinstated manually (with a shovel).

Figure 2.9 Repairs made at KP 1518+302

All previous site visits completed by the IESC Team Environment Specialist have focused on Construction Lots 3 and 4 (to the west of Ankara). Therefore, it has not been possible to observe and verify how geo-hazard risks are being managed in the karst landscapes between Erzincan and Sivas, to the east of Ankara.

The Karst Survey Report for 2022 (**TMS-REG-OPR-GEN-045**) completed by external SMEs has been provided to the IESC for review. The 2022 survey focused on 7 sections of the pipeline RoW covering approximately 7.7 km between KP 651+300 and 720+200 that had been classified as 'Medium Risk' following the 2021 survey. All sections are within Gypsum karstic units and included **KP 657+500-620**, in an area where dissolution type karstic features are very common. This corresponds with the site visited by the IESC, where two previous sinkholes were found in 2019 close to the centerline of the pipe. These were backfilled in 2019, and during the site visit were observed to be stable, as shown in Figure 2.9.

The IECS was informed that the base of the pipeline trench at this site is around 4m deep, and the main concern is that the bedding material beneath the pipe can be washed out. The Temelsu Survey Report states that backfilling the sinkholes is only a short-term solution, and that the on-going dissolution of gypsum is likely to cause the sinkhole entrances to be re-opened, which could result in the infiltration of surface water flow to the RoW and beneath the pipe. As such, this site is still classified as Medium Risk and monitoring (both visually and with geophysical methods) is recommended.

Figure 2.10 Two backfilled sinkholes at KP 657

Karst geo-hazard risks were divided into 6 classes according to the relevant geomorphology of Sivas gypsum in 2015, prior to construction. Relevant mitigation measures were then implemented as part of the design process. However, the karst landscape through which the pipeline route passes will continue to be one of the most challenging for TANAP in terms of integrity management. The main geo-hazard is ground collapse due to the underlying soluble rock being dissolved by groundwater and creating a karstic void (leading to caves and sinkholes). The IESC is comfortable that the range of monitoring approaches being employed by TANAP, in particular ERT and GPR, as well as the SME surveys, will

ensure that any new karst geo-hazards will be detected to enable measures to be taken in good time, and impacts on the integrity of the pipe will be avoided.

The IESC visited two other sites; with the purpose of verifying the effectiveness of rectifications that have been completed by TANAP to control soil erosion.

The first was **KP 617+207**, which is also the site of River Crossing 0276. There was an identified scouring problem at this site, that had been exacerbated by heavy rain and flash flooding typical of this area, and the Temelsu SME recommended the addition of further riprap protection on both riverbanks and the across the riverbed to ensure the minimum 2m depth of cover above the pipeline is maintained. This work was completed in 2021, along with the addition of a permanent berm and permanent slope breaker (as shown in Figure 2.10) due to the high erosion potential of the soil in this area.

Figure 2.11 Additional permanent berm and slope breaker at KP 617+207

There was some visible undercutting of the riverbank immediately upstream of the river crossing, as shown in Figure 2.11. However, this is outside of the RoW and is not expected to have any impact on the integrity of the pipeline so will not be addressed by TANAP. The IESC anticipates that there will be the need for maintenance activities at this site to clear the permanent slope breaker of deposited sediment, which was observed to already be accumulating. However, this site will continue to be monitored during the RoW Patrols, and at least 4-5 times per annum by the TANAP Lead Integrity Engineer for Geohazards (within the Integrity Management Department). As such, the IESC is comfortable that any future risks to integrity of the pipeline due to soil erosion will be detected and addressed in a timeframe commensurate with the scale of the problem.

Figure 2.12 Undercutting of the riverbank at KP 616+207

The second site visited was **KP 702+500**. Three years ago, an existing 60-inch irrigation pipe on the site was broken and the volume of water released resulted in a large amount of the cover material being washed away on the RoW, exposing the pipe. The immediate action taken was to contact the state water authority and have the supply turned off whilst the maintenance team were mobilised to backfill the trench. However, during subsequent discussions with the landowner, it was determined that this problem could recur. As such, the geo-technical contractor was engaged to construct engineering protection measures in the form of replacing the temporary slope breakers with permanent ones, and the addition of two rock lined, concrete flood diversion channels (one on the lateral slope and the other immediately next to the irrigation pipe) as shown in Figure 2.12.

Figure 2.13 Permanent flood diversion channel

Jute matting was also laid down and hydro-mulching used to help re-vegetate the site and limit any further soil erosion. The IESC observed good levels of re-vegetation, and there were no signs of soil erosion, as illustrated in Figure 2.13.

Figure 2.14 Jute matting and revegetation at KP 702+500

The IESC was encouraged that TANAP has taken a proactive, collaborative approach to integrity management at this site. Through active engagement with the landowner, effective forward planning has been adopted, and measures taken to limit/avoid future risks to the integrity of the pipe, rather than relying on a reactive approach if/when the situation happens again.

Despite only 3 KPs being the focus of this site visit, the IESC was able to view the RoW whilst travelling, and no significant soil erosion issues were observed, even in mountainous areas with limited vegetation at higher altitudes. It appears that reinstatement has generally been successful.

There will be on-going geo-hazard risks and impacts across the Project that will need to be monitored and managed on a continuous basis, especially where the pipeline passes through more challenging mountainous and karst landscapes. The IESC is assured that the TANAP Lead Integrity Engineer for Geohazards has an excellent appreciation of the full range of geo-hazard risks across the Project, having been involved in the initial ground investigations, and route design and construction processes. Furthermore, the extent and frequency of geo-hazard monitoring being undertaken are considered by the IESC to be appropriate and adequate for the levels of geo-hazard risks identified. To date, this has ensured that any immediate risks to the integrity of the pipeline have been detected and effectively addressed.

2.4.4 Greenhouse Gases (GHG)

The TANAP Environmental Department are calculating annual GHG emissions during the Operations phase of the Project according to the methodology developed by Çinar for GHG accounting; based on the 'International Financial Institution Framework for a Harmonised Approach to Greenhouse Gas Accounting (November 2015)', (ref. CIN-REP-ENV-GEN-027).

The most recent GHG Emissions Report for 2022 was issued on 10 March 2023. Scope 1 and 2 emissions have been calculated using the methodologies outlined in the document referenced above. Scope 3 emissions (arising from sources not operated by the Project) are not typically included in annual reporting exercises and are excluded. Direct Scope 1 emissions sources that have been included in the calculations include stationary (e.g. gas turbines, boilers, heaters) and mobile (i.e. fleet vehicles) combustion emissions sources, vented emissions and fugitive (unintentional leaks from sealed surfaces and threaded components including piping and associated equipment components) emissions. Indirect Scope 2 emissions were calculated according to the electricity consumed by each operating facility (as these account for the GHG emission from the generation of electricity that is consumed by the Project).

According to this Report, the total annual GHG emissions resulting from the operation of TANAP in 2022 were **348,993.74 tCO_2e** (compared to 259,015.64 tCO_2e in 2021). This represents an increase of 35% in TANAP's total annual GHG emissions.

Vented emissions in fact decreased by 20.6%, and fugitive emissions by 50% (due to a total of 4 compressors at CS1 and CS5 being kept unpressurised). However, emissions for mobile combustion increased by 98% due to the resumption of site visits that were suspended during the Covid-19 pandemic. GHG emissions from stationary Natural Gas combustion also increased compared to 2021.

Nevertheless, greenhouse gas emissions per quantity of transmitted natural gas in 2022 only increased by 9% compared to the previous year. This increase is not an unusual outcome because 2022 was the commencement year of TANAP operations during the plateau period. Therefore, it will be considered as the year providing the reference baseline data when tracking the real change in GHG emissions in the following years. A decrease is expected compared to the 2022 baseline data with the improvement works and additional measures to be taken.

The measurement of emissions from the heating boilers (at the Compressor Stations and Metering Station) had not commenced at the time of the site visit but will be undertaken by a laboratory allocated by the Central Laboratory Determination System (MELBES). The results will be reported to the relevant Provincial Directorate of the Ministry of Environment, Urbanisation and Climate Change (MoEUCC). The previous GHG emissions reports for CS5/MS2 and CS1 were verified according to the Regulation on Monitoring of Greenhouse Gas Emissions and submitted to the MoEUCC via the online integrated environmental information system.

To date, continuous fugitive GHG emissions have been calculated up until now based on the methodology identified above however monitoring has not been undertaken by TANAP at the above ground installations (AGIs). The Operations Department is now discussing and evaluating the efficacy and necessity of installing a monitoring system at all AGIs. Fugitive emissions have been calculated up until now based on the methodology identified above (and included in Scope 1 emissions).

2.4.5 Waste and Materials

The IESC observed a generally high standard of waste management practices at CS3 (AMC), in compliance with the Waste Management Plan for Operations (TNP-PLN-ENV-GEN-007). This station covers from KP 410 to KP 978, and 17 personnel work at this facility.

Segregated waste bins are being provided around the station for paper, plastic, glass and metal, clearly labelled, and there was no mixing of waste types observed. Such effective at source segregation is commended, as it facilitates the removal of waste by the relevant licensed third-party company for recycling. The external waste storage area comprises units for different waste streams that are all locked and covered, with impermeable flooring. Each unit is clearly labelled, and good housekeeping practices were being demonstrated, as shown in Figure 2.14.

Figure 2.15 Good practice non-hazardous waste storage at CS3

Within the hazardous waste storage units, there was also a drainage channel on the floor that led to a dedicated collection tank. Universal spill kits, first aid kits and eye wash stations were also provided in case of an accidental spill. In accordance with good international practice, there was an up-to-date hazardous waste register that indicated the date of arrival of the waste, the types of waste and volumes being stored. Material Safety Data Sheets (MSDS) were also available. However, hazardous waste containers were mostly, but not all, clearly labelled as illustrated in Figure 2.15 (where the blue containers are missing labels), which is a non-compliance with the requirements of the Pollution Prevention Plan for Operations (TNP-PLN-ENV-GEN-009). This observation corresponds with the findings of the internal environmental compliance review (see Section 2.3.4.5) and should be easily rectified.

Figure 2.16 Hazardous waste storage practices at CS3

Inside the warehouse, there was a dedicated hazardous waste bin that is clearly labelled, with a lid. There were also a first aid kit and eye wash located immediately next to the bin. One minor recommendation is that the spill kit that is located at the entrance to the warehouse, next to the glass and domestic waste bins, be placed next to the hazardous waste bin where it will be more easily accessible in the event of an accidental spill.

Figure 2.17 Hazardous waste bin in the warehouse at CS3

Both the external materials storage area and materials storage within the warehouse were observed to demonstrate best practice. The external storage area was cordoned off, the different types of materials

were clearly labelled, and the area was very tidy and organised so that there were no H&S hazards. This is illustrated in Figure 2.17.

Figure 2.18 External materials storage area at CS3

Inside the warehouse, similarly high levels of housekeeping were observed with all materials being stored on off the floor shelving, within adequate secondary containment where required, and clearly labelled (see Figure 2.18).

Figure 2.19 Good practice materials storage at CS3

Hazardous materials were being stored within a locked, clearly labelled cupboard within the warehouse. A spill kit was located next to the cupboard and in accordance with best practice, MSDSs were available, and a storage compatibility matrix had been completed and was displayed, as shown in Figure 2.19.

Figure 2.20 Hazardous materials storage at CS3

However, there was one observed non-compliance at CS3 (AMC) regarding the storage of incompatible flammable and poisonous materials. Please see Section 2.5.3.4 of this Report. It should be noted that TANAP employees at the station took immediate action to rectify the situation.

2.5 Labour and Working Conditions

2.5.1 Human Resource Policies and Working Relationships

TANAP has a Human Resources Policy [TNP-POL-HRM-GEN-006] and HR Management Plan [TNP-PLN-HRM-GEN-001] in place as part of the operational organisational management, for which implementation is the responsibility of the Human Resources Directorate. Subordinate documents guide policy implementation and include aspects such as the Discipline Procedure; the Operational Training and Competence Philosophy; the Performance Evaluation Procedure; Recruitment and Mobilization Plan; and the Termination Procedure.

As of August 2023, there are 307 direct employees. The following table describes the breakdown of the workforce as of 31 August 2023:

Table 6 - TANAP workforce numbers breakdown

Employee Category	Gender	Number
Direct TANAP Employees	• Men • Women • Total	• 307 • 57 • 364

RoW Patrolling	• Men • Total	• 5 teams of 10 • 50
TANAP Administrative (housekeeping, kitchen, personnel drivers, etc.)	• Site-based • Women • Total	• 47% • 25% • 188
TANAP Security personnel	• Men • Women • Total	• 90% • 10% • 213

2.5.2 Protecting the workforce

The Human Resources Management Plan provides TANAP's wages, benefits and working conditions policy of offering competitive salaries within the market and benefits to employees, as well as operating in compliance with legal requirements.

Social Inductions/Refresher trainings have continued to be organised for workers by the Site Social Impact Specialists, on content including TANAP's Social Commitments; Turkish laws on working conditions; worker rights and entitlements; and the grievance mechanism. The following data was sourced from the internal Social Compliance Reviews, conducted in 2022 / 2023:

- CS1-MS1: 100% of staff have had the social induction training (to July 2023).
- CS3: 100% of staff have had the social induction training (to May 2023).
- CS5-MS2: Social inductions were provided to 24 new employees (2 TANAP and 22 service provider staff). Additionally, refreshment trainings were delivered to 52 employees (17 TANAP and 35 service provider staff) (to February 2023).
- MS3-MS4: Social inductions were provided to 7 new employees (1 TANAP and 6 service provider staff). Additionally, refreshment trainings were delivered to 94 employees (23 TANAP and 71 service provider staff) (to February 2023).

2.5.3 OHS

2.5.3.1 General

The IESC took a focused, risk-based approach to the assessment of OHS. Previous remote assessments and findings were assessed and validated as part of this physical assessment, however

there were no opportunities to observe high-risk work being conducted in the field. This is not unusual given the nature of operations as opposed to construction.

TANAP OHS statistics remain industry best practice with no recordable incidents for the period under review resulting in a 0 LTIFR and TRIFR. Near-miss incidents totalled 17 for the review period and did not represent any failings in core OHS systems or procedures. TANAP have also maintained very good leading indicators such as behavioural interactions, safety walk-throughs and inspections, development and tracking of action plans and monitoring of outstanding actions to completion.

TANAP has a robust internal audit process with frequency of assessments, findings, actions and action register all very well implemented and managed. The close out rate of corrective actions identified during internal OHS audits can be seen in Table 5 below. The IESC commends the closure rate of actions which was 90% at time of the field visit.

Table 7 - The close out status of the action items identified during audits between September 2022 – August 2023

Audit	Open	Closed	All
ERP Readiness Audit	7	64	71
Health Audit	6	108	114
Chemical Substances Management Audit	8	33	41
Personal Protective Equipment Inspection and Audit	0	36	36
General HS Site Inspection	16	54	70
Contractor HS Compliance Audit	21	208	229
Road Safety Audit and Inspection	1	13	14
Permit to Work Audit	4	5	9

2.5.3.2 Road Safety

Road safety remains one of the highest OHS risks for the operations and the road safety management initiatives are highly commended as is the level of validation.

The IESC team did not observe any unsafe driving or road practices during the site visit from any of the drivers. Speed limits were strictly adhered to and offroad driving weas conducted in a safe and cautious manner. A potentially hazardous unsealed access road was used to reach BVS 19 and while there were

no major hazards present at the time the IESC requested documents detailing the access road inspection procedure, maintenance procedure and Trigger Action Response Plan (TARP) for its safe use. TANAP provided two road risk assessment reports regarding BVS19 prepared previously. The risk assessments are in Turkish however outline common conditions that may affect the safe usage of this road. Exact details could not be determined however the IESC is satisfied that these documents are evidential of the kinds of considerations that should be made when using BVS19.

TANAP also provided information regarding the maintenance procedure of this road, the access road is projected to be upgraded due to its poor conditions by taking into account the Highways specifications and TANAP Project requirements. After this road is renewed/upgraded, a maintenance plan and new risk assessment will be made in coordination with Risk, HS and Integrity Teams.

The IESC also requested a 'driving in cold weather' risk assessment and procedure. TANAP provided their training presentation that goes into detail about the risks and considerations for driving in snow/cold weather.

The presentation on safe driving in winter conditions is a commendable initiative that provides valuable information on how to stay safe on the road during the winter months. It is important to be aware of the increased risks associated with winter driving, such as icy roads and reduced visibility, and to take steps to mitigate these risks. The presentation covers a wide range of topics, including:

- The importance of planning ahead and checking road conditions before driving in winter weather.
- Tips for driving safely in icy and snowy conditions, such as reducing speed and avoiding sudden braking and turning.
- The importance of using winter tires and chains when necessary.
- What to do if you skid or get stuck in the snow.

The presentation is well-organized and informative, and it is clear that the presenter has a deep understanding of the challenges of winter driving. The presentation is also delivered in an engaging manner, which makes it easy to follow and understand.

2.5.3.3 COVID-19 Management

COVID-19 safety continues to be considered by TANAP albeit as a lower priority risk due to most official COVID-19 restrictions being lifted and COVID-19 being almost non-present in Türkiye. Masks and anti-bacterial spray were provided in all vehicles and enclosed spaces while conducting work for TANAP.

Employees are encouraged to regularly test for COVID-19 and stay home if any symptoms are apparent. TANAP did not conduct any COVID-19 related emergency scenarios for the review period.

Currently employees are encouraged to report diagnosed and/or suspected COVID-19 cases to HQ management (workplace doctor, H&S and HR) as soon as possible. HQ management then determines the precautions including contacting of close contacts and isolation. This approach is currently practiced in most places globally and is commended.

2.5.3.4 Physical verification of OHS compliance at CS3/AMC

A physical assessment of OHS compliance was conducted at CS3/AMC including a walk-through of the facility. The site had a very high level of housekeeping and general OHS considerations were beyond international best practice. The IESC commends the extremely high quality of OHS signage, labelling, storage, and organisation.

After a thorough inspection of the facility only one OHS non-compliance was identified which was the incorrect storage of poisons and flammables within the same storage area (Figure 2.20). Storing poisons and flammables together is a significant OHS hazard. If these chemicals mix, they can create a variety of dangerous situations, including:

- Fires and explosions: Some poisons can react with flammable materials to cause fires or explosions. For example, storing chlorine gas with gasoline can create a highly explosive mixture.
- Toxic fumes: If poisons and flammables are mixed, they can release toxic fumes that can be harmful to human health. For example, mixing bleach and ammonia can create chlorine gas, which is a highly toxic gas that can cause respiratory problems and even death.
- Corrosive substances: Mixing poisons and flammables can also create corrosive substances that can damage property and injure people. For example, mixing acid and base can create a corrosive substance that can burn skin and damage metal.

Figure 2.21 Storage of poisons and flammables together

In addition to these specific hazards, storing poisons and flammables together can also make it difficult to respond to emergencies. If there is a fire or other emergency in an area where poisons and flammables are stored together, it can be difficult for firefighters and other emergency responders to safely access the area and extinguish the fire or contain the spill. **It is recommended that all employees responsible for the storage of hazardous materials and hazardous waste at CS3 (AMC) are given refresher training, and that additional checks are carried out over the next 6 months by the HS and Environmental Departments to ensure the correct hazardous waste/materials storage measures are being implemented.**

However, this does not constitute a material non-compliance as TANAP has systems, processes or mitigation measures in place which are working towards addressing the deficiencies. A chemical compatibility chart was present at the storage area which allowed the IESC to easily identify that poisons and flammables should not be stored together and easily fix the error.

2.5.3.5 Incident reporting and management

The incident register was reviewed and is to be commended with zero recordable incidents for the monitoring period. There were no High risk near misses for the period under review and as noted in this report the lagging safety statistics for this project are excellent and industry best practice. Lagging safety statistics are presented below and actual LTI frequency and total recordable injury rate are below the respective targets of 0 and 0.3 for the entire monitoring period.

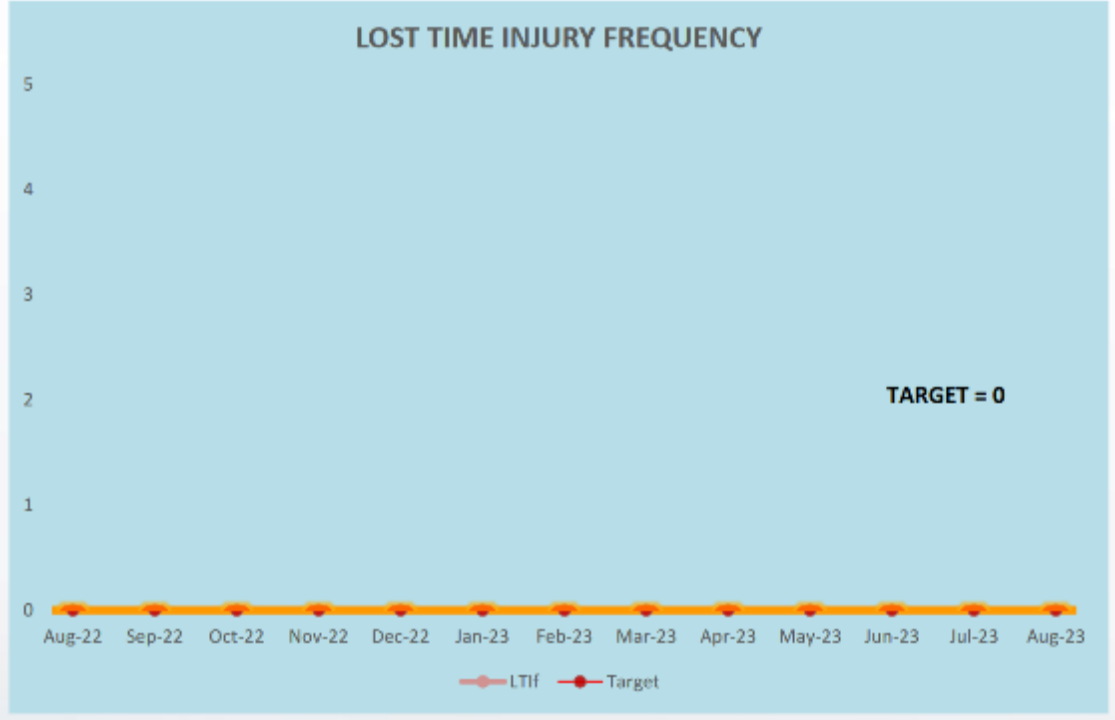

Figure 2.22 Lost Time Injury Frequency

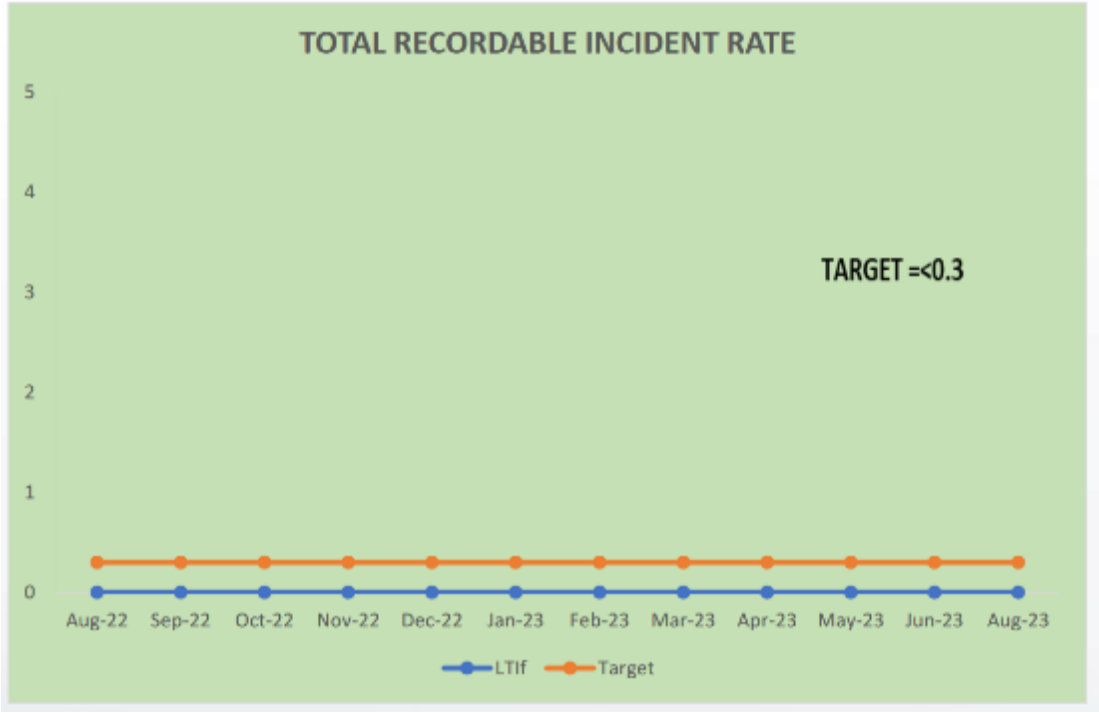

Figure 2.23 Total Recordable Incident Rate

2.5.3.6 Crises and Emergency Management

There was a further improvement in the scheduling and conducting of emergency exercises which is commended. 19 emergency response exercise reports were sampled, and these represented a good variety of scenarios and locations. This included scenarios that were conducted with the local community and the local emergency services such as the Fire Department. The emergency response exercise program for 2023 was industry best practice and is highly commended.

2.5.4 Grievance mechanism

The Grievance Management Procedure [TNP-PCD-SOC-GEN-001-Rev-P6-0_GRM] is operational and sets out the process and responsibilities for handling and monitoring grievances from stakeholders (internal and external). Since December 2022, only one new worker complaint was logged regarding unfair dismissal and was soon closed accordingly.

2.5.5 Security Personnel Requirements

This aspect was not assessed as part of the visit.

2.6 Community Health Safety and Security

2.6.1 Infrastructure, Building, and Equipment Design and Safety

The IESC notes that the security operators are able to identify (potential) infringements along the length of the pipeline and at all AGIs, and with support from RoW Patrolling Team and other key stakeholders (e.g. Muhtars), the maximum time to reach any location on the pipeline was reported as approximately 45 minutes (annual average of the maximum time).

2.6.2 Hazardous Materials Safety

This aspect was not assessed as part of the visit.

2.6.3 Traffic Safety

The IESC notes that good road safety management practices remain in place for the operations period. Refer to Section 2.5.3.2 for further information regarding road safety.

2.6.4 Exposure to Disease

See Section 2.5.3.3 (Covid-19).

2.6.5 Natural Hazards

This aspect was not assessed as part of the visit.

2.6.6 Emergency Management

Disclosure and distribution of the Community-Based Emergency Response Plan (CBERP) was completed in AGI-affected settlements through community informative meetings during the previous reporting cycle. Disclosure meetings with pipeline-affected settlements are ongoing. Even though the awareness campaign have not been completed at all the pipeline villages, the communities visited were clear about who to contact in case of an emergency.

The IESC notes the first of two emergency response scenarios (Community Safety based drills) that was planned for 2023 took place in Harmancık Çatalsöğüt (Bursa province) with the participation of the public and other relevant stakeholders on 31 May 2023. The exercise was scripted and conducted in accordance with the Community Based Emergency Management Plan Procedure. The drill was managed as CS 5 centred and recommendations and areas for improvement were reported by the consultant company.

2.7 Land Acquisition, Involuntary Resettlement and Economic Displacement

2.7.1 Status

The total number of parcels subject to land acquisition is 29,146. To date a total of 99.8% of public and private parcels have been registered in the name of the LRE. Of the 21,324 private parcels the registration of 99.83% have been completed. These figures are accurate up to August 2023 and fluctuate due to a number of parcels that are adjusted in relation to land consolidation and cadastral renewal.

There is also additional land being acquired due to planned works relating to rip rap installations, slope breakers, drainage channels, and such facilities. Due to complaints related to slope breakers that are currently being examined, additional unplanned acquisition of parcels will also be required.

2.7.2 Compensation

Expropriation has been completed. All compensation payments have been made by the Land Rights Entity (LRE), the entity designated to manage and execute all land acquisition activities and deposited in an escrow account per parcel in compliance with the Expropriation Law.

2.7.3 Grievance

See Section 2.9.2, which includes grievances related to RAP/LRPs.

2.7.4 Resettlement and Livelihoods Planning and Implementation

Additional land acquisition for operational works is ongoing, with a current focus on expropriation of land for slope breakers. To date 41 complaints relating to slope breakers were investigated. Twenty-nine (29) have been closed and 12 remain open. Land on which slope breakers are located will be permanently acquired in nine (9) cases. And for the remaining three (3) cases the breakers will be removed. The IESC interviewed communities where there was loss on income resulting from slope breakers and TANAP is committed to compensate as relevant.

2.7.5 Monitoring

The RAP End Term Impact Evaluation (RETIE) was previously finalized and disclosed[6]. Implementation of corrective actions is ongoing and these activities are shown in the figure below:

[6] https://www.tanap.com/store/file/e23d13df65a22491fa49ddce8d4bda02.pdf

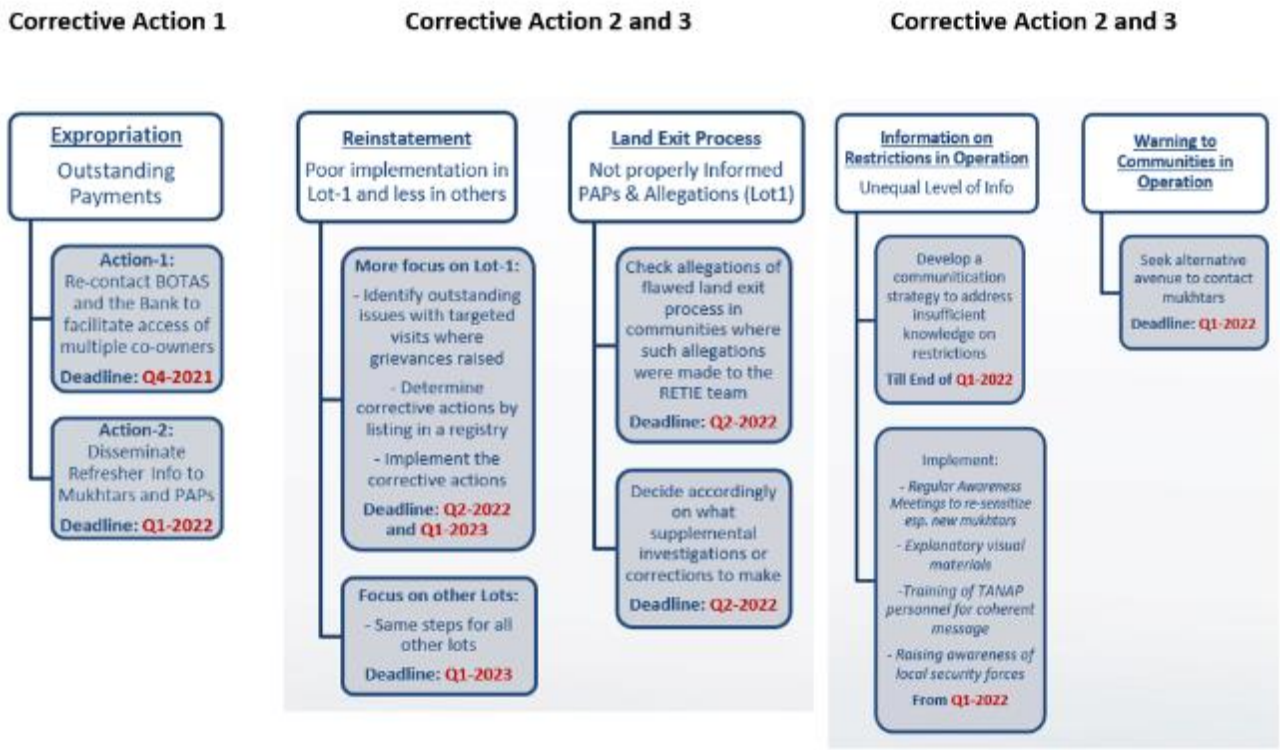

Figure 2.24 Summary of RETIE Corrective Actions

Corrective Action 1: Expropriation: Outstanding payments

As a follow up action TANAP's corresponded with BOTAS regarding the agreement between BOTAS and the Ziraat Bank (the bank holding expropriation compensation payments in escrow) as a reminder of the process for PAPs to access their compensation (TANAP-TNP-LET-BOT-1154). It was reported that in some cases the bank does not issue the registered landowner with the compensation amount unless all the registered landowners for a specific parcel are present at the branch at the same time. This implies that an unknown number of landowners have not received their compensation. To date TANAP has received little over 30 related calls and these were addressed. Even though they could submit complaints, the IESC met with some community members who do not file grievances for this situation. In addition, they do not phone the complaints tollfree hotline because the number is not tollfree when called from a mobile phone. It may be because the amount is simply not worth the effort, however, this cannot be confirmed. An added challenge is that the remaining money in escrow will be returned to the Ministry of Treasury and Finance following a specified time. TANAP has in the meantime engaged providers of the tollfree number and the system has been updated and now also allow calls from mobile phones to be tollfree. It is recommended that a refresher text reminding of the procedure be delivered to village headmen and landowners to allow TANAP to identify those areas where this is an issue.

Corrective Actions 2 and 3: Reinstatement and Land Exit Process

These corrective actions are being addressed concurrently. This includes addressing poor reinstatement and land exit processes, prioritizing cases in Lot 1. Actions as of September 2022 to August 2023 have been to log any reinstatement-related issues as a means of clearing legacy construction contractor issues. By Lot, cases have been raised as follows:

• Lot 1: issues raised in 48 of 69 settlements (69%) and 14 complaints raised

• Lot 2: issues raised in 94 of 122 settlements (77%) and 14 complaints raised

• Lot 3: issues raised in 39 of 39 settlements (100%) and 7 complaints raised

• Lot 4: issues raised in 58 of 73 settlements (79%) and 7 complaints raised

Complaints raised relate to reinstatement, stony land, or expropriation.

Soil quality assessments were carried out on the relevant parcels and all recovery actions including subsoil ripping and stone removal was completed.

Corrective Actions 4 and 5: Information on restrictions and community contacts during operations

These corrective actions are also being addressed concurrently with most having been visited already and follow up actions completed. This includes additional internal communications actions, including with the security department on how to communicate with local stakeholders (conducted May 2022). Notably most of the community members who were interviewed confirmed that communication from TANAP departments other than SI was efficient and the communication with the integrity department was noted.

While all corrective actions have not been completed in line with the RETIE schedule, the SI team is working through all steps and completion of these remains the priority, and, for close out of construction phase legacy reinstatement issues. TANAP is commended for progressing these actions in a systematic and thorough manner considering the limitations faced with engagement opportunities and the large areas covered by the SI representatives.

2.8 Cultural Heritage

2.8.1 Assessment

This aspect was not assessed as part of the virtual visit.

2.8.2 Consultation

This aspect was not assessed as part of the virtual visit.

2.9 Disclosure and Stakeholder Engagement

2.9.1 Stakeholder Engagement

The relevant TANAP stakeholder engagement systems are in place and functioning adequately. Information disclosure continues to focus on key milestones e.g., land use restrictions, operational safety, etc. as is expected for this phase of the project.

All the stakeholders met by the IESC during the visit confirmed that they receive and are aware of relevant information and have clear communication channels with TANAP as needed. During the meetings it was confirmed that the SI representatives visited the villages at least once per year with many commenting that visits took place two or more time per year. In addition it was noted that the representatives were always available via mobile.

Having said that, TANAP does face challenges in terms of the timing of stakeholder engagement as villagers do not want to be disturbed during the agricultural months. In addition, many of the households generally leave the villages following harvests and few stakeholders remain. The window to visit all the villages is therefore a challenge.

During discussions with the TANAP team the role of the Muhtar as key point of contact was also recognized as a potential challenge since not all stakeholders trusted or supported the relevant Muhtar of the community to convey relevant messages and to represent their interests. TANAP is aware of the villages where this could be an issue and has communicated relevant contact details to a broad range of community members.

TANAP's key performance indicators for social impact performance includes the number of community meetings. In Q1/2023, a total of 142 community meetings were conducted (January 18, February 24 and March 100). In Q2/2023, a total of 134 community meetings were conducted (April 18, May 28 and June 88). With the start of the agricultural season attendance is lower than expected.

The Annual Stakeholder Engagement meeting was held in the Sivas Province on 26 January 2023. The meeting included various levels of government, companies and non-government stakeholders. The session included an informative presentation, followed by a question-and-answer session.

The IESC notes that the SEIP program remains in demand from stakeholders and although this expectation will likely disappear in time, there are still many requests to TANAP for community investment programs. The current SEIP program continue to support a small number of targeted projects, while on a substantially reduced scale during this operations phase. The IESC commends the team for their effort to support sustainable development projects.

Key engagement topics at this phase of operations relate to: land use conditions; land use violations and permitting; community health and safety (see Section 2.6); and maintenance activities.

2.9.1.1 Land use conditions and violations

Landowners and users are continuously reminded about restrictions prior to, and following, any violations. Although information meetings are being held less often along the pipeline for this specific topic, TANAP has distributed information brochures and posters and in many of the communities visited these posters were displayed in public areas e.g., the local mosque (see Section 2.9.2). Stakeholders also reported a broad awareness of restrictions although these might not always be popular.

The ROW patrol teams continue to report violations and the security team's remote monitoring from the MCC allows the Project to immediately become aware of possible violations along the pipeline. This is resulting in an increase in the number of permits being applied for by Landowners and users, and trigger the relevant response. Often the local Muhtar is contacted, or the gendarmerie requested to follow up on activities that may be in violation of the restrictions. As reported previously the SI team is supporting owners and users to complete the necessary permit application forms and the majority of applications are for opening water channels. Although the SI team is making considerable efforts to support users with the permit system to keep violations to a minimum, this procedure has varying success along the pipeline.

2.9.1.2 Maintenance activities

Maintenance activities increase in the summer period, and TANAP's SI team reports that their work includes provision of information about the type and duration of maintenance work. Maintenance work includes line marker repairs/installation and pipe locator readings (i.e. low impact activities requiring at most hand tools to conduct the work), through to works requiring mechanical equipment (e.g. subsidence repairs). The IESC notes that the land access management procedure (TANAP Operation Phase Land Access Management Procedure (Land Entry, Land Exit and Compensation), TNP-PCD-LAC-GEN-004) is key to guiding compensation and damage as appropriate. The General Principles of this procedure are, reasonably, pipeline-focussed, and has been updated to also consider associated vulnerability of households affected by land re-entry/maintenance during operations. Additional support provided to vulnerable households should be appropriate to the nature and the scale of the impact to their affected land, e.g., if work is conducted on the pipeline results in the loss of a subsistence crop that would leave a household more vulnerable, then TANAP could provide special support to ensure compensation is accessible. TANAP should consider thresholds for support, e.g., if works are conducted prior to harvest, or damage more than 50% of a household's crop, or work requires mechanical equipment to be used on the land.

2.9.2 Grievance management

The grievance close-out rate target for Q1/2023 was 75% and 100% was achieved, while in Q2/23 the target was 75% and again a 100% was achieved. The project total complaints since commencement is now 5,604 received compared to 5,493 on the previous IESC visit, therefore approximately 211 received for the year. Of these, 5,556 have been closed and 48 complaints are yet to be closed. Of these, 41 are overdue, predominantly relating to reinstatement (30 cases, or 73%). Most of these are about stones and levelling issues. One topic of grievances that required specific investigation related to slope breakers. After geotechnical investigation in each slope breaker grievance case, the case is either closed with compensation (for temporary cases, relating to the duration the slope breaker has been in place), or where slope breakers are permanently needed, permanent land acquisition is instigated. See s.2.7.4 regarding permanent land acquisition of slope breaker grievances. There have been no issues raised with this approach by landowners/users.

Further to the previous audit, whereby the 'waiting' status was identified as a reason for substantial numbers of overdue complaints, TANAP has reported that the grievance status is now open or closed and the 'waiting' status is now not used to avoid confusion/delayed action. If the deadline is extended in the grievance management system (eBA), then the stakeholder is informed of this revision; the procedure also reflects this practice.

2.9.3 Information Disclosure

Information disclosure continuous as required and in particular for Land Use Violations and Community Health and Safety. The land use restrictions are described in writing and in clear pictures to describe various typical scenarios that land users may encounter; TANAP is commended on the clarity of these materials. Materials have been distributed through community informative meetings, to Muhtars, and are also available online[7]. In addition, settlements are informed on Community Based Emergency Management Plan to have prior knowledge on possible emergency cases during pipeline operation TANAP's security and safety measures and steps of emergency management in such cases. Additionally, warnings and notifications are made in cases of project induced situations, e.g., gas leakage, or third party induced situations, e.g., stubble burning.

[7] https://www.tanap.com/en/land-use-restrictions

Figure 2.25 Disclosure materials samples found at the entrance to the mosque

2.10 Biodiversity

2.10.1 Assessment and Identification of Impacts

TANAP has identified the Project risks and impacts on biodiversity and ecosystem services through its ESIA assessment in early phases of the Project development. A priority throughout the Project's ESIA process and construction phase has been the avoidance of potentially adverse ecological impacts. This resulted in numerous design modifications and the development of a suite of mitigation measures to prevent many negative impacts, which were implemented during the construction phase. A detailed Biodiversity Action Plan (BAP), Ecological Management Plans, and Special Areas Reinstatement Methods Statements for all terrestrial and freshwater critical habitats were developed and referenced as a guide to minimize impact and to implement the mitigation hierarchy.

The Project's biodiversity assessment studies and mitigation plans were reviewed during the initial Environmental and Social Due Diligence (ESDD) in 2016. The ESDD found that the initial assessments and management planning for biodiversity did not adequately demonstrate a net gain in critical habitat and no net loss of priority biodiversity features due to the assumption that there were no residual impacts to these habitats and features in the initial planning and assessment documents.

Gaps identified in habitat assessments from the ESDD resulted in specific requirements within the Project's Environmental and Social Action Plan (ESAP). The Project adjusted its BAP to better define and consider residual impacts to critical habitat (CH) and priority biodiversity features (PBF) and the need for offsetting where bio-restoration of the RoW could not fully mitigate disturbance impacts. An Ecological

Management Plan for Operations (TNP-PLN-ENV-GEN-010) has been written and updated in August 2023. The Site-specific Biodiversity Offset Management Plans were written in 2022, for both the forest and steppe offset projects. These have since been updated by TANAP (in 2023), and the updated versions have been received and reviewed by the IESC, and comments made herein.

2.10.1.1 Overhead Transmission Line Impacts to bird species

The IESC's audit in October 2018 observed that not all mitigation measures recommended by the Overhead Transmission Lines (OHL) and anode bed line ESIA for mitigating potential impacts to bird species were implemented due to the assessment report recommendations being available after design and construction of the powerlines. The IESC recommended (in October 2018) TANAP to include the monitoring of impacts to bird species as identified in the OHL environmental assessment and that the performance of any mitigation measures be included in the post-construction monitoring programs for the Project.

TANAP have continued the bird monitoring activities as required by the ESIA of OHLS and Anode Bed Lines. The aim of the bird monitoring study is to assess potential impacts of the OHL to migratory bird species flight behavior and/or if the OHLs cause bird mortality due to collision/electrocution. During the post spring migration monitoring in July 2019, three carcasses of white stork were found in close vicinity of BVS21 OHL. It is believed, from the burn marks on the carcasses, that electrocution after collision with the OHL lines caused the mortality, indicating direct potential impacts to birds from the OHLs.

Based on the Çinar's 2019 monitoring results (16 carcasses found on monitoring routes, 11 likely died due to collision with the transmission lines rather than electrocution) TANAP have continued to commission the bird monitoring in 2020 and 2022 only at BVS21. On all subsequent survey visits (autumn 2019, 2020 and 2021; spring 2020, 2021, and 2022 and summer 2021) no further bird carcasses were observed. Despite this, TANAP continued bird monitoring at this location. It was recommended by the IESC that once the 2022 monitoring has been completed, TANAP with their consultants – ASSYSTEM; should make a decision on the need for further monitoring on this transmission line.

It is now understood that during the 2023 monitoring, five dead birds were found under the transmission line at BVS21. ***It is therefore recommended that bird flight diverters (BFDs) are installed on the line, to make it more visible to birds, so that they can see it and take evasive actions earlier, to avoid collision.*** There are many types of BFDs, some of which are suitable for installation on active power lines, through the use of a drone. The bird diverters should be installed on the line, before the spring movement of birds or as soon as practicable, and the efficacy monitored for a further two years.

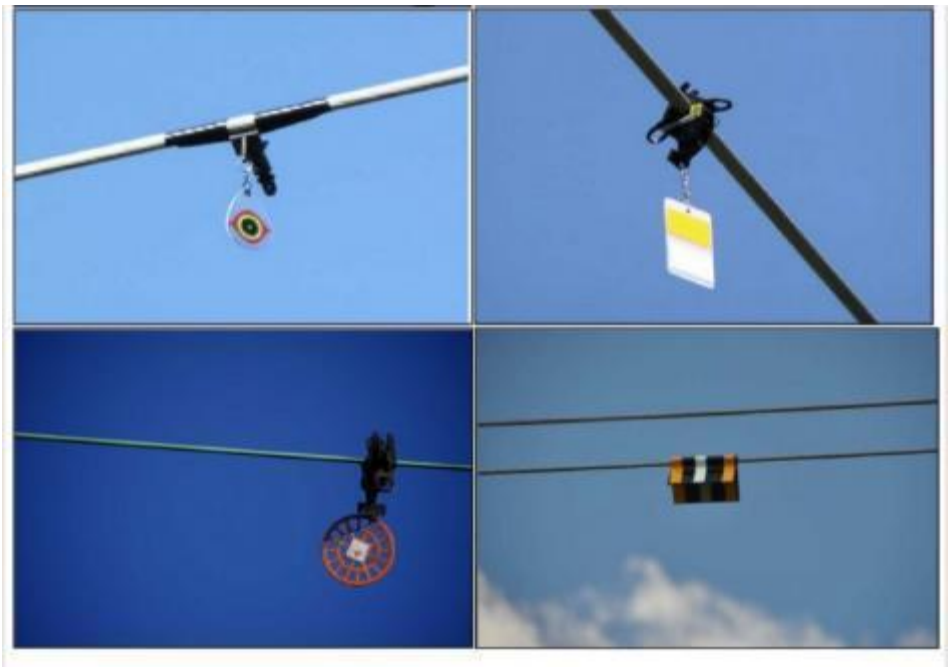

Figure 2.26 Examples of bird flight diverters

2.10.1.2 Residual Impact Assessment

Golder, in collaboration with Çinar, developed a Biodiversity Offset Strategy (BOS) in 2017 with scheduled offset implementation starting in 2019. The strategy did not identify specific biodiversity management actions but identified potential offsets and additional conservation actions in accordance with good international practice to achieve No Net Loss (NNL) or Net Gain (NG) outcomes relative to the residual affects identified for Natural Habitats, Priority Biodiversity Features (PBF) and Critical Habitats (CH). The strategy defined the approach to stakeholder engagement, monitoring and adaptive management, including mechanisms that allow re-calculation of net loss and gains and facilitate adjustments to the offset strategy to achieve the stated objectives.

Further information on the status of the BOS is provided below in Section 2.10.6.3. In summary, the site-specific biodiversity offset management plans have now been produced and are being implemented.

2.10.2 Biodiversity Management Planning

During the construction phase, TANAP implemented the mitigation hierarchy to a good standard. The previous IESC audit and site visits undertaken in October 2018, June 2019, and November 2019 identified no major non-compliances against this performance requirement.

With the completion of the TANAP and TAP interconnection pipeline line-fill activity in November 2019, the Project is now in its operation phase. The Project ESIA identified no significant impacts from the onshore and offshore pipeline operation to terrestrial, freshwater and marine water biodiversity species and habitats. Therefore, the main management measures for biodiversity impacts during operation have

now shifted to monitoring of the bio-restoration success, and to monitoring the recovery of the critical habitat triggering species in critical habitat areas along the pipeline route.

The operational phase also includes the ongoing development and implementation of the long-term biodiversity offset programmes. These represent TANAP's long term commitment to achieve No Net Loss (NNL) or Net Gain (NG) for priority biodiversity features or critical habitats, in habitats that are deemed impossible to fully restore.

The Project Operational Phase Environmental and Social Management System (ESMS) includes the following management documents with regard to biodiversity and ecosystem services management:

- Environmental and Social Management Plan (TNP-PLN-ENV-GEN-001)
- Ecological Management Plan (TNP-PLN-ENV-GEN-010) – updated 01/08/2023
- Environmental Monitoring Plan for Operations (TNP-PLN-GEN-008)
- Biodiversity Action Plan (CIN-REP-ENV-GEN-017-Rev-P3-11)

Previously, each construction contractor had developed management documents for ecological management and monitoring during the two years of warranty period after the pipeline mechanical completion. This has now been completed, and the two-year warranty period has ended.

2.10.2.1 Environmental and Social Management Plan

The ESMP is a comprehensive document providing general a framework approach of environmental management systems of the Project. The ESMP used key principles and management system requirements (i.e. Plan-Do-Check-Act) by the ISO 14001 standard.

2.10.2.2 Ecological Management Plan – For Operations

The Ecological Management Plan for Operations (EMP) (TNP-PLN-ENV-GEN-010) has been updated in August 2023. The EMP is the main management document for ecological impacts during the Project operation. It outlines the processes and measures to be implemented to manage ecological impacts during the Project Operational Phase. Its scope includes minimising habitat disturbance, ongoing bio-restoration activities, biodiversity offsetting, invasive species, pest management, and protecting flora and fauna. The key post-construction biodiversity impact mitigation measures will be the continued maintenance of reinstated areas and the undertaking or implementation of remedial bio-restoration activities, in special areas (i.e. ecologically sensitive areas, critical habitats etc.) identified in the BAP.

The following KPIs relating to biodiversity management during operations have been included in the Ecological Management Plan and updated to include class criteria which can be used to also trigger remedial actions when required.

- Percentage of vegetation ground cover, calculated in terms of original ground cover (post – reinstatement);
- Percentage of RoW meeting Erosion Class 3 criteria or better;
- Number of Project related injured / dead fauna;
- Number of off-ROW disturbances;
- Number of incidents / damages to critical habitats;
- Percentage increase in the number of plant species in conservation and rehabilitation areas (steppe offset projects); and
- Percentage of increase of species diversity in limited implementation zones (forest offset projects).

2.10.2.3 Operations Environmental Monitoring Plan

This plan outlines monitoring requirements of all ecological management activities during the Project's Operational Phase. The implementation of the plan remains the same as when reviewed in 2022, by the IESC team.

The Operations Environmental Monitoring Plan remains the main management tool for TANAP to monitor and document the Project's environmental compliances requirements and identify any issues in the environmental management that need corrective action in a timely manner. TANAP's approach to inspect its environmental impact management measures implementation status, and its processes to assess the management measures effectiveness are summarised in this Monitoring Plan.

TANAP uses the following methods to assess its environmental performances against the Project's environmental commitments during operation:

- Site Inspection:
    - TANAP's site based QHSE personnel (ROW teams) on an at least weekly basis.
- Audits:
    - Internal audit by qualified and approved personnel at least once a year.

- External verification.
    - IESC's annual audit.
    - Annual Biodiversity Offsetting Evaluation by independent third party to evaluate the offsetting activities during operation.
    - Daily RoW patrol and maintenance checks by contracted companies to monitor a range of items including pipeline integrity, conditions of reinstated and biorestoration areas, third party activities along the RoW etc.
- External Audit to Offshore Pipeline Inspection Contractor.

- Action Tracking:
    - All non-conformances identified by the above monitoring programmes to be registered in the Action Tracking System for follow up, corrective action, and close out.

The following monitoring in relation to ecology and biodiversity is included in the Operations Environmental Monitoring Plan:

- Annual Physical Monitoring along the entire RoW giving priority to the environmentally sensitive locations (steep slopes, side slopes, erosion prone areas, critical habitats, river crossings etc.).
- Annual Vegetation Cover and Diversity monitoring at stratified random sampling locations.
- Annual Flora Monitoring in Critical Habitat areas identified by the BAP.
- Annual Terrestrial Fauna Monitoring in Critical Habitat areas identified by the BAP.
- Annual Aquatic Fauna Monitoring in Critical Habitat areas identified by the BAP.
- Annual Reforestation Monitoring within ROW and reforestation offsetting locations.

All ecological monitoring methods, except for the Physical Monitoring, are reflected in the approved BAP (CIN-REP-ENV-GEN-017) and Biorestoration Monitoring Plan (CIN-PLN-ENV-GEN-014) requirements.

During the operational phase, it appears that the key documents now referred to are the Environmental Monitoring Plan for Operations, as well as the Ecological Management Plan for Operations. The monitoring plan has a section on Ecological Monitoring; however, this refers the reader to the Biodiversity Action Plan

and Annex 8 of the Bio-restoration Monitoring plan. Updated versions of these plans have not been received by the IESC team; therefore, they have not been updated yet.

2.10.3 Implementation of Mitigation

The key biodiversity mitigation measures implemented during the Operations Phase are as follows:

- Completion of reinstatement
- Biorestoration and aftercare
- Invasive species management
- Biodiversity offsetting.

The implementation of mitigation has been discussed in the following sections based on a review of available reports and firsthand evidence collected during the site visit.

2.10.4 Restoration and Rehabilitation

By 2021, all bio-restoration and reforestation activities have been completed along the pipeline ROW, so have not been discussed further here in.

2.10.5 Monitoring

2.10.5.1 Summary of ecological monitoring during operations

As reported by TANAP's environmental department during last year's 2022 audit, no significant biodiversity management related non-conformances have occurred to date and no incidents have been recorded in the Action Tracking System.

During previous years, the IESC's review findings of the construction contractors after care monitoring, would have been presented below; however, the aftercare monitoring is now complete for all sections. Therefore, only the ecological monitoring by third party monitoring companies is summarized below.

Even though the aftercare monitoring period has now been completed for Lot's 1 – 4, TANAP have informed the IESC that ongoing monitoring will continue, with the ROW team patrolling the pipeline and reporting on areas where remedial measures are considered necessary, or where incidents have occurred. ***IESC therefore continues to advise that this should continue for the lifetime of the project***. Other more targeted monitoring (such as for the critical habitats) is continuing as stated in the BAP and other documents.

2.10.6 Conservation of Biodiversity

2.10.6.1 Critical habitats

TANAP has engaged with ASSYSTEM for its independent third-party ecological monitoring contractor. ASSYSTEM has responsibility to monitor all CH areas and Species of Conservation Concerns (SCC) along the TANAP pipeline ROW to meet the biodiversity monitoring requirements specified in the BAP.

The BAP includes a critical habitat assessment. There are 67 Terrestrial and 27 Freshwater Critical Habitat areas that have been identified along the Project RoW in the Biodiversity Action Plan (CIN-REP-ENV-GEN-017) for the Project. No Marine Critical Habitat is identified for the Project. The BAP determined impact mitigation and reinstatement measures, monitoring methods/timing, and impact mitigation achievement including criteria for all identified Critical Habitats.

Based on the following ASSYSTEM monitoring reports provided, it is considered that TANAP are meeting the requirements of the BAP.

- Freshwater Aquatic Fauna Monitoring (2022 Period) – ASE-REP-ENV-GEN-083-P4C
- Birds (April-June-October 2022 Period) - ASE-REP-ENV-GEN-082-P4C
- Birds (January-February-March 2023 Period) - ASE-REP-ENV-GEN-085-P4C
- BVS21 OHL Bird Monitoring (September 2022 Period) = ASE-REP-ENV-GEN-085-P4C
- Amphibians (one day search for Mertensiella caucasia) - ASE-REP-ENV-GEN-084-P4C
- Species Conservation Concern, Species Diversity, and Vegetation Cover (2022 Period) - ASE-REP-ENV-GEN-079-P4C
- Physical and Ecological Monitoring Report for Reforestation - ASE-REP-ENV-GEN-078-P4C

As stated previously, the quality of reporting is generally good and informative. The post construction monitoring does give confidence that the mitigation hierarchy and good practices for biodiversity were implemented well.

2.10.6.2 Invasive species

The management of invasive species in the Project RoW was identified in the BAP as a significant threat to achieving bio-restoration throughout the Project. Contractor reinstatement plans include control of invasive species (i.e. planting of native plants and trees, consideration of invasive potential and adverse impacts to native vegetation if new plant species are selected) and monitoring. TANAP's Ecological

Management Plans specified the Invasive and Pest Species control and management actions to be taken when/if required. Section 3.4.8 of the Ecological Management Plan described how TANAP will monitor and manage the invasive species for the Project impacted areas, particularly in high-risk areas such as critical habitat areas.

As botanical monitoring is an ongoing process, it is still TANAP's responsibility (Section 3.4.8 Ecological Management Plan) to determine if invasive species are present and the severity or threats that such a species may pose and to take effective mitigation and management measures if needed. If any invasive species are identified in the coming years, then the species and location should be logged in TANAP's Action Tracking System, so that appropriate action may be taken where required.

2.10.6.3 Biodiversity Offset Planning and Implementation

The Project's BAP and BOS provide a framework for TANAP to achieve a net gain in Critical Habitat as defined by IFC PS6 and no net loss of priority biodiversity features as defined in EBRD PR6. TANAP has contracted Golder to develop the Biodiversity Offset Management Plan (BOMP) to meet IFC PS6 offsetting requirements. Golder completed the additional studies for the development of the BOMP in 2018-2019. These studies included review of legal and institutional framework, refining the baseline value of degradation of natural habitats to improve the accuracy of offset calculation, identification of potential offset sites, and stakeholder consultations for feedback for the BOMP development.

The draft BOMP was shared with EBRD and IESC consultants in February 2020 for review and comments. During the 2023 IESC visit, site visits were organized to both a Forest offset management area and a steppe restoration area.

The Forest Offset Management Plans are currently being implemented. IESC team has also noted that TANAP have engaged with the General Directorate of Forestry (which who we also met during the 2023 site visit), and so have been able to prepare and seek approval for the implementation of the management plans, for the next 20 years. The creation of strict conservation zones, as well as limited implementation zones is a welcome idea. It is understood that these management plans, initially adopted as part of the TANAP offset, have been successful in becoming an example for the wider country, and that other areas are now looking at updating their forestry plans to include biodiversity inputs. Further afield, it is understood that some eastern European countries have also been very interested in implementing a similar system too.

For the Steppe Offset, the IESC team in 2022 commented that they had confidence in the team leading the steppe offset, but that as the measures being implemented are experimental, the timeframe over which a positive outcome may be achieved could be many years (more than 10 – 20 years), and there is always a risk that a positive outcome for biodiversity may not be achieved, even if the management of grazing yields positive social effects. That said, if a positive outcome is achieved, social or biodiversity, it will be

good for TANAP's reputation. Following the 2023 visit, the IESC team were impressed by the level of implementation of the steppe BOS and the level to which the local residents have supported the change in grazing regimes. Although it might be difficult at this time to prove a biodiversity net gain, it was certainly apparent that the local residents, through the work of the project and DKM, thought they were already seeing a positive change. Hopefully in the years to come, this will translate to a measurable increase in biodiversity, through the quadrat based monitoring.

Although the BOS appear to be well implemented and on a trajectory for a positive outcome, it is still important that TANAP undertake the following activities to minimise residual impacts:

- Ongoing monitoring of the right of way:
    - Map to EUNIS standards, to inform habitat reinstatement metrics, update habitat loss table in the BOS, this can be done after 5 years of reinstatement, then consider year 10 too. It is understood that the EUNIS mapping will be undertaken in 2024, and that drone imagery may be used to supplement the mapping, especially in difficult terrain.
    - Implement a scoring system for the right of way, e.g. 1. Target habitat type achieved, no further survey necessary; 2. Target habitat type likely to be achieved, further survey necessary; 3. Vegetation not establishing, remedial action required (seeding/planting). This appears to have been implemented though new KPIs in the Ecological Management Plan.
    - Use measurable indicators should also be recorded to evidence change on the right of way, e.g. floristic diversity, percentage cover of vegetation as an example. The aim is that this will be implemented in 2024.
- For the Steppe Offset, it is understood that for Turkish certification reasons, a range of detailed metrics will be required to assess change in vegetation composition. The number of sample points required (or intensity of sampling) has now been assessed using power analysis and found to be sufficient.
- Although stated in 2022, it should still be considered for the lender's reporting, a simpler set of metrics should be considered, for ease of reporting and providing evidence of the steppe management outcome on a yearly basis. These could include:
    - Annual aerial photography at a set location to monitor percentage cover. Imagery can be compared between years to assess changes in ground cover.
    - Set plots used to determine species composition/species counts.

- Use of a mobile weather station, so that annual, or longer changes in cover/composition may be compared to wind direction/strength, or changes in precipitation.

In summary, the offset plans appear to be being implemented by knowledgeable teams, with for the steppe projects strong support from the local land users where the projects are located. Both offset projects (forest and steppe) if successful, may also be the precursor to much larger conservation projects within Türkiye, which would be beneficial to TANAP's reputation. At the time of writing, it would seem that the forest-based work is already being used as a national and international exemplar.

Appendix A Evidence Register

Document Number	Document Name	Author	Code	Date	Environment/Social/OHS
01	2023 Site visit IESC Pre-Document Request_TNP_23-09-11	Sustainability		September 2023	All
02	QHSSE-OrgChart_2023-07-01	TANAP		July 2023	All
03	TANAP_Operation_EBRD-IESC_2023Monitoring_wo-video.pdf	TANAP		September 2023	All
04	TANAP-WSP_BioOffset_EBRD-IESC_2023Monitoring	TANAP		September 2023	ENV
05	TANAP_ENV_EBRD-IESC_2023Monitoring	TANAP		September 2023	ENV
06	TANAP HS UPDATE_IESC-EBRD_2023Monitoring	TANAP		September 2023	OHS
07	TANAP_SEIP_EBRD-IESC_2023Monitoring	TANAP		September 2023	SOC
08	TANAP_SOCIAL_IMPACT_EBRD-IESC_2023Monitoring	TANAP		September 2023	SOC
09	TANAP_Land_Acquisition_EBRD-IESC2023Monitoring	TANAP		September 2023	SOC
10	ECOLOGICAL MANAGEMENT PLAN FOR OPERATIONS	TANAP	TNP-PLN-ENV-GEN-010	August 2023	ENV
11	POLLUTION PREVENTION PLAN FOR OPERATIONS	TANAP	- TNP-PLN-ENV-GEN-009	July 2023	ENV

12	ENVIRONMENTAL MONITORING PLAN FOR OPERATIONS	TANAP	TNP-PLN-ENV-GEN-008	August 2023	ENV
13	Environment 2023 KPI Target Sheet.ENV	TANAP			ENV
14	2023 TANAP ENV KPIs	TANAP			ENV
15	Physical and Ecological Monitoring Report - Jan-Feb-Mar 2023 Period	ASSYSTEM	ASE-REP-ENV-GEN-085	April 2023	ENV
16	Physical and Ecological Monitoring Report March 2023 Period	ASSYSTEM	ASE-REP-ENV-GEN-084	April 2023	ENV
17	Physical and Ecological Monitoring Report – Reforestation (2022 Period)	ASSYSTEM	ASE-REP-ENV-GEN-078	October 2022	ENV
18	Physical and Ecological Monitoring Report – BVS21 OHL Bird Monitoring Survey Results (September 2022 Period)	ASSYSTEM	ASE-REP-ENV-GEN-081	November 2022	ENV
19	Physical and Ecological Monitoring Report – Terrestrial Flora Monitoring (2022 Period)	ASSYSTEM	ASE-REP-ENV-GEN-079	October 2022	ENV
20	Physical and Ecological Monitoring Report – Birds (April, June, October 2022 Period)	ASSYSTEM	ASE-REP-ENV-GEN-082	November 2022	ENV
21	Physical and Ecological Monitoring Report – Freshwater Aquatic Fauna Monitoring (2022 Period)	ASSYSTEM	ASE-REP-ENV-GEN-083	November 2022	ENV

22	ASSYSTEM Environmental Monthly Report x 4	ASSYSTEM	ASE-PRM-ENV-GEN-053 ASY-PRM-ENV-GEN-001 ASE-PRM-ENV-GEN-055 ASE-PRM-ENV-GEN-054	February – July 2023	ENV
23	GREENHOUSE GAS EMISSIONS REPORT 2022	TANAP	TNP-REP-ENV-GEN-033	March 2023	ENV
24	Incident Initial Notification	TANAP	TNP-HSM-FRM-042	March 2023	ENV
25	ENVIRONMENTAL COMPLIANCE REVIEW REPORT x 4	TANAP	TNP-REP-ENV-MCC-006 TNP-REP-ENV-CS5-008 TNP-REP-ENV-CS3-002 TNP-REP-ENV-CS1-006	March – June 2023	ENV
26	Biodiversity Offset Projects Implementation and Monitoring - POWER ANALYSIS FOR STATISTICAL SIGNIFICANCE	WSP		May 2023	ENV
27	Steppe Offset Plan-Acıkır Gypsum Steppes (Eskişehir)	WSP	GLR-REP-ENV-GEN-024	June 2023	ENV
28	Resilient Steppe Offset Plan– Bursa Kütahya Serpentine Steppes	WSP	GLR-REP-ENV-GEN-030	June 2023	ENV

29	Resilient Steppe Offset Plan – Hafik-Zara Gypsum Steppes (Sivas)	WSP	GLR-REP-ENV-GEN-034	June 2023	ENV
30	TANAP OPERATION LAND ACCESS MANAGEMENT PROCEDURE (LAND ENTRY, LAND EXIT AND COMPENSATION)	TANAP	TNP-PCD-LAC-GEN-004	August 2023	SOC
31	SOCIAL COMPLIANCE REVIEW FOR OPERATIONS x 7	TANAP	TNP-REP-SOC-CS1-005 TNP-REP-SOC-CS1-006 TNP-REP-SOC-CS3-005 TNP-REP-SOC-CS3-006 TNP-REP-SOC-CS5-005 TNP-REP-SOC-CS5-006 TNP-REP-SOC-MS3-006	2022 - 2023	SOC
32	Operation Phase Social Impact Monitoring Report-3 - October 2022 (Eastern Section)	ASSYSTEM	SE-REP-SOC-GEN-005	November 2022	SOC
34	Evaluation of Multiple Impacts of Installations and Additional Support Mechanisms	TANAP	TNP-REP-LAC-GEN-001	January 2018	SOC
35	Letter to the General Directorate of BOTAŞ	TANAP	TANAP-TNP-LET-BOT-1154	September 2021	SOC

	(Department of Construction and Expropriation)				
36	Land Use Violation	TANAP	2023-TNP-IKF-00589	August 2023	SOC
37	Maintenance and Repair Activities	TANAP	2022-TNP-IKF-00224	July 2022	SOC
38	Land Use Restrictions	TANAP	2022-TNP-IKF-00570	September 2022	SOC
39	Community Health and Safety	TANAP	2023-TNP-IKF-00321	March 2023	SOC
40	MANAGEMENT PLAN FOR THE IMPLEMENTATION OF SOCIAL AND ENVIRONMENTAL INVESTMENT PROGRAMME (OPERATION PHASE)	TANAP	TNP-PLN-SEP-GEN-001	February 2022	SOC
41	H&S Statistics_2023	TANAP		2023	OHS
42	O&M Incident Register - From 1st January 2023 - 31st December 2023.pdf	TANAP		2023	OHS
43	Site Emergency Response Exercise Report x 18	TANAP	TNP-OPR-TMP-019_MCC-001 TNP-OPR-TMP-019_MCC-002 TNP-OPR-TMP-019_MCC-003 TNP-OPR-TMP-019_MS3&MS4_001 TNP-OPR-TMP-	2023	OHS

			019_MS3MS4_001 TNP-OPR-TMP-019_HQ-001 TNP-OPR-TMP-019_ CS5&MS2-ERD-2023_004 TNP-OPR-TMP-019_ CS5&MS2-ERD-2023_003 TNP-OPR-TMP-019_ CS5&MS2-ERD-2023_002 TNP-OPR-TMP-019_ CS5&MS2-ERD-2023_001 TNP-OPR-TMP-019_CS3AMC_003 TNP-OPR-TMP-019_CS3AMC_004 TNP-OPR-TMP-019_CS3AMC_002 TNP-OPR-TMP-019_CS3AMC_001 TNP-OPR-TMP-019_MS1&CS1_002		

			TNP-OPR-TMP-019_MS1&CS1_001 TNP-OPR-TMP-019_CS1MS1_003 TNP-OPR-TMP-019_CS1&MS1_004		
44	TANAP CS6 Çatalsöğüt Drill Report	TANAP		May 2023	OHS
45	BVS 19 ULAŞIM YOLUNDA YÜZEY BOZUKLUĞU	TANAP			OHS
46	BVS-19 risk assessment example (Turkish)	TANAP	HED-REP-HSM-GEN-014-08	November 2019	OHS
47	ROAD RISK ASSESSMENT REPORT KADIKÖY – BVS 19 ALTERNATIVE ROAD (Turkish)	TANAP	HED-REP-HSM-GEN-023-02	October 2022	OHS
48	Tanap_KIS_SURUS_GUVENLIGI-Winter Driving Safety	TANAP			OHS
49	River Crossing Survey Service Report (2022)	Temelsu	TMS-REP-OPR-GEN-047	December 2022	ENV
50	Landslide Survey Service Report (2022)	Temelsu	TMS-REP-OPR-GEN-044	December 2022	ENV
51	Land And Slope Erosion Survey Service Report (2022)	Temelsu	TMS-REP-OPR-GEN-046	January 2023	ENV
52	Karst Survey Service Report (2022)	Temelsu	TMS-REG-OPR-GEN-045	November 2022	ENV

53	ROW PATROLLING DAILY REPORTs / GÜNLÜK RAPOR	Botas, Ptt Anadolum			ENV
54	Action status follow-up_TNPupdates	TANAP	SPL-REP-HSE-GEN-006-	August 2023	All
55	TANAP STATIONS (MANNED) VIDEO SURVEILLANCE AND ACCESS CONTROL SYSTEMS POLICY	TANAP	TNP-POL-SEC-GEN-005	November 2022	SOC

Appendix B 2022 Findings Summary Table

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Update	Status
1.4	The next review of the Operation Phase Land Access Management Procedure (Land Entry, Land Exit and Compensation) should consider and document how vulnerable households should be assessed and considered in implementation of the Procedure.	TANAP has an obligation to ensure disadvantaged or vulnerable groups or individuals are not disproportionately affected by the project; Any additional support provided to vulnerable households should be appropriate to the nature and the scale of the impact to their affected land	PC	PR1/Vulnerable affected stakeholders	This concern was assessed as recommended and covered in the revised version of the TANAP Operation Land Access Management Procedure. The revised version is also uploaded under folder for IESC Team consideration. Closed during this assessment	Closed
1.6	Issue for consideration: Annual independent third party ESIA monitoring is advised to be conducted in the eastern section of the pipeline (i.e. east of the MCC).	Monitoring of social commitments of the Project by a third party is conducted bi-annually; it is suggested that this be conducted both in the east and western sides	FC	PR1/Social Monitoring Plan for Operations	This recommendation was considered in the following TPMC's social impact monitoring carried out in October'22. The Report (ASE-REP-SOC-GEN-005 P4-B) uploaded under the SOC folder covered the Eastern section of	Closed

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Update	Status
		of the pipeline, given substantial differences in issues and operating context and ensure that benefits of third-party assessments can be fully realised by TANAP. Both IESC and TPMC reviews were carried out in the western sections in 2022 to date.			the pipeline. Closed during this assessment	
3.1	There are no KPIs in the EMP relating to resource efficiency. As such, there is no requirement for TANAP to measure or demonstrate performance (or improvements in performance) in relation to this element of PR 3.	TANAP should revise the EMP to include appropriate KPIs in relation to water and energy consumption.	FC	PR3 / Environmental Monitoring Plan for Operations	EMP was revised and KPIs in relation to water and energy consumption were added. Revised EMP was uploaded into the own cloud system. Closed during this assessment	Closed

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Update	Status
3.2	Soil erosion issues at KP 1518+302 are being exacerbated by surface water run-off following the natural contours of the slope towards the gully running parallel to the lateral slope of the RoW. gully at the foot of the lateral slope. This is within Government controlled Forestry land and TANAP are not permitted to divert water from the RoW into this gully.	TANAP attempts to negotiate with the relevant Government Department to allow run-off to be discharged into the natural gully.	FC	PR 3	Slope breaker arrangement and extension operations were carried out by using the construction corridor at the maximum level without cutting trees and by considering the condition of making superficial arrangements up to a maximum depth of 30cm in the forest part. Similarly, in the construction period, a narrower construction corridor along the pipeline route on forestry areas and orchards was determined. While a 36 m wide construction corridor was opened along the route, this construction corridor was limited to 30 m wide in forest areas, to ensure that fewer trees were cut and, as a result, natural vegetation was preserved in a larger area. Thus, a total of 126 hectares of	Closed

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Update	Status
					forest, approximately the size of 180 football fields, was protected Closed during this assessment	
4.2	During the visit to the MCC the IESC was able to observe the CCTV camera system that allows TANAP to monitor, track and manage unauthorized activities around any of the stations across the pipeline. The IESC noted that the cameras are extremely powerful and are equipped with a zoom magnitude of up to 30x. This does raise potential concerns with regard to privacy issues as there are public and private residences within sight of	The IESC would recommend that a documented CCTV privacy procedure be implemented regarding the use of the CCTV camera which clearly outlines what is considered appropriate and inappropriate for the cameras to record. The policy should also contain a clear chain of custody for any footage obtained and under what circumstances this footage may be kept	FC	PR 4	TANAP provided the TANAP Stations (Manned) Video Surveillance and Access Control Systems Policy. This has satisfied any privacy concerns raised last year and this action has been closed.	Closed

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Update	Status
	the cameras that may have unwanted footage captured.	longer than the 30-day standard period.				
6.4	Although it was supposed to be reviewed in 2022, the BAP has not been supplied to the IESC this year. It is understood that to keep the BAP current, it will still need to be reviewed in 2023, and retained as a document to inform the measures needed if and ongoing or new construction activities are required during the operational phase	While the need to review the BAP is not considered a compliance issue, IESC recommends that the BAP is reviewed once updated. .	FC	PR6	The BAP has been revised in the 2023 report as so this observation has been closed.	Closed
6.6	Both the forest and steppe offset plans have been written and are being implemented. The proposed monitoring	For lender reporting, a simple set of metrics needs to be developed, so that for the steppe	PC	PR6	Power Analysis for Steppe Habitat Projects" and the "Revised Steppe Offset Management Plans" were uploaded in the "Biodiversity	Open

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Update	Status
	methodology is quite complicated, and still requires a power analysis to determine sufficiency of plots to allow a statistically significant outcome. The offset need will change as the ROW re vegetates. This data is currently not being captured in the BOS residual impacts table, but following the EUNIS surveys in 2023 this can be updated.	management, changes can be measured and reported on more easily. To determine if the offset requirements are being met (for no net loss/net gain) a ROW EUNIS habitat survey should be undertaken (ear 5), so that the residual impacts table in the BOS can be updated.			Offset Projects" folder of the own cloud system. This recommendation remains open as the operation monitoring was started at the beginning of 2019. So, the EUNIS habitat survey will be undertaken in the year 2024	