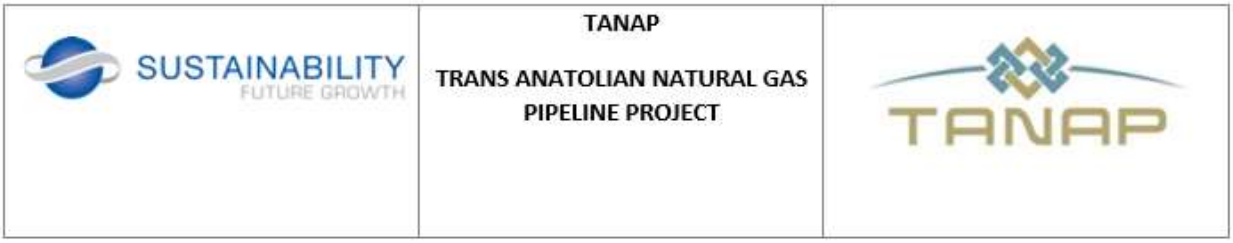

IESC Monitoring Report October 2022

Rev	Status	Date	Status Description	Issued by	Checked by	Approved by	TANAP Approval
P6-A	DIC	12.10.2022	Discipline Internal Check	MARA	THOH	THOH	
P6-B	IDC	13.10.2022	Inter-discipline Check	MARA	THOH	THOH	
P6-C	IFR	18.10.2022	Issued for Review	MARA	THOH	THOH	
P6-D	IFR	19.10.2022	Issued for Review	MARA	THOH	THOH	
P6-E	Re-IFR	28.10.2022	Re-Issued for Review	MARA	THOH	THOH	
P6-0	IAA	31.10.2022	Issued as Approved	MARA	THOH	THOH	

DOCUMENT REVISION HISTORY

REV.	REVISION DESCRIPTION	DATE ISSUED	UPDATE / AMENDMENT DETAILS
P6-A	DIC	12.10.2022	Discipline Internal Check
P6-B	IDC	13.10.2022	Inter-discipline Check
P6-C	IFR	18.10.2022	Issued for Review
P6-D	IFR	19.10.2022	Issued for Review
P6-E	Re-IFR	28.10.2022	Re-Issued for Review
P6-0	IAA	31.10.2022	Issued as Approved

HOLDS

No.	Section	Description	Input From	Planned Date

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Tables

Figures

Acronyms and Abbreviations

AFAD	General Directorate of Disaster and Emergency Management
AGI	Above-Ground Installation
AGSC	Azerbaijan Gas Supply Company Limited
AIIB	Asian Infrastructure Investment Bank
BAP	Biodiversity Action Plan
BOS	Biodiversity Offset Strategy
BOMP	Biodiversity Offset Management Plan
BScm	Billion Standard Cubic Meters
BVS	Black Valve Station
CC	Construction Contractor
CBEMP	Community-Based Emergency Management Plan
CEMS	Continuous Emission Monitoring System
CH	Critical Habitat
CS	Compressor Station
CST	Offtake Compressor Station
EBRD	European Bank for Reconstruction and Development
EEC	European Economic Community
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EMP	Environmental Management Plan
EPC	Engineering, Procurement and Construction
EPS	Equator Principles
ER	Emergency Response
ERMP	Employee Relations Management Plan
ERT	Emergency Response Team
ES	Environmental and Social
ESAP	Environmental and Social Action Plan
ESCH	Environmental, Social and Cultural Heritage
ESDD	Environmental and Social Due Diligence
ESHS	Environmental, Social, and Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
EU	European Union
FC	Fully Compliant
FLRP	Fishing Livelihood Restoration Plan
GHG	Greenhouse Gas
GIS	Graphical Information System

H&S	Health and Safety
HR	Human Resource
HQ	Headquarter
HSE	Health, Safety and Environment
IBRD	International Bank for Reconstruction and Development
ID	Information disclosure
IESC	Independent Environmental and Social Consultant
IESCS	IESC Services
IFC	International Finance Corporation
IFI	International Financial Institutions
IMP	Integrity Mapping Platform
IPMT	Integrated Project Management Team
ISO	International Organization for Standardization
IUNC	International Union for Conservation of Nature
JV	Joint Venture
KBA	Key Bird Area
KP	Kilometre Point
KPI	Key Performance Indicator
LAC	Land Acquisition and Compensation
LC	Least Concern
LEP	Land Exit Protocol
LRE	Land Rights Entity
LRP	Livelihood Restoration Plan
MOU	Memorandum of Understanding
MoEU	Ministry of Environment and Urban Planning
MP	Management Plan
MS	Metering Station
MTI	Medical Treatment Injury
MSDS	Material Safety Data Sheet
NEBOSH	National Examination Board in Occupational Safety and Health
NG	Net Gain
NGO	Non-Governmental Organisation
NNL	No Net Loss
NT	Nearly Threatened
OHL	Overhead Transmission Lines
OHS	Occupational, Health and Safety
OP	Operating Policy
OSID	Online Stakeholder Interaction Database
PA	Provisional Acceptance
PAP	Project-Affected Person
PBF	Priority Biodiversity Features
PC	Partially Compliant

PCC	Pipeline Construction Contractor
PEP	Project Execution Plan
PLK	Punj Lloyd – Limak – Kalyon
PPE	Personal Protective Equipment
PR	Performance Requirement
PS	Performance Standard
PTs	Patrolling Teams
PTW	Permit to Work
PWTP	Potable water treatment plants
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
SARMS	Special Area Reinstatement Method Statements
SCC	Species of Conservation Concern
SE	Stakeholder Engagement
SEP	Stakeholder Engagement Plan
SI	Social Impact
SME	Small medium enterprise
SMP	Social Management Plan
SOP	Standard Operating Procedure
SOW	Scope of Work
SPA	Special Protection Area
SPS	Safeguard Policy Statement
Sustainability	Sustainability Pty Ltd
TANAP	Trans Anatolian Natural Gas Pipeline Project
TAP	Trans Adriatic Pipeline
TPMC	Third Party Monitoring Company
VU	Vulnerable
WHO	World Health Organisation
WB	World Bank
WWTP	Wastewater Treatment Plant

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 a return to 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 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 IESCS 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 Operations Environmental Monitoring Plan (EMP (TNP-PLN-ENV-GEN-008). As well as internal audits/inspections and monitoring, the Project employs a number of third parties to monitor and report on environmental performance. Ten right of way (RoW) Patrol Teams (sub-contracted by Botaş) make visual inspections of the pipeline corridor every 15 days to check for third party infringements, surface conditions and soil erosion. Geo-hazard monitoring is undertaken on an annual basis by the Contractor Temelsu, focused on soil erosion on steep slopes, karstic regions, river crossings and areas where there are landslide risks. Additionally Assystem-ENVY conducts monthly measurements of wastewater quality at the Station treatment plants, to verify compliance with the threshold values within the Project Standards. The IESC is confident that the scope of environmental monitoring is adequate and appropriate to identify any risks to the integrity of the pipeline or potential pollution risks.

TANAP has developed environmental Key Performance Indicators (KPIs) for the Operational Phase of the Project, which are defined in Annex 3 of the EMP. The data provided to the IESC for May – July 2022 indicates that TANAP achieved 100% of the target performance against the vast majority of KPIs in the EMP. Breaches of wastewater quality threshold values for Total Nitrogen and Phosphorus against adopted Project Standards were not captured as non-compliances under the KPIs or reported as such by Assystem-ENVY. This is because Turkish regulations and Council Directive 91/271/EEC of 21 May 1991 concerning Urban Wastewater Treatment specify that threshold values only need to be met, and N and P removal undertaken, if the receiving environment is categorized as ‘sensitive’. As the TANAP receiving environments for wastewater discharges are not sensitive, the adopted Project Standards are not applicable, the results are not reported as KPIs and they are monitored as guiding values only.

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. The TANAP Team is now 354 people, (18% of whom are women).

Social Inductions/Refresher trainings have continued to be organised for workers by the Site Social Impact Specialists; almost all trainings required are up to date (90% or more) at each site as of May 2022.

Five worker complaints were received since December 2021, all of which were registered and have been closed. No grievances have been raised about security personnel conduct.

PR 3 Resource Efficiency, Pollution Prevention and Control

Resource efficiency is clearly being given a high priority by TANAP and it was acknowledged by Station managers that it will be important to take further actions where possible to reduce water and energy consumption. The Main Control Centre has achieved LEED Gold Certification, requiring a significant focus on reducing energy consumption and waste, and managing resources efficiently. However, there are no environmental KPIs relating to resource efficiency and as such, there is no requirement for TANAP to measure or demonstrate performance (or improvements in performance) in relation to this element of the Lender's Standards. It is therefore recommended that the EMP is revised to include appropriate KPIs in relation to water and energy consumption.

The IESC can verify that operations phase Management Plans and Procedures in relation to waste/materials management and pollution prevention are being effectively implemented at the facilities visited. The IESC observed excellent waste and hazardous materials management practices at both CS5/MS2 and the MCC.

There have been two minor environmental incidents in 2022, due to oil leaks from hydraulic hoses on equipment and vehicles being used on site. In both cases, as soon as the leaks/spills were noticed work was stopped, the spills were cleaned up and any contaminated soil disposed of correctly. The IESC is comfortable that the level of awareness amongst TANAP and contractor workers in relation to the importance of preventing and cleaning up spills/leaks of oil (and other pollutants) is adequate and that appropriate actions have and will be taken in the event of any future, similar incidents.

Greenhouse gas emissions are being calculated and reported in line with Project commitments. Total GHG emissions for 2021 were 87% higher than 2020. This is mainly due to emissions from stationary natural gas consumption increasing by 533% (due to the commercial launch of gas transmission to TAP on December 31 2020 and the CS1 and CS5 main compressors being operated at full capacity). However, GHG emissions have decreased for electricity consumption by 12%, for mobile combustion by 6% and for vented emissions by 8% compared to 2020.

There are expected to be on-going geo-hazard risks and impacts across the Project that will need to be monitored and managed on a continuous basis, especially in those Lots where the pipeline passes through more challenging mountainous and karst landscapes or, as at KP1518+802, the soil has very high erosion potential. The IESC is comfortable that the TANAP Geo-Hazard Lead has a good understanding of the geo-hazard risks across the Project and in addition to the SME surveys and RoW Patrols, ad-hoc inspections are being conducted by this individual to ensure that areas of concern are under close monitoring; to help ensure that any immediate risks to the integrity of the pipeline will be detected and can be addressed.

PR 4 Health and Safety

OHS

TANAP OHS systems, implementation and compliance remain very good in all areas sampled at the time of this assessment. TANAP OHS statistics remain industry best practice with no recordable incidents for the period under review resulting in a zero LTIFR and TRIR which is highly commended. Near miss reporting remains in place and well implemented.

The internal audit process was reviewed and frequency of assessments, findings, actions and action register remain well implemented and managed and the closure rate of actions is commended.

The road safety management initiatives are highly commended as is the level of validation.

Emergency response exercises frequency has improved dramatically since the last (virtual) assessment and all were well documented with improvements and actions noted.

Social

Disclosure and distribution of the Community-Based Emergency Response Plan (CBERP) has been completed in AGI-affected settlements through community informative meetings; disclosure meetings with pipeline-affected settlements have commenced. Informative materials have been updated and are provided at all meetings. 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.

PR 5 RAP and LRP

Social

Implementation of corrective actions identified under the RAP End-Term Impact Evaluation (RETIE) are continuing. Corrective Action 1 relates to outstanding expropriation payments; this is being facilitated by communications with BOTAS and the bank holding compensation payments in escrow. An additional 30 landowners have been assisted to access their compensation. Corrective actions 2 and 3 relate to reinstatement and land exit processes which are being addressed concurrently. Actions as of summer 2022 have been to log any reinstatement-related issues as a means of clearing legacy construction contractor issues. Issues were raised in 51 (out of 303) settlements, with 38 complaints registered relating to reinstatement, stones in the parcel, or expropriation. 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. Clear criteria are being applied to determine which villages are to be prioritized for physical inspection. More than 100 settlements have been identified, most of which have now been visited and follow up actions completed. 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. Though it is noted that the BAP was due for update in 2022, and the updated version has not been received by IESC. TANAP has continued, as recommended by the IESC's audit in 2018, its monitoring of high-risk areas along the OHL to identify risks to bird species from the OHL operation. The spring 2022 monitoring again showed no evidence of avian collision. TANAP is now required to make a decision on additional impact mitigation measures, and the need for ongoing motoring for this OHL section.

The post-construction biodiversity monitoring requirements are specified in TANAP's Operations Environmental Monitoring Plan, which details all environmental monitoring and audit requirements and roles and responsibilities involved parties. The operations biodiversity monitoring works are being undertaken by ENVY. The faunal reports have been reviewed and found to be well written and comprehensive. The 2022 botanical report and the 2022 aquatic survey reports were not provided at the time of review, though it is understood that both surveys have already been undertaken.

The Site-specific Biodiversity Offset Management Plans have now been written and implementation begun by TANAP. The Forest Offset Management Plan is progressing well, following consultation with the General Directorate of Forestry. The Steppe Offset Management Plan is also being implemented and is experimental in nature.

The 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, 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. 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. The IESC notes that most applications are to open water channels. However, the IESC also notes that planting trees in the ROW is a consistently registered violation. TANAP is recommended to deliver targeted engagement most relevant to the types of infringements and their locations; types and locations can be informed by TANAP's database of infringements obtained from MCC, patrolling and SI teams.

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 and is currently being updated. The IESC recommends that TANAP consider how potentially vulnerable households can be better identified, and where necessary, supported, in the event that any land entry work increases a household's vulnerability. Any support should be appropriate to the nature and the scale of the impact to their affected land.

Third party monitoring has commenced for the operations phase, carried out by consultant, Assystem-ENVY, 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 should prioritise review of the eastern section of the pipeline to account for how TANAP is performing in this area which had challenges during construction and RETIE corrective actions are prioritising; the two most recent have focused on the western side thus may not be representative.

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
1.4 (2.9.1.2)	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	Open
1.6	Issue for consideration: Annual independent third	Monitoring of social commitments of the	FC	PR1/Social Monitoring	Open

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
(2.3.4.6)	party ESIA monitoring is advised to be conducted in the eastern section of the pipeline (i.e. east of the MCC).	Project by a third 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.		Plan for Operations	
3.1 (2.3.4.1)	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	Open
3.2 (2.4.2.1)	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	TANAP attempts to negotiate with the relevant Government Department to allow run-off to be discharged into the natural gully.	FC	PR 3	Open

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
	controlled Forestry land and TANAP are not permitted to divert water from the RoW into this gully.				
4.2 (2.5.3.7)	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 cameras that may have unwanted footage captured.	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 longer than the 30-day standard period.	FC	PR 4	Open
6.4 (2.10.2.3)	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	While the need to review the BAP is not considered a compliance issue, IESC recommends that the BAP is reviewed once updated. .	FC	PR6	Open

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
	to inform the measures needed if and ongoing or new construction activities are required during the operational phase				
6.6 (2.10.6.3)	Both the forest and steppe offset plans have been written and are being implemented. The proposed monitoring 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.	For lender reporting, a simple set of metrics needs to be developed, so that for the steppe 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.	PC	PR6	Open

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 Turkey from 8 - 12 October 2018. This report presents the findings of the sixth monitoring event which consisted of a site visit and document review after two years of remote assessments. The site visit was completed from 26 – 30 September 2022. 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 five previous annual monitoring visits from 2017 – 2021.

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 Turkey 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 Turkey 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 Turkey 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 Turkey 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 (26 – 30 September 2022), 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 2022 a total of 17.67 BScm of gas has been successfully delivered to BOTAŞ and a total of 15.46 BScm of gas has been successfully delivered to AGSC.

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:

- Presentations prepared by TANAP teams focused on Project Overview, 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 Construction 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.

For this assessment OHS, environmental and biodiversity monitoring was undertaken as using document review, presentations and photographic evidence. Social monitoring was undertaken as a document review, presentation, photographic evidence and video calls with PAPs.

1.6 Site Assessment Attendance

The site assessment was conducted from the 26 to 30 September 2022 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;
- Amy Sexton: Independent Consultant Team Social, labour and Cultural Heritage Specialist; and
- Aleksa Marinovic: Independent Consultant Team Environmental and Project Manager.

1.7 Presentations Site Assessment Schedule

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

Sessions	SCOPE
DAY - 0	**September 21, 2022 Wednesday**

Welcome & Opening Presentation	Opening speeches Approach/methodology and focus of this Monitoring
Overall Progress	Safety Moment Overall updates (Works in Operation Phase)
DAY - 0	**September 22, 2022 Thursday**
Environment Presentation	Organizational Structure and R&R Update on environmental performance Environmental monitoring findings
OHS Presentation	Organizational Structure and R&R HS figures update including sites
DAY - 1	**September 26, 2022 Monday**
Visit to Gonen River	Visit to Gonen River (KP 1658+300) [Verification Site] Observed river crossing (RVX1_0014) + critical habitat (FCH) + Riprap + SB + HM
Social Settlement Visit	Balıkesir - Gönen - Ulukir settlement
Social Presentation	Organizational Structure and R&R Update on Social performance
DAY – 2	**September 27, 2022 Tuesday**
Verification sites and CS6/PS7	Visit KP1518+302 (RVX4_0686) Visit KP1502+800 (nearby RVX4_5116) [Verification Sites] Visit CS6/PS7 at Harmancik [No entry, just observation from outside]
Social Settlement Visit	Settlement Visit (Bursa/ Harmancik/Hopandanisment village)
Verification sites and BVS42	Visit KP1433+300 [Verification Site] Observe road and third-party crossing Visit BVS42 [No entry, just observation from outside] Possible to see road crossing, reinstated lands along the pipeline route around BVS42
Social Settlement Visit	Settlement Visit (Cokkoy Quarter around Domanic)
DAY – 3	**September 28, 2022 Wednesday**
MS2 / CS5 Stations Visit	Site Induction Overall Site Presentation For a group of participants, RED ZONE Visit

	Site Activities: ENV: Implementation of Operational plans (Pollution prevention, Waste Management) HS: Overall review at Station SOC: Interview with workers
Technical Meeting on Biodiversity offsets	ENV & SOC TEAMS and Biodiversity Consultant Team (GOLDER, DKM and Anatolian Pastures) meeting to discuss biodiversity offset management plans and activities.
Community meeting	Community meeting in Yenisofca/Odunpazari district/Eskisehir province with Golder, DKM and Anatolian Pastures
Biodiversity offset area visit	Yenisofça project area with Golder, DKM and Anatolian Pastures.
DAY – 4	**September 29, 2022 Thursday**
Visit Biodiversity offset area	Visit the Gypsum Steppe Acıkır Biodiversity Project areas in Sivrihisar
Social Settlement Visit	Settlement Visit (Eskikarsak/Polatli/Ankara) for overall stakeholder engagement activities and RETIE corrective actions
MCC Visit	Site Induction Overall presentation (Main Security Control and Safety especially for infringements) Overall review of waste management (ENV plans) Interview with workers
DAY – 4	**September 29, 2022 Thursday**
Meetings and presentations	SEIP Meeting session EBRD/IESC 2022 Visit Closure Meeting IESC presentation for preliminary findings and overall evaluation

1.8 Report Limitations and Assumptions

General

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. Further to this, it should be noted that the eastern section of the pipeline from Ankara to the Georgian border has not been assessed by the IESC since monitoring commenced.

OHS

The OHS assessment was a risk-based sample and included physical assessment of conditions in the field, however only one instance of employees working in high risk areas was able to be assessed. The site visit provided a good understanding of systems, processes and physical environment that gave the IESC a high degree of confidence that OHS practices are industry best standard.

Environment

The assessment of on-going geo-hazard risks to the integrity of the pipeline, and the effectiveness of mitigation measures that have been implemented and geo-hazard monitoring, was based on 4 sites in Lot 4 only and no sites classified as High Risk were visited. It would be necessary to visit a wider range of sites, including those classified as High Risk, across the whole Project area in order to conclude with confidence that the findings for the sites visited in Lot 4 can be applied to the entire pipeline route.

Social

The visit focused on the area from MCC to the west (Balikesir to Ankara). As a result, verification of issues in the eastern areas of the pipeline (i.e. MCC to the eastern border with Georgia) were not possible and the IESC cannot conclude whether aspects identified in the west are reflective of the situation in the east

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 2: 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 26 - 30 September 2022 and the additional documentation provided to the IESC by TANAP. This report also factors in the review of recently drafted ESCH 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 3 - Project Compliance with the Applicable Standards

Topic Heading	Compliance Criteria
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	PC
Organisational Capacity and Commitment	FC
Project Monitoring and Reporting	FC
Assessment and management of Change	FC
Labour and Working Conditions	
Human Resource Policies and Working Relationships	FC
Protecting the workforce	FC
OHS	FC
Retrenchment	FC
Grievance mechanism	FC
Security Personnel Requirements	FC
Resource Efficiency and Pollution Prevention	
Resource Efficiency	FC
Pollution Prevention and Control	FC
Greenhouse Gases	FC
Hazardous Substances and Materials	FC
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	FC
Land Acquisition, Involuntary Resettlement and Economic Displacement	
Consultation	FC
Compensation	FC
Grievance	FC
Resettlement and Livelihoods Planning and Implementation	FC
Monitoring	FC
Biodiversity	
Assessment and Identification of Impacts	FC
Biodiversity Management Planning	FR
Implementation of Mitigations	FC
Conservation of Biodiversity	FC
Restoration and Rehabilitation	PC
Monitoring	FC
Cultural Heritage	
Assessment	NOP
Consultation	NOP
Disclosure and Stakeholder Engagement	
Stakeholder Engagement Planning	FC
Grievance management	FC
Information Disclosure	FC

2.3 Environmental and Social Assessment

2.3.1 Environmental and Social Policy

TANAP's Integrated Management System Policy can be found online[1] 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[2].

2.3.2 Environmental and Social Management System

The Operational Environmental and Social Management System has been completed and as part of that environmental Plans and Procedures for the Operations phase have been developed and are being implemented by TANAP. Revisions to some of these Plans are on-going further to the planned annual reviews, including to the Waste Management Procedure and Pollution Prevention Procedure. Outstanding recommendations made in the previous monitoring Report relating to the Environmental Monitoring Plan have now been closed, please also see Section 2.3.4.1 of this Report.

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[3] (and associated annexes); and Grievance Management Procedure[4]. The 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.

2.3.3 Organisational Capacity and Commitment

2.3.3.1 Environment

The composition of the Environmental Management Team based in Ankara is unchanged from 2021. As illustrated in Figure 2.1. The TANAP Environment Department is overseen by the QHSSE Director. The Environment Manager reports directly to the QHSSE Director and is responsible for three Senior Environmental Engineers. In addition, there are environmental personnel based at the various

[1] https://www.tanap.com/tanap-project/integrated-management-system/
[2] https://www.tanap.com/tanap-project/social-policy/
[3] SEP Rev. P6-1, last updated 23.08.2022
[4] Grievance Management Procedure, Rev P6-2, last updated 19.08.2022

operational Stations (CS1/MS1, CS3, MCC, CS5/MS2 and MS3&MS4), who whilst reporting administratively to the site managers, functionally also report to the Environment Manager.

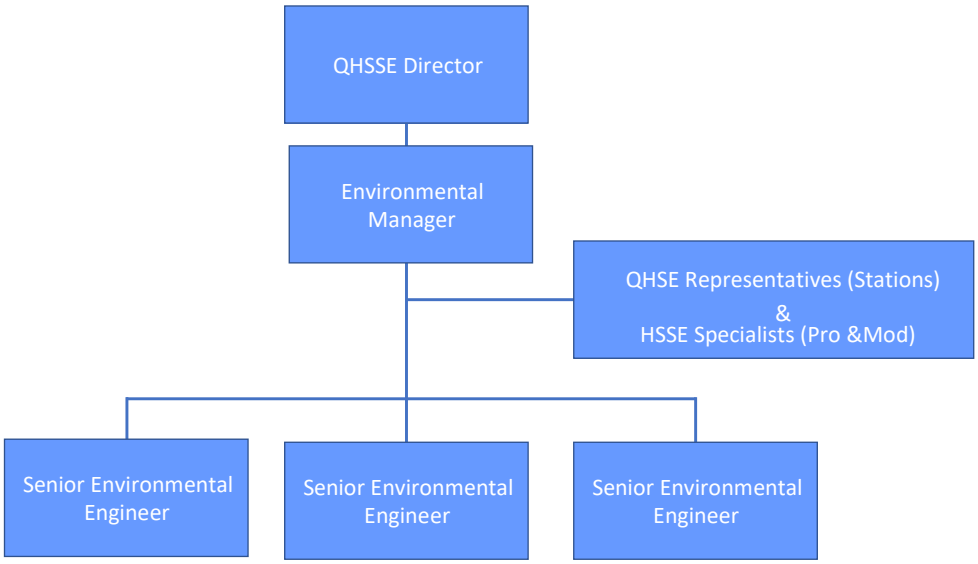


Figure 2.1: Environment Department Structure

2022 has been declared within TANAP as 'Environmental Year', which has provided the Environment Department with the opportunity to engage in a number of events designed to promote awareness of global environmental risks amongst TANAP staff. This has included the publishing of environmental bulletins every quarter incorporating a quiz, whereby 8 individuals who enter the quiz and achieve 100% are selected at random to participate in an environmental experience. The experiences in Q1 – Q3 included being involved in a nature observation programme and bird survey at Hatay, a visit to a marine underwater park that included diving training, and a nature trip that included observing sea turtles hatching. The final Q4 experience planned is to visit a forest area with experts who will help individuals learn how to identify mushrooms and plant species. The IESC was impressed throughout the site visit with the commitment the Environment Team has to sustainability and the protection of the environment for future generations. The level of investment from TANAP during 2022 into environmental awareness raising and the dedication to achieving good environmental performance through the effective implementation of the ESMS and continued monitoring across the Project is commendable.

2.3.3.2 OHS

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

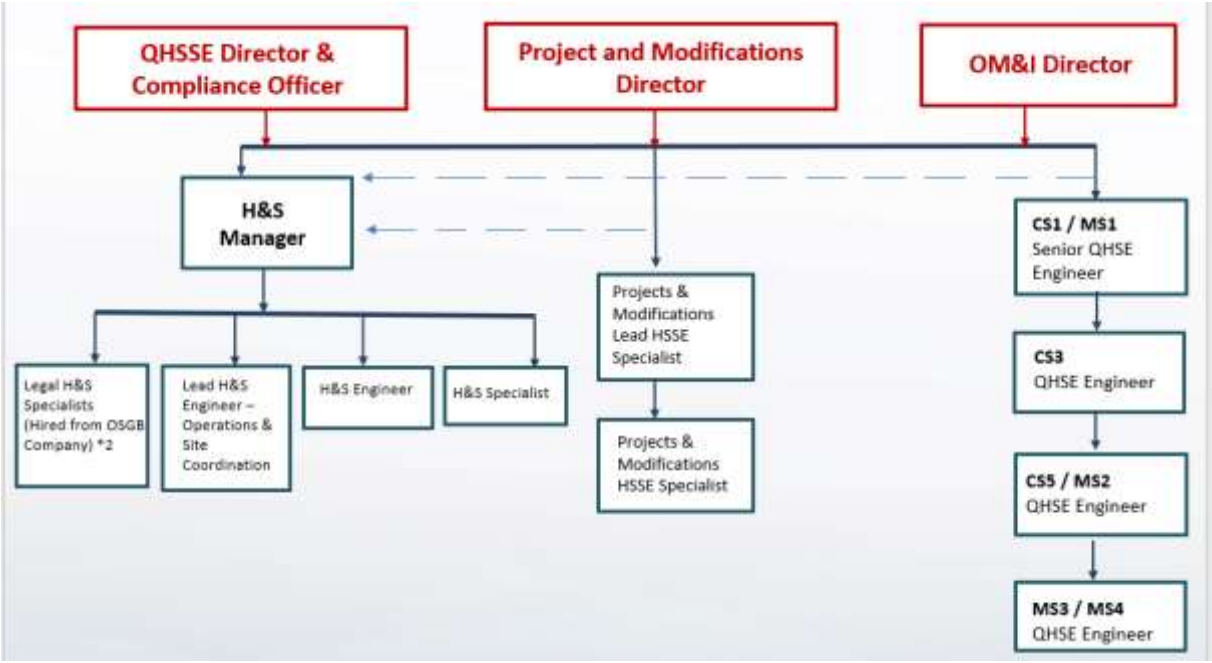


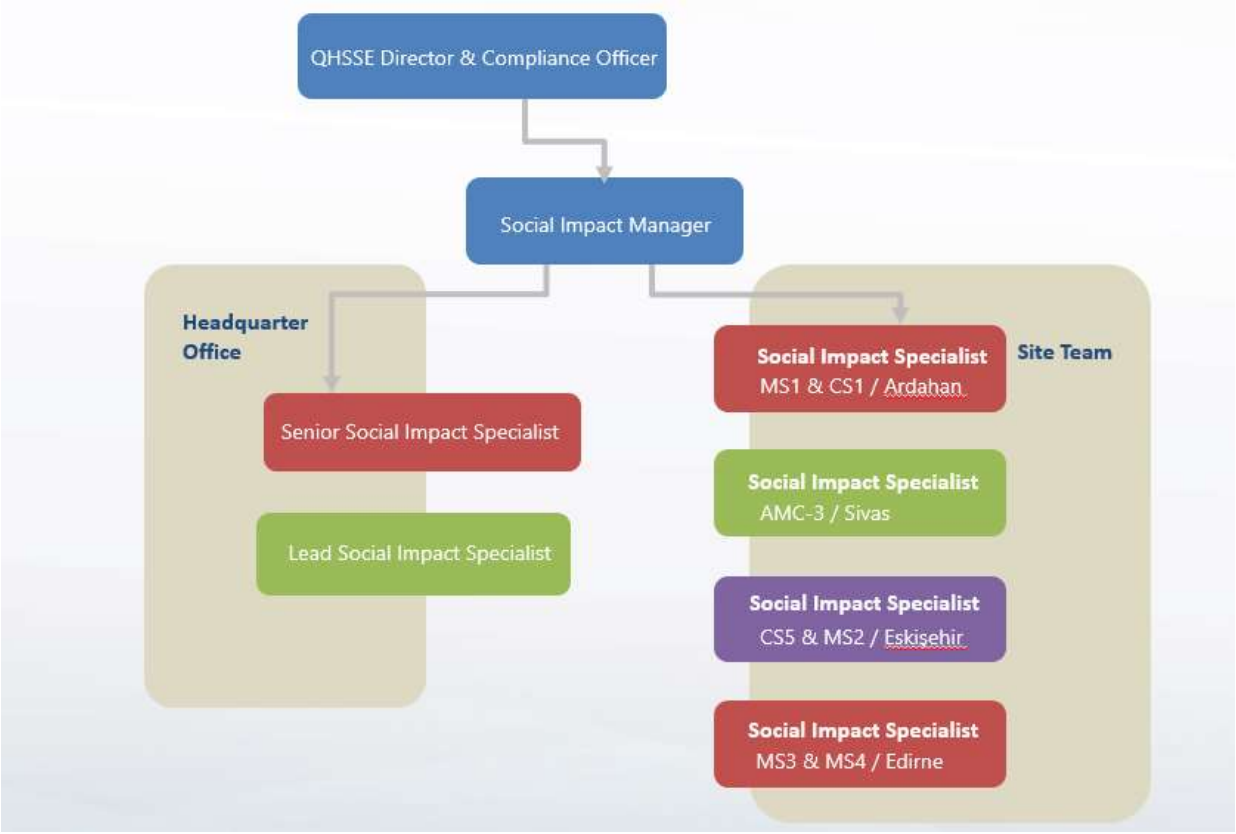
Figure 2.2 HS structure

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
- Nitrogen 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.

2.3.3.3 Social



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

- (DEC '21-MAY '22) – CS1&MS1
- (NOV 2021-APR 2022) – CS3 AMC
- (SEPT 2021-FEBR 2022) – CS5&MS2
- (AUG 2021-JAN 2022) – MS3&MS4
- (FEB-JUL 2022) – MS3&MS4

These are semi-annual, internal compliance reviews for each operational area. Assessments are against the Project ESIA, legal and international requirements, and TANAP policies, plans and procedures. While these reviews indicate compliance with commitments, areas for improvement are also identified. These include: 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 Project Monitoring and Reporting

The IESC requested data on the latest TANAP QHSE Audit of Planning and Performance Management. These audits are conducted to verify whether the correct controls are in place to ensure compliance with the related standards and specified requirements within TANAP's Operations documents and to identify any areas for improvement. Findings of the audits included that:

- Department Key Performance Indicators and associated targets have been specified and monitored regularly in order to identify and mitigate any negative trends on a timely basis. Not all targets have yet been completed for this monitoring period as the year is not yet over however the IESC notes that KPI's for some targets seem to be behind schedule.

- Training requirements have been identified and communicated with the Human Resources Department and all mandatory training programs have been attended and tracked to meet the refresher requirements.

- Performance of TANAP is systematically monitored and measured against targets during quarterly and yearly review meetings where trends are analysed, any negative trend is justified and / or actions to mitigate negative trend are identified and when required, resource needs have been discussed and raised to Management by all Departments. Performance reporting activities are performed monthly, quarterly and annually.

2.3.4.1 Environmental Monitoring and Reporting

TANAP is implementing the Operations Environmental Monitoring Plan (TNP-PLN-ENV-GEN-008) as part of the ESMP, which is applicable to all Project activities during the Operations Phase. Current verification and monitoring requirements are summarised in Figure 2.3 below. TPMC is Third Party Monitoring Company (i.e. Assystem-ENVY).

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 2.3 Operations Phase Environmental Monitoring and Reporting Requirements

Following the remote audits conducted in 2020 and 2021, the IESC recommended that the Physical Monitoring section of the Operations Environmental Monitoring Plan be updated to incorporate the on-going geo-hazard monitoring being undertaken by the external contractor Temelsu. This has now been done in Revision P6-0 and this finding can be closed. Additionally, the IESC recommended that this Plan was revised to incorporate a clear definition of what a 'non-conformance' does and does not relate to. TANAP has now added a new Section (Section 2) to the Plan entitled 'Non-Conformances Related to TANAP Processes', which outlines the range of processes that a non-conformance can be in relation to (including ESMS and Operational Activity requirements) and the ways in which non-conformances can be identified, i.e. through internal and external audits. It is stated that any non-conformance will be managed in accordance with the Non-Conformance Management Procedure. As such, this finding can also be closed, however, the contents page of Rev P6-0 should be updated.

The EMP outlines the requirements for Key Performance Indicators 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.

TANAP provided a table of performance against the KPIs in the EMP for May – July 2022. Data for the three months provided indicates 100% compliance with all KPIs listed except '*% of tests/samples compliant with project standards for effluent discharge*' for June, which only achieved 80% against the target of 100%. This was due to an activated sludge leak at CS5/MS2, which resulted in the COD level exceeding the Project threshold. Relevant follow up actions were taken to prevent a recurrence of this event.

Following the previous remote audit, the KPI data provided to the IESC did not correlate with the KPIs listed in the EMP Annex, or the findings reported by ENVY. It was recommended that TANAP reconsidered how information on environmental KPIs was collated and reported to ensure that the requirements of the EMP were being fully met and accurately represented environmental monitoring results. The table of performance against KPIs provided by TANAP now relates directly to the EMP.

The tables showing the wastewater discharge analysis results in the ENVY monthly reports for May, June and July 2022 indicate that there were breaches of Project standards for wastewater for both Total Nitrogen (TN) and Phosphorus (TP). It is understood that these are not reported as non-compliances by ENVY 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 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.

It should be noted that breaches in Potable water standards were also reported by ENVY in May 2022 at MS1 and MS3 but there are no KPIs in the EMP that would reflect this.

2.3.4.2 Internal Monitoring/Verification

In accordance with the Environmental Monitoring Plan for Operations, 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 at CS1/MS1, CS5/MS2, MS4 and the MCC, with CS3 and MS3 still outstanding for 2022. The objectives of the reviews are to assess compliance with TANAP's Environmental Management System and legal requirements, identify any areas requiring improvement and the root cause of any non-compliances, and propose corrective actions where necessary. The most recent Reports for each Station completed in 2022 were provided as part of the pre-read material for the site visit and reviewed by the IESC. These illustrate that comprehensive

reviews have been conducted at CS1/MS1, CS5/MS2, MS4 and the MCC and that appropriate corrective actions have been identified where required. In general the findings were relating to minor housekeeping issues, for example missing or damaged labels on waste containers and outdated MSDS forms. It was, however, recommended that a dedicated area for chemicals and hazardous materials should be built at the MCC for storage of the chemicals and hazardous materials according to the Project requirements. Additionally, at CS5 and CS1 it is strongly recommended that potable water lines/sources are installed to the Wastewater Treatment Plants on site, in order for the filter units to operate with sufficient efficiency throughout their usage period of 6 months, i.e. so they can be washed regularly with potable water. Whilst no deadline was given for this at CS5, this should have been completed at CS1 by April 2022. TANAP has informed the IESC that at both Compressor Stations, potable water lines/sources have not yet been installed but the site teams have been using a hose supplied with potable water from a remote source and the Engineering Department are evaluating the situation.

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. This includes the Third Party Monitoring Consultant (ENVY), the Biodiversity Offset Management Implementation and Monitoring Services Consultant (Golder) and the Domestic and/or Recyclable Waste Transport Contractor (Alp Özler). In 2022, the Environment Team also participated in Integrated Management System audits for the following:

Internal:

- QHSE Gap Assessment
- Warehouse Management, Preservation and Traceability (CS 1, MS 1, CS 5 completed, CS 3, MS 3 and MS 4 to be completed in October 2022)

External:

- GESA Construction Readiness
- Vastaş Valve Manufacturing
- Audited by Intertek for IMS Re Certification

2.3.4.3 RoW Patrolling Inspections

There are 10 RoW Patrol Teams (sub-contracted by Botaş), each comprising a Team Leader (and driver) and 4 technicians who work in pairs to undertake visual inspections of the pipeline corridor with a 15-day frequency. Each team covers a 170-200 km section of the pipeline, checking for any third-party

infringements or interference, soil erosion and on the general surface conditions of the RoW. As such, the teams should identify any potential threats to the integrity of the pipeline and initiate an appropriate response via the Integrity Management Department before the situation deteriorates. Each team has 2 GPS supported tablets that enable observations and associated photographic records to be synchronised with the TANAP Integrity Mapping Platform (IMP) whilst they are in the field, to provide instant access to the Integrity Management Department for analysis. A follow up screen for the RoW Maintenance Teams has also been added to the IMP to improve efficiency with regard to the monitoring of any maintenance works undertaken in response to the Patrol Teams' findings. To date (in 2022), 16 complete tours of the RoW have been completed. The top three findings are shown in Table 4.

Table 4 - Project Compliance with the Applicable Standards

Type of Finding	Count of Findings
Line Marker/Ariel Marker is damaged	313
Presence of planted trees or self-growth shrubs on the RoW	159
Line Marker/Ariel Marker is on the site but not listed	89

Of the total number of findings, the vast majority (985) were medium priority, 277 were low priority and 110 were high priority. The top three types of findings in 2022 are the same as in 2021, including planting trees or self-growth shrubs on the RoW. However, the Integrity Management Team under Operation & Maintenance Directorate has confirmed that only 13% (i.e. 22 of the 159 findings) were related to infringements (trees being planted by landowners) and the vast majority were in relation to self-seeded shrubs.

The IESC encountered the RoW Patrol Team during the site visit at KP 1518+302, and subsequently requested the Team's Daily Report from that site to compare with the observations made by the IESC. The Report that was provided includes a photograph clearly illustrating the issue at this site, and identified moderate erosion, which is specified as a medium priority issue and indicates that the status of the issue is 'open'. This corresponds with the IESC's assessment of the condition of the RoW at this site and verifies that the RoW Patrol Teams are effectively identifying and reporting on soil erosion (also see Section 2.4.2.1 of this Report).

2.3.4.4 Geo-hazard Monitoring

Geo-hazard monitoring is undertaken on an annual basis by the Contractor Temelsu, under the leadership of subject matter experts, relevant academics and experienced engineers. The monitoring surveys cover 4 main geo-hazard risks:

- Soil erosion on 690 steep slopes (>5^{o}),
- Karstic regions,

- River crossings and
- Landslides.

The frequency with which each site is surveyed across the Project area is determined by the risk class allocated following the previous survey. 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 is required to be taken in order to reduce the risk class to Medium or lower.

Geo-hazard monitoring surveys for 2022 were on-going at the time of the site visit and the steep slopes visited during the site visit were due to be surveyed the following week. Therefore, only the 2021 Reports were available.

The IESC was informed that a number of interventions are planned or have been implemented by TANAP to reduce the erosion risk level on steep slopes and to protect river crossings from erosion following previous geo-hazard monitoring surveys. For example, river crossing RVX4-5101 was reported as Medium risk following the 2020 survey and it was determined that scour protection was required. Detailed design drawings were developed and issued to the Project Modification Department, with works planned to be performed during 2022-2023 to permanently reduce the risk class. Similarly, steep slope SPE 774 was classified as Medium risk following the 2020 survey due to observed sheet erosion and soil creep, the channels behind the slope breakers and head-ponds being completely filled with sediment, tunnel development and cracks along the slope and the formation of large gullies and rills. Erosion protection measures were recommended and implemented and in 2021, the slope was reclassified as Notable risk with no erosion related issues observed. The Karst surveys undertaken in 2021 were performed by visual inspections of the areas of risk in the vicinity of the pipeline. The main risks to pipeline integrity are from sediment transportation into karstic cavities and sinkhole collapses. High level results of the 2021 survey are shown in Figure 2.4.

Risk Class	Length (km)	Percentage %
Notable	43.75	30.8
Low	90.41	63.7
Medium	7.77	5.5
High	0	0

Figure 2.4: Distribution of geo-hazard risk classifications for karstic regions (2021)

Although surface deformations were not observed during the 2021 survey, TANAP's intention is to closely monitor a 7.77 km area where there are known to be high surface and ground water levels. As such, these areas remain as Medium risk.

Following the 2021 surveys, no landslides risks were identified that could pose a threat to the integrity of the pipeline or stations. An aerial survey by plane is planned for 2022, in order to monitor the pipeline route along the 500m corridor in a more comprehensive manner. The aerial survey was due to commence from Eskişehir on the first day of the site visit, although flight permits were still outstanding for the area close to the Greek border. Additionally, a photogrammetric inspection using drones with Lidar features is ongoing and due to be completed June 2023. Following the site visit (as at the end of October 2022), TANAP has confirmed that only 2 sections of the aerial survey remain to be completed. The results should allow TANAP to map the RoW and detect any changes in ground elevation and surface conditions through the creation of high-resolution 3D terrain models. The drone surveys are all being conducted by TANAP staff within the Integrity Management Team who have drone pilot licenses. The results of both surveys will be integrated with the Integrity Mapping Platform (IMP) to help ensure that TANAP has an up-to-date overview of the condition of the RoW. Also see section 2.3.4.7 of this Report in relation to the IMP.

2.3.4.5 Contractor Monitoring

Reinstatement is now 100% completed across all Lots, 100% of all warranty defects for Phase 0 and 1 of the Project have been closed and the final acceptance of pipeline (Lots 1-4) and offshore construction contracts has been achieved. Furthermore, all pipeline and offshore construction Contractor Warranty periods have expired. As such, there is no longer a requirement for these Contractors to undertake monitoring or produce quarterly Aftercare and Monitoring Reports. Final acceptance of the Stations construction contract will be assessed after the end of the extended warranty period (31 October 2022).

2.3.4.6 Third Party Monitoring Company (TPMC)

There are a number of third party monitoring companies active in delivering operational requirements. These are:

Environment

- Environmental Third Party Monitoring and Consultancy Services (Assystem ENVY Çevre ve Enerji Yatırımları A.Ş.)
- 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), Third party monitoring of social impacts is conducted by consultant Assystem-ENVY, who most recently completed a physical monitoring campaign of Operations in April 2022. The monitoring comprised of visits to 11 settlements in the western section of the pipeline: six AGI-affected villages; 2 BVS-affected villages, and 3 pipeline-affected villages. Monitoring included interviews with Muhtars to understand perceptions of the grievance mechanism; stakeholder engagement activities; and community health and safety measures.

- Findings included: high satisfaction with TANAP's handling of grievances; a high level of awareness about land use restrictions; confidence in accessing TANAP; and high trust 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.

- The IESC notes that both the TPMC and IESC visits were to the western side of the pipeline in 2022. It is recommended that third party monitoring be carried out in the eastern side, as this operating environment is substantially different[5]. Findings from interviews in the west cannot be assumed to be representative of those in the east.

2.3.4.7 Integrity Mapping Platform

The 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. As such, it provides instant access to monitoring and inspection results and allows for the immediate analysis and comparison of data/information. The geo-hazard mapping dashboard within the IMP has been updated with the results of the 2021 monitoring surveys to indicate the geo-hazard risk distribution across the entire Project area.

Earthquakes in Turkey are a known geo-hazard risk and have been monitored manually from the Main Control Centre (MCC) through vibration alarms and published, publicly available information on the internet. However, due to the potential severity of impact from a high magnitude earthquake on pipeline

[5] The IESC notes that TANAP reported that a third party visit was conducted after the IESC audit (Oct 22)

integrity, TANAP made the decision to improve their ability to monitor seismic activity through the integration of the Kandilli Observatory and Earthquake Research Institute (KOERI) (the authorised public institution for earthquake monitoring on behalf of the Turkish Government) database with the IMP. This now enables TANAP to receive official data on earthquake locations and magnitude automatically and will allow comparison with previous earthquakes and data analysis following an event.

2.3.5 Assessment and Management of Change

There is an outstanding MoC relating to the construction of central waste accumulation areas, chemical storage areas and pressurized cylinder storage areas at the MS1, CS1, CS5, MS3 and MS4 stations. The temporary areas originally designated for these purposes at the stations were not considered by TANAP to be adequate. Therefore, detailed design and construction of fully compliant waste accumulation areas, chemical storage areas, and pressurized cylinder storage areas is required. The design has been completed and the procurement, construction and site activities are on-going, with works having commenced at CS1 and CS5 under the relevant service order issued to the Pipeline Repair and Modification Projects Contractor, ACD. The works are due to be completed at all stations by end of year 2022.

2.4 Resource Efficiency and Pollution Prevention

2.4.1 Resource Efficiency

Following the site visit, it was clear to the IESC that resource efficiency is being given a high priority by TANAP. The O&M Manager at CS5/MS2 confirmed that both water and electricity consumption are being recorded and recognised that there are actions that could be implemented to reduce resource use at that facility that they would seek to take forward. For example, installing infra-red taps that turn off automatically and working to achieve behavioral changes amongst the workforce i.e. turning lights off in unused rooms. Furthermore, at the Main Control Centre (MCC), solar panels have been installed on the roof which in the summer months are generating around 50KW electricity, there is a rainwater collection system for watering plants and the building has achieved LEED Gold Certification, requiring a significant focus on reducing energy consumption and waste, managing resources efficiently and reducing operating costs. There are, however, no KPIs in the EMP relating to resource efficiency in respect of water and energy consumption. As such, there is no requirement for TANAP to measure or demonstrate performance (or improvements in performance) in relation to this element of the EBRD's Performance Requirement 3 (and other equivalent Lender's Standards). ***It is recommended that the EMP is revised to include appropriate KPIs in relation to water and energy consumption.***

2.4.2 Pollution Prevention & Control

The IESC was provided with information relating to two minor environmental incidents that occurred in 2022. The first occurred at KP 158, where approximately 0.5 liters of oil leaked from an excavator hydraulic hose onto the ground during the operation of a screw anchor. The work was stopped

immediately and the spill was cleared up using material from available spill kits. Approximately 2.5 kg of contaminated soil was removed from site and taken to the CS1 hazardous waste storage area for appropriate disposal. The cause of the incident was that the hydraulic hose was worn. It was recognised as a result of this incident that visual inspections of the condition of equipment need to be increased prior to work commencing. The second incident was also in relation to an oil spill, from a hydraulic hose on a truck being used to install traffic signs on an access road during road upgrade works. Again, as soon as the spillage was noticed, work was stopped and the contents of the available spill kit were employed to clean up the spill. The IESC is comfortable that the level of awareness amongst TANAP and contractor workers in relation to the importance of preventing and cleaning up spills/leaks of oil (and other pollutants) is adequate and that appropriate actions have and will be taken in the event of any future, similar incidents.

Although Assystem-ENVY do not monitor air quality emissions as part of their scope, the MoEU have allocated a laboratory to undertake emissions measurements to determine they are meeting the threshold values specified in the Industrial Air Pollution Regulation. As such emissions measurements were taken from the heating boilers at all compressor stations and metering stations. The measurement results were reported to the related Provincial Directorate of the MoEU and were not available for IESC review but the IESC was informed that there were no issues regarding air quality or emissions following this monitoring.

TANAP additionally outlined during the visit that the Eskişehir Provincial Directorate of the Ministry of Environment Urbanisation and Climate Change (MoEUCC) conducted an annual environmental inspection of the CS5/MS2 Station on 3 August 2022 and all the findings were reported to be compliant with the relevant legal requirements. Additionally, an unannounced inspection of MS3 was conducted by the Çanakkale Provincial Directorate of the MoEUCC on 18 April 2022, in relation to on-going efforts to combat the mucilage problem in the Marmara Sea from wastewater discharges. The wastewater generated at MS3 is in fact transferred to the wastewater treatment plant at MS4 and as such there were no issues.

2.4.2.1 Soil Erosion

Following the last physical site visit in November 2019, the IESC raised a concern relating to the potential for soil erosion on the steep slope at the Gönen River crossing (**KP 1661**) in Lot 4. This was due to significant gapping observed in the jute matting that had been applied by the Contractor. Photographic evidence of the condition of the slope and berms was provided to the IESC as part of the remote audits undertaken in October 2020 and December 2021. The photos provided by TANAP in 2021 and included in the 'Aftercare and Monitoring Report in Lot4: June-July-August 2021' (PLK-REP-ENV-PL4-026) appeared to show that there was no significant soil erosion on this slope, and good rates of revegetation. However, the IESC requested a physical visit to this slope to verify that there are no residual soil erosion issues.

This slope is currently classified as ‘Low Risk’ for soil erosion, and this site is surveyed by Temelsu for geo-hazard risks in relation not only to soil erosion on steep slopes but also as a river crossing and for landslide risks. There are 2 passive landslide areas (LS449 and LS 309) on either side of the right of way on the eastern side of the Gönen River crossing. During the 2021 landslide inspection survey no movement was detected (only some settlement that would naturally be expected following construction) and whilst this area was kept under observation annually for 4 years to ensure there was no impact post construction, landslide monitoring will now be reduced to every 5 years. The aerial surveys (by plane and drone) will also enable clear comparisons of the condition of the area to be made. The IESC is therefore comfortable that any potential issues at this site will be identified in good time as part of the planned geo-hazard monitoring, as well as through the RoW Patrols and aerial surveys.

There were no visible soil erosion issues at this site and vegetation on the slopes on both sides of the River was well established, especially considering the thin/rocky soil layer (as shown in Figure 2.5).

Figure 2.5: Condition of the slopes on both sides of the Gönen River crossing

There is 2m thick rip rap along the riverbanks at the pipeline crossing point and following three flood events since the completion of construction, the condition of this structure has no obvious deterioration (as shown in Figure 2.6). The IESC therefore has no further concerns relating to this site.

Figure 2.6: Rip Rap at KP 1661 in good condition

The Aftercare and Monitoring Report for Lot4: June-July-August 2021' (PLK-REP-ENV-PL4-026) identified a soil erosion issue at **KP 1518+302** including an 80 cm deep gully, breaches in the slope breakers and extensive rilling parallel to the RoW. This was added to the Contractor Defect list as a medium priority defect on 6 August 2021 and following the last remote audit TANAP confirmed that the defect was closed and provided the Warranty Defect Form signed on 27 December 2021. The IESC requested a visit to this slope to verify that the repair works completed have been effective.

During the repair works that were carried out, the RoW at this site was fully regraded, the existing slope breakers were repaired and extended, and additional slope breakers were added (so that there are now slope breakers every 10m) with the aim of diverting surface water off of the RoW (including from the parallel access road).

There are three main factors contributing to the level of geo-hazard risk at this site. First, the soil is weathered granite sand, which has very high erosion potential. Second there is a small river crossing (RVX4-0686) that cuts across the RoW, which had caused the previous deep gully to form. Third, whilst there is a natural gully at the foot of the lateral slope (as shown in Figure 2.7), which would be the obvious place to discharge run-off/drainage from the RoW, it is within Government controlled Forestry land and TANAP are not permitted to divert water from the RoW into this gully.

Figure 2.7: Natural gully off the RoW

Less than a year after the repair works were conducted, some of the slope breakers at this site have been breached and there are clear signs of rilling and gullies forming (as shown in Figure 2.8). Furthermore, there is another deep gully developing where the river crosses the RoW, as illustrated in Figure 2.9. As such, further repairs are clearly required at this site (which will be conducted by the Maintenance Department).

Figure 2.8: Breaches of slope breakers and gullies forming

Figure 2.9: River crossing RVX4-0686

It was accepted by TANAP that scour protection will need to be installed to reinforce the river crossing at this site, as soil erosion will continue to occur and could eventually pose a risk to the integrity of the pipeline. This is already planned and designs have been developed.

This slope is currently classified as ‘Medium risk’ but following the repair works the IESC was informed that it was expected to be reduced to ‘Low Risk’ as a result of the annual TPMC survey planned for the following week. The Geo-Hazard Lead, however, estimated that the slope breakers here are only diverting approximately 30% of the water off of the RoW, and the IESC considers that soil erosion at this site will continue to be a risk unless additional measures are taken to effectively divert a higher percentage of run-off away from the RoW. As such, reducing the level of risk to ‘Low’ and therefore the frequency of SME surveys to every 3 years, may result in serious soil erosion impacts not being recognised and addressed in an appropriate timeframe and the IESC would advocate the risk level remaining as Medium. Surface water run-off is clearly following the natural contours of the slope, towards the gully off the RoW, and further attempts by TANAP to try and divert water away from this gully are likely to result in on-going soil erosion issues. ***It is recommended that TANAP attempts to negotiate with the relevant Government Department to allow run-off to be discharged into the natural gully***.

There were no visible signs of soil erosion on the steep slope at **KP 1502+800** and it was clear that the slope breakers that have been installed in accordance with calculations made using the Universal Soil Loss Equation are effective. The temporary (soil) slope breakers are intended to last for 5 years compared to the permanent rock slope breakers. However, should it be considered necessary by TANAP, the temporary slope breakers will be maintained for a longer term. There is also a flexi-pipe

drainage system discharging to the slope breakers from the pipeline trench on this slope to prevent any subsidence within the trench, as shown in Figure 2.10.

Figure 2.10: Pipe discharging from the trench to a permanent slope breaker

At **KP 1433+300** the RoW has been crossed by a temporary third party access road, to facilitate the construction of a nearby dam pipeline. The geology at this site is serpentine and there is a landslide risk. As such, any uncontrolled excavations could trigger a landslide, reducing slope stability and risking pipeline integrity. The design for the crossing that was initially proposed to TANAP was rejected as it crossed the RoW diagonally. Following negotiations, the design that was eventually accepted by TANAP crosses the right of way vertically in the valley, as shown in Figure 2.11.

Figure 2.11: Third party crossing at KP 1433+300

A Third Party Crossing Protocol is in place to ensure that the RoW will be reinstated according to TANAP's specifications. Some limited damage has been caused by dam construction traffic to the RoW adjacent to the existing access road, which has been repaired to an acceptable level by the third party as shown in Figure 2.12.

Figure 2.12: Repaired damage to the RoW

The IESC is comfortable that TANAP is directing the third party interventions effectively at this site, to ensure that the integrity of the pipeline is protected.

This slope is classified as 'Low Risk' for soil erosion and is therefore only monitored by the SME every 3 years. There is some visible soil erosion on the temporary slope breakers, which the IESC was informed will be repaired as TANAP considers it is still useful to maintain the temporary slope breakers at this site to help the vegetation to become more established. It is expected that the permanent slope breakers will be backfilled with sediment, however, this will be cleared by the Maintenance Team if necessary.

There were no 'High Risk' sites for geo-hazards in the schedule for this site visit. As such, the IESC is not able to extrapolate observations made in Lot 4 across the entire project. However, 3 samples of high priority findings by the RoW Patrol Teams made during 2022 were provided for review. These included, at **KP 1796+950**, concrete slabs being exposed on the pipeline in a deep gully, which was subsequently backfilled in by the Maintenance Team as shown in Figure 2.13.

Figure 2.13: Concrete slab exposed and gully backfilled

Additionally, a settlement pit around 100cm deep had formed at **KP 189+415**, which was also filled in by the Maintenance Team using hand tools, as shown in Figure 2.14.

Figure 2.14: Settlement pit backfilled

It is expected that 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 in those Lots where the pipeline passes through more challenging mountainous and karst landscapes. The IESC is comfortable that the TANAP Geo-Hazard Lead has a good understanding of the geo-hazard risks across the Project having been involved since 2013, including with ground investigations, the route design process and construction. In addition to the SME monitoring and RoW Patrols, ad-hoc inspections are being conducted by this individual to ensure that areas of concern are under close monitoring; to help ensure that any immediate risks to the integrity of the pipeline will be detected and can be addressed.

2.4.3 Greenhouse Gases

Çınar was appointed by TANAP to calculate annual GHG emissions during the Construction phase of the Project. A methodology was developed by Çinar for this (ref. CIN-REP-ENV-GEN-027) based on the 'International Financial Institution Framework for a Harmonised Approach to Greenhouse Gas Accounting (November 2015)'.

The most recent GHG Emissions Report for 2021 was issued on 04 March 2022. Scope 1 (Direct) and 2 (Indirect) emissions have been calculated using the accounting 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. Scope 1 emissions 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. Scope 2 emissions account for the emissions from the generation of electricity that is consumed by the Project at each operating facility.

According to this Report, the total annual GHG emissions resulting from the operation of TANAP in 2021 were **259,015.64** tCO_2e. It should be noted that the Report is only intended to account for the GHG emissions generated by operational activities and as such the annual total does not include **54,676** tCO_2e that was released as a result of a gas leak due to a mechanical failure at BVS-05 in May 2021.

Total annual emissions represent a significant increase of 87% compared to 2020. However, GHG emissions from stationary natural gas consumption have increased by 533% due to the commercial launch of gas transmission to TAP on December 31 2020 and the CS1 and CS5 main compressors being operated at full capacity. Additionally, GHG emissions from stationary diesel consumption have increased by 83%.

Positively, however, GHG emissions have decreased for electricity consumption by 12%, for mobile combustion by 6% and for vented emissions by 8% compared to 2020. Furthermore, the GHG emissions per quantity of transmitted natural gas in 2021 have decreased by 35% in comparison to the previous year.

2.4.4 Waste and Hazardous Materials

The IESC observed generally excellent waste management practices at both CS5/MS2 and the MCC, in compliance with the Waste management Plan for Operations (TNP-PLN-ENV-GEN-007). Within and external to both buildings there are segregated waste bins, clearly labelled (as illustrated in Figure 2.15) in accordance with the Waste Management Procedure and there was no mixing of waste streams within the bins observed.

Figure 2.15: Segregated waste bins at CS5/MS2

At the MCC, all waste is stored outside of the security fence in a dedicated, covered and locked waste storage area as shown in Figure 2.16. There is clear labelling, an impermeable floor and all waste streams were within appropriate containers with lids. A spill kit was also present. It was explained to the IESC that hazardous waste at this facility is mainly generated as a result of conducting oil changes in the generators and cannot be kept on site for more than 180 days before removal by a licensed contractor. The local municipality collects all non-hazardous waste for recycling.

Figure 2.16: Waste Storage Area at the MCC

It was acknowledged by the O&M Manager at CS5/MS2 that waste segregation at source is key, and waste from internal bins is further segregated at the designated waste storage area before being disposed of at project approved licensed facilities for recycling where possible. At this Station, a permanent central waste accumulation area (CWAA) was under construction (due for completion at the end of 2022), which will comprise three separate buildings for recyclable, hazardous and non-hazardous/non-recyclable wastes. The layouts for a CWAA are included as Appendix B to the Waste Management Procedure and the IESC was informed that by the end of 2022 all stations will have such dedicated waste storage facilities (not just CS/MS2). Currently, waste and hazardous materials are being stored in a temporary building, with a locked door and epoxy/chemical resistant floor. The drainage system in the building is not connected to the main surface drainage network for the Station, to prevent any leaks/spills from contaminating the on-site collection pond.

Other best practice measures observed included all waste containers being accurately and clearly labelled, including with the Turkish regulatory waste codes (as per Appendix 1 of the Waste management Plan for Operations) and being stored within adequate secondary containment, as illustrated in Figure 2.17: Adequate secondary containment and clear labelling of waste.

Figure 2.17: Adequate secondary containment and clear labelling of waste

There was also an appropriately stocked spill kit in the building, along with a fire extinguisher, first aid kit and eye washing facilities, as shown in Figure 2.18: Waste incident response equipment and chemicals were being stored within a locked cabinet.

Figure 2.18: Waste incident response equipment

To facilitate reporting on the volumes of waste generated at the Station to TANAP Head Office in Ankara, weighing scales are located within the storage area, as shown in Figure 2.19. Waste declarations for the wastes generated (volume and waste streams) at MS 1, CS 1, CS 3, CS 5 /MS 2, MS 4, the MCC and Ankara Headquarters in 2021 were submitted via the online Waste Declaration System of the MoEUCC in accordance with the Turkish Waste Management Regulations.

Figure 2.19: Waste weighing scales

2.4.4.1 Wastewater

Both of the facilities visited have on-site biological wastewater treatment plants (WWTP) for the treatment of domestic wastewater. The MCC treatment plant (shown in Figure 2.20: Biological wastewater treatment plant at the MCC) has a capacity of 6.75 m^3 but this is not being fully utilised, with around 2m^3 wastewater currently being generated daily. This volume may increase if the SOCAR building on site becomes occupied. The treatment process comprises 4 hours of aeration, 1 hour of settlement and 15 minutes of discharge.

Figure 2.20: Biological wastewater treatment plant at the MCC

At both sites, daily visual observations are made of wastewater samples from the final settlement tank; to monitor the colour and sediment levels of the final effluent to provide an indication of any adjustments that may need to be made in the treatment process. On a monthly basis, a third-party monitoring company takes effluent samples from the outlet point to test for the full suite of wastewater quality parameters against TANAP's adopted Project standards. Additionally, every four months, wastewater effluent analyses are conducted to fulfil legal monitoring requirements by laboratories allocated via the Central Laboratory Identification System (operated by the MoEUCC) in line with the Environmental Permit and License Regulations. As such Government laboratory representatives take effluent samples from the discharge point.

The MCC discharges final effluent to a highway drainage channel under a permit, as there are no other possible receiving environments nearby. There have been no detected breaches of wastewater quality parameters at the MCC to date. The residual sludge is collected by the local municipality and taken to a licensed WWTP for further treatment prior to disposal.

The final effluent at CS5/MS2 is pumped from the final settlement tank via a 20km pipe to the outlet point into the Fırıncı Başı Creek. See Section 2.3.4.1 of this Report for details of a wastewater quality breach at this Station.

The surface water drainage system at CS5/MS2 collects all run-off from the station and discharges it to a large collection pond on site (as shown in Figure 2.21). There is no outlet from the pond and the water is allowed to evaporate naturally. It is assumed that the pond will need to be cleared of sediment only around every 20 years.

Figure 2.21: Surface water collection pond at CS5/MS2

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 21-9-2022, there are 354 direct TANAP employees. The following table describes the breakdown of the workforce as of 31 August 2022:

Employee Category	Gender	Number
Direct TANAP Employees	• Men • Women • Total	• 299 • 55 • 354
RoW Patrolling	• Men • Total	• 5 teams of 10 • 50

TANAP Administrative (housekeeping, kitchen, personnel drivers, etc.)	• Site-based • Women • Total	• 72% • 25.5% • 188
TANAP Security personnel	• Men • Women • Total	• 92% • 8% • 261

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 Q1-Q2/2022:

- CS1-MS1: 90% of staff have had the induction (to May 2022)
- CS3: not reported (as of April 2022)[6]
- CS5-MS2: all staff have completed induction (to Feb 2022)
- MS3-MS4: all staff have had completed induction (to July 2022)

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 few opportunities to observe high-risk work being conducted in the field. This is not unusual given the nature of operations as opposed to projects.

[6] The Social Impact staff member had not yet been appointed for that location at the time of the internal review

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 18 for the review period and did not represent any failings in core OHS systems or procedures.

TANAP has a robust internal audit process with frequency of assessments, findings, actions and action register all very well implemented and managed. The IESC commends the closure rate of actions which was very high.

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.

2.5.3.2 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. Masks were worn 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.

2.5.3.3 OHS Competence and Capacity

The transition from construction to commissioning to operations requires a change in the capacity and competence of OHS personnel. This has been managed and details are noted in Section 2.3.4 Organisational Capacity and Commitment.

2.5.3.4 Physical verification of OHS compliance at CS5

A physical assessment of OHS compliance was conducted at CS5 including a walk-through and interviews with workers. No non-conformances were identified and the site had a very high level of housekeeping.

The IESC conducted an interview with a team of three maintenance workers while assessing the operational systems at CS5. The workers were conducting a “visual valve check” and were doing the task under the PTW system. The IESC team particularly commends the team leader’s competence in following due PTW process making the area safe before answering questions. The team leader and team members interviewed highlighted a good understanding of the risks involved in the task and the controls needed to undertake the work safely. All workers understood the PTW process and associated

requirements (risk assessment, toolbox talks and procedures). This interview was followed up with an assessment of the PTW and associated requirements, all of which were sighted by the IESC and were compliant.

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.

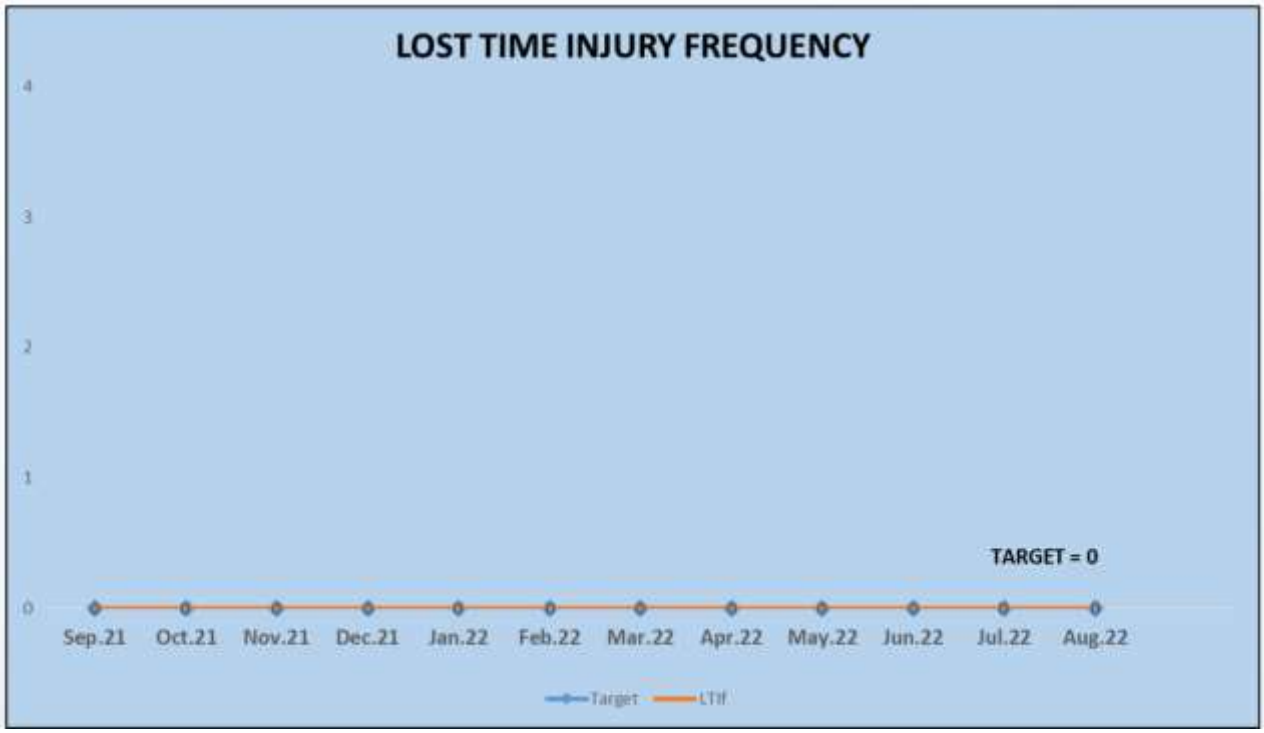


Figure 2.22 Lost Time Injury Frequency

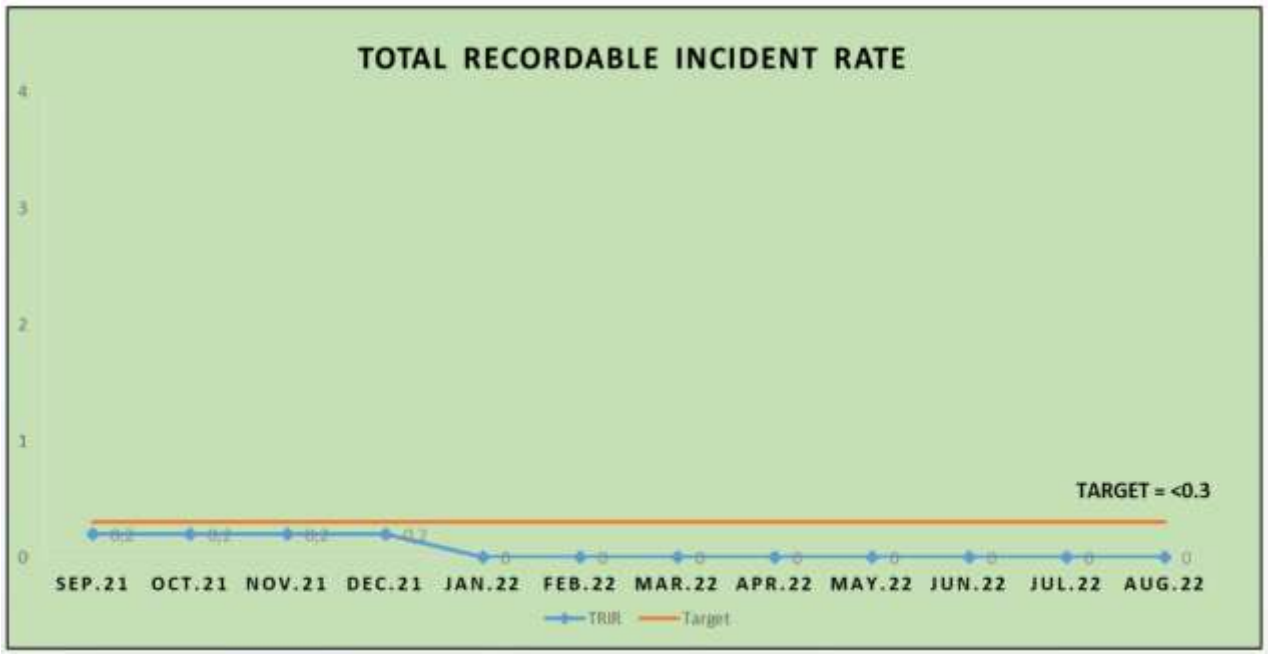


Figure 2.23 Total Recordable Incident Rate

2.5.3.6 Crises and Emergency Management

There was a further improvement in the scheduling and conducting of emergency exercises which is commended. 24 emergency response exercise reports were sampled, and these represented a good variety of scenarios and locations. The IESC commends the level of detail within these reports as well as the focus on real learnings from the drills as well as actions to be completed for future improvements.

2.5.3.7 MCC CCTV camera privacy policy

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 system was very sophisticated and provides TANAP with the ability to avoid OHS and Environmental incidents before they occur.

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 cameras that may have unwanted footage captured. Footage is only kept for 30 days unless required for an investigation and TANAP states that employees are instructed not to observe any non-station related activities.

The IESC was advised that no policy existed for the use of CCTV cameras during the site visit. It later became apparent that the TANAP Stations (Manned) Video Surveillance and Access Control Systems Policy is available, however could not be reviewed. The IESC would **recommend that the documented CCTV privacy procedure be reviewed during future monitoring. Specifically, 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 longer than the 30 day standard period.

2.5.4 Retrenchment

The final labour audit was conducted by Practical Solutions in December 2020 (reported 2021) with the final contractor demobilisation. No open labour issues remain.

2.5.5 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 2021, five new worker complaints (2 from CS3, 2 from MS4, and 1 CS5/MS2) have been registered and all were closed.

2.5.6 Security Personnel Requirements

No issues were reported regarding security personnel, including whether any grievances have been raised about security personnel conduct.

Interviews were conducted with Security Specialists and security personnel during the site visit; these were at CS5 and the MCC. In the Main Control Centre (MCC), interviews identified that the Senior O&M Manager has an indirect (or functional) report from the Lead Security Specialist, who has a team of 10 security operators. Security for MCC and TANAP HQ are TANAP's contractor's employees, while for compressor stations the Security staff are BOTAS's contractor's staff. Training, including on human rights and use of force, is the responsibility for each organisation. Following the audit, TANAP confirmed that the annual training program is coordinated between both the TANAP and BOTAS security contractors, led by the TANAP Security department and addressing the Performance Requirements[7], including training, standards of practice and behaviour for security personnel. The schedule for 2022 included: labour rights; VPSHR; and international principles in security including the Code of Conduct for private security service providers.

2.6 Community Health Safety and Security

2.6.1 Infrastructure, Building, and Equipment Design and Safety

An inspection of the MCC was included in this site visit. The IESC notes that the security personnel 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

[7] In particular, EBRD PR2, paragraphs 27-29.

time). The MCC is fully operational with Security system, cameras (Security CCTV) and acoustic sensing detection operational 24-7 by a team of ten operators plus a lead.

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.

2.6.4 Exposure to Disease

See Section 2.5.3.2 (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. Participants report that they feel safer after understanding the risks, and what to do in the event of an emergency. Additionally, after understanding what TANAP is monitoring, what technology is being used, that the ROW Patrol is in place and why the restrictions are in place, participants are more likely to report any land use changes. The next focus, disclosure meetings with pipeline-affected settlements, have already commenced, with approximately 130 meetings held already.

Further to the previous IESC report, community meetings were held towards the summer months since this is when seasonal residents are more likely to be present. New informative materials have been prepared and shared with Muhtars as well as all available residents. TANAP reported that, although Muhtars were asked how the company could reach any non-present villagers, all Muhtars do not have current contact details.

The IESC notes that emergency response scenarios are planned to be run after all informative meetings have been completed. These will be held with communities affected by BVSs (rather than compressor stations), as these are unmanned; the HAZOP studies will inform which BVS/communities will be involved in such a training scenario.

Emergency contact information is being updated to ensure that the relevant authorities' and individuals' information is current. Most authorities were stated to share landlines, however these are not useful in the event that an emergency is after hours, thus key individual mobile numbers are to be updated.

Further, the IESC notes that individuals residing near a BVS (as a priority) can also be recorded in the eBA to avoid having to go through Muhtars in the event that an emergency occurs.

Following the previous audit findings and recommendations on Emergency Management, the IESC notes the TANAP definition of communities as per the CBERP, i.e., people who are resident or located at the towns and villages around the TANAP Facilities or RoW who may be impacted by TANAP operations but who are not TANAP or contractor personnel working at aforementioned locations. The IESC notes that TANAP, in seeking to improve its direct contact with communities (see also Section 2.9.1), will still need to consider the surrounding landscape, transport routes, and connectivity of those settlements to the AGIs and how this relates to emergency response. Inputs of Muhtars will still be helpful to inform this process, even if the end result is improved direct communications with potentially-affected community members.

2.7 Land Acquisition, Involuntary Resettlement and Economic Displacement

2.7.1 Consultation

Consultation on the RAP End-Term Impact Evaluation (RETIE) (i.e. RAP Completion Audit) corrective actions continues. See Section 2.7.5.

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. Following geohazards investigation (by consultant, Temelsu) of 40 complaint records, land on which slope breakers are located are being permanently acquired in two cases. For example, the figure below shows a photograph from a completed site investigation in the MS1-CS1 area. Following the investigation, the slope breakers on the upper part of the hill were recommended by the geohazards consultant to remain in place and be permanently acquired, while those in the yellow area were identified for removal.

Figure 2.24: Permanent land acquisition of slope breakers (example)

2.7.5 Monitoring

The RAP End Term Impact Evaluation (RETIE) has been finalized and disclosed with Lenders and online[8]. Implementation of corrective actions drawn from the RETIE is ongoing. These activities are shown in the figure below:

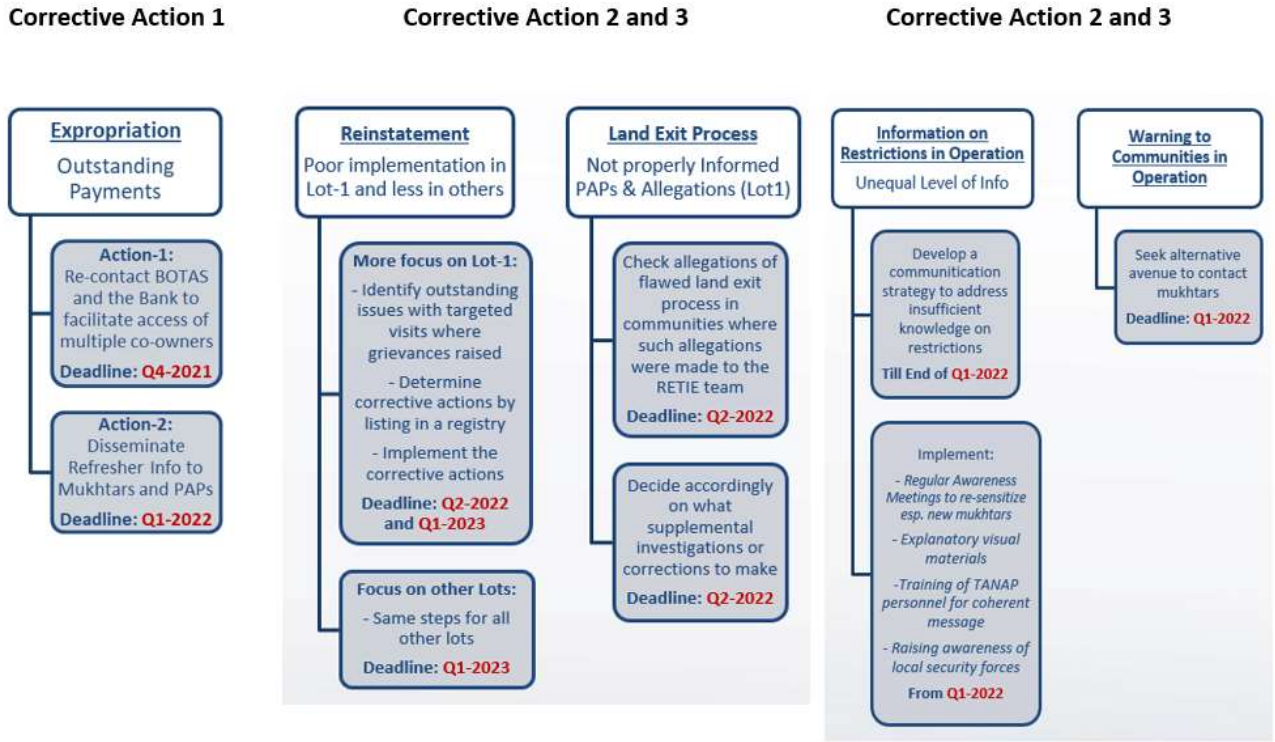


Figure 2.25: Summary of RETIE Corrective Actions

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

Corrective Action 1: Expropriation: Outstanding payments

TANAP's follow up action was to write to 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. Since August 2021, 30 phone calls from landowners have been taken by TANAP Site SI team and/or LAC department to facilitate access by land co-owners to their compensation payments. Support is provided on a very case-by-case basis to each landowner.

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 summer 2022 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 19 of 69 settlements (28%) and 6 complaints raised
- Lot 2: issues raised in 5 of 122 settlements (4%) and 5 complaints raised
- Lot 3: issues raised in 11 of 39 settlements (28%) and 5 complaints raised
- Lot 4: issues raised in 16 of 73 settlements (22%) and 22 complaints raised

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

One example was visited as part of this audit, where interviews with Muhtars and villagers confirmed that: issues had been raised during the completion audit (low productivity of soils, stones, compacted soils); that soil samples had been taken by experts for analysis; and that now rectification works are in progress. Soil quality assessments were carried out on 48 parcels; subsoil ripping conducted on 3 of 4 parcels; and stone removed in 33 parcels, i.e., remedial actions are almost fully complete, the remainder are to be completed after the next harvest. Additionally interviews with this group highlighted that ageing farmers are now often selling their lands to corporations in this area (Polatli); this will require different types of engagement with commercial enterprises/land speculators by TANAP in future.

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

These corrective actions are also being addressed concurrently. The criteria being used to assess and prioritise which villages to physically visit are based on: the RETIE results on reinstatement and land exit, grievances, slope breakers, and land exit status by settlements (especially those where Muhtars signed off land exit forms). More than 100 settlements had been selected for a physical visit and confirm

any issues, which will be completed when all land use awareness meetings have been completed. Most have 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).

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 for the remainder of 2022, and, for close out of construction phase legacy reinstatement issues, to Q1/2023. TANAP is commended for progressing these actions in a systematic and thorough manner.

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

TANAP's key performance indicators for social impact performance includes the number of community meetings. In Q1/2022, the target was to hold 200 community meetings; 232 were achieved (January 127, February 30 and March 75). In Q2/2022, the target was increased to 300 meetings due to the spring season, but 186 were achieved. With the start of the agricultural season attendance was lower than expected, and while efforts were made to increase the numbers in June, the target was not met for the quarter. The IESC notes that TANAP is committed to improve the performance in Q3 and suggests stretch targets be revised to reflect best timings possible for stakeholder participation.

The Annual Stakeholder Engagement meeting was held in February 2022 online again via YouTube, following the success of this mode of delivery in the previous year. The meeting included various levels of government, companies and non-government stakeholders, with 106 attendees in total. The session included an informative presentation, followed by a question-and-answer session. Questions were received on SEIP, reinstatement, project and land use.

The IESC notes that the SEIP program remains in demand from stakeholders, although this is somewhat diminishing with time. The SEIP program activities 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 support of sustainable development projects.

Further to the previous IESC report, there had been some concerns raised in the east (MS1-CS1 area) regarding stack gas emission impacts on crop yield and beekeeping. The IESC notes that at this issue has been resolved by TANAP; information had been received from the environmental team (as key experts) and was conveyed to relevant stakeholders through a consultation meeting. This issue is now closed.

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 being advised/reminded about restrictions prior to any violations. Informative meetings are being held along the pipeline, using brochures and posters updated recently (see Section 2.9.2). Stakeholders met during this IESC visit reported a broad awareness of restrictions. The ROW patrol teams are regularly reporting violations and the IESC observed the security team's remote monitoring from the MCC. This is resulting in an increase in the number of permits being applied for by Landowners and users, and the SI team is supporting owners and users to complete the necessary permit application forms. The majority of applications are for opening water channels. The SI team is making considerable efforts to support users the permit system so that they continue to reach out to TANAP in future, and thus keep violations to a minimum.

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, however potential vulnerability of households affected by land re-entry/maintenance during operations is not covered in this Procedure. **The IESC recommends that TANAP, in conducting its next review of this procedure, consider what activities TANAP is doing to ensure that any vulnerability in affected households is considered**, in the same way that critical habitat assessment is required for biodiversity. This could be reasonably be assessed at the step of "Notification of Landowner/User" and signing of the Land Entry protocol. Any 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. The IESC is seeking to 'future proof' the procedure, i.e., ensure that the procedure should documents steps that are already being taken to minimise impacts, particularly steps that minimise impacts to those most vulnerable, as is required under TANAP's commitments to the Performance Requirements[9].

2.9.2 Grievance management

The grievance close-out rate target for Q1/2022 was 75% and 78% was achieved, while in Q2/22 the target was 75% and 84% was achieved. The project total complaints since commencement is now 5,493 received, and 5,386 closed, i.e. 107 complaints are open. Of these, 68 are overdue, predominantly relating to reinstatement (57 cases, or 84%). 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

New information disclosure materials have been prepared. This includes a short summary brochure (example below) in addition to a more detailed booklet. 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[10].

[9] PR1, inclusion of differentiated measures to ensure disadvantaged or vulnerable groups or individuals are not disproportionately affected. In this case, an example could be the elderly who are meeting food security requirements through subsistence farming.
[10] https://www.tanap.com/en/land-use-restrictions

Figure 2.26: Disclosure materials samples

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. At the current time of writing (October 2022), the BAP is scheduled to have been reviewed and updated in 2022; however, the updated BAP has not been received by the IESC. The Site-specific Biodiversity Offset Management Plans have been written in 2022, for both the forest and steppe offset projects. These 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. It is understood (December 2021) that TANAP have also made the decision to continue bird monitoring at this location until an evidenced decision can be made as to the need for remedial mitigation to be implemented or not. Based on the information gathered to date, it is considered that there is sufficient information to make an informed decision; three years of monitoring with no further evidence of carcasses would suggest that the transmission line is not having a significant impact on bird species. However, it is noted that the spring 2022 survey was undertaken during a drought period, so may not be a true representation of the spring migratory period. Once the 2022 monitoring has been completed, TANAP with their consultants – ENVY; should make a decision on the need for further monitoring on this transmission line.

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-008)
- Ecological Management Plan (TNP-PLN-ENV-GEN-010)
- 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

The Ecological Management Plan (EMP) (TNP-PLN-ENV-GEN-010) was previously reviewed in 2021 by the IESC and has not been amended since. 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.

- Percentage of vegetation ground cover, calculated in terms of original ground cover (post – reinstatement)
- Number of Project related injured / dead fauna
- Number of disturbances to reinstated areas
- Number of incidents / damages to critical habitats

2.10.2.3 Operations Environmental Monitoring Plan

This plan outlines monitoring requirements of all ecological management activities during the Project's Operational Phase. It is 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.

The key ESMS documents appear overdue for review and revision. The biodiversity related management requirements in the Ecological Management Plan, and Environmental Monitoring Plans were adopted from the ESIA and BAP, they were last reviewed in and 2017. It is however understood that to keep the BAP current, it will be reviewed in 2022, 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 for the IESC to review the updated BAP is not considered a compliance issue, the IESC recommends that the BAP is reviewed once updated.

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.

In September 2022, a site visit was undertaken by the IESC team, so that the implementation of mitigation could be seen firsthand. That said, as the IESC only had a five-day period to undertake their site visit, only a limited number of sites could be visited. Therefore the implementation of mitigation has been discussed in the following sections based on a review of available reports and photographs provided by TANAP and their appointed sub-contractors, as well as first hand 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.

2.10.5 Monitoring

2.10.5.1 Summary of ecological monitoring during operations

As reported by TANAP's environmental department during this 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 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.

2.10.5.2 Ecological Monitoring by Independent Third Party

TANAP has engaged with ENVY for its independent third-party ecological monitoring contractor. ENVY 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. IESC reviewed 12 monitoring reports produced during 2022. A noted omission is the 2022 botanical survey report which had not been received from ENVY by the time of the IESC review.

ENVY's faunal monitoring reports covered all terrestrial and freshwater critical habitat areas and SCC. Timing and methods of the monitoring meet the BAP requirements. The 2022 botanical report has not been received or reviewed to date by IESC, therefore it is not possible to conclude if TANAP meets its biodiversity monitoring commitments for the critical habitat areas and species as required by the BAP. If the 2022 habitat and botanical monitoring report is written to the same standard as that produced in 2021, then TANAP will meet its biodiversity monitoring commitments, but a review of the report will be required to confirm this.

2.10.6 Conservation of Biodiversity

2.10.6.1 Critical habitats

The Biodiversity Action Plan (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 three ENVY monitoring reports provided (ASE-PRM-ENV-GEN-044_Ma7 2022_Redacted, ASE-PRM-ENV-GEN-045_June 2022_Redacted, ASE-PRM-ENV-GEN-046_ July 2022_Redacted); surveys as per the BAP for both fauna and flora were undertaken, targeting the Critical Habitat areas. The results of the faunal monitoring have been provided in separate reports for each target species group.

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. For example, the Aquatic Monitoring Report (ASE-REP-ENV-GEN-064) dated June-August 2021, states that:

- It has been observed that the habitat has almost recovered after the construction in terms of bottom structure (stone, gravel, sandy, etc) and riparian zone (especially aquatic plant and vegetation).
- Compared with the pre-construction period, the fish composition and their population densities were found to be similar after construction in the river crossing areas.
- Compared with the pre-construction period, the composition of the microbenthic organisms was also found to be similar to that recorded after construction.
- In general, no negative effects are observed and determined in terms of habitat structure and aquatic organisms identified in the freshwater critical habitats.

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 along with two offset documents i.e. the Forest Offset Project and Resilient Steppe Offset Project. Since this date, the updated (2022) Forest Management Plans (GLR-REP-ENV-GEN-029-P6-D, GLR-REP-ENV-GEN-033-P6-D, GLR-REP-ENV-GEN-037-P6-D) and Steppe Offset Management Plans (GLR-REP-ENV-GEN-024-P6-1, GLR-REP-ENV-GEN-030-P6-D, GLR-REP-ENV-GEN-034-P6-D) have been provided to the IESC for review.

With regards to the EBRD's (the lender's) requirements, the project is required to achieve no net loss of natural habitats and a net gain for critical habitats. Implementing the mitigation hierarchy during construction and operation is key to achieving a minimal residual loss because of project activities.

Now that the construction phase is complete and the operational phase has been entered, revegetation of the construction areas will be ongoing both naturally and facilitated by planting and seeding where required. Revegetation of bare ground will take time, in some of the more extreme environments (e.g. gypsum steppe), it may take more than five years. But it is principally revegetation that is key to minimizing the residual impacts caused by the project. The success of revegetation, and the quantification of residual impacts can only be realized through the ongoing monitoring of the right of way, to update and confirm the residual impact estimates (habitats losses) set out in the BOS.

The Forest Offset Management Plans are well developed, and currently being implemented. IESC has also noted that TANAP have engaged with the General Directorate of Forestry, 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 while these management plans are being adopted as part of the TANAP offset, if they are successful, then this type of forest management action, with strict conservation zones and limited implementation zones, may be adopted as a strategy across Turkey, possibly providing positive benefits over a much wider area.

The Steppe Offset Management Plans made for a very interesting read. It was also a very valuable experience visiting two of the sites where the management actions will take place. While the IESC have confidence in the team leading the steppe offset, the measures being implemented are experimental, therefore 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.

To maximise the likelihood that TANAP will achieve no net loss/net gain for biodiversity (overall), it is important to also continue with implementing the mitigation hierarchy. The reduction of residual impacts, though ongoing monitoring and (where required) implementation of remedial measures on the right of way, will, over time minimise the residual impacts of the project and this will ultimately lessen the demands on the performance of the offset projects.

As a result, it is important that TANAP undertake the following activities to minimise residual impacts and assess offset performance:

- 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.
    - 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).
    - 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.
- 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) should be assessed using power analysis.
- 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. Both offset projects (forest and steppe) if successful, may also be the precursor to much larger conservation projects within Turkey, which would be beneficial to TANAP's reputation.

Appendix A: Evidence Register

Document Number	Document Name	Author	Code	Date	Environment/Social/OHS
01	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – MS1 / CS1	TANAP	TNP-REP-ENV-CS1-005	January 2022	ENV
02	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – CS3 AMC	TANAP	TNP-REP-ENV-CS3-001	December 2021	ENV
03	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – CS5 / MS2	TANAP	TNP-REP-ENV-CS5-006	December 2021	ENV
04	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – CS5	TANAP	TNP-REP-ENV-CS5-007	August 2022	ENV
05	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – MCC	TANAP	TNP-REP-ENV-MCC-003	December 2021	ENV
06	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – MCC	TANAP	TNP-REP-ENV-MCC-004	January 2022	ENV
07	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – MCC	TANAP	TNP-REP-ENV-MCC-005	August 2022	ENV
08	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – MS3 / MS4	TANAP	TNP-REP-ENV-MS3-004	December 2021	ENV
09	ENVIRONMENTAL COMPLIANCE REVIEW REPORT – MS4	TANAP	TNP-REP-ENV-MS4-001	July 2022	ENV

10	2022 TANAP ENV KPIs	TANAP	-	August 2022	ENV
11	KPI_2022 Environment	TANAP	-	August 2022	ENV
12	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – Amphibians (April-May 2022 Period)	ENVY	ASE-REP-ENV-GEN-069	June 2022	ENV
13	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Freshwater Aquatic Fauna Monitoring (June-August 2021 Period)	ENVY	ASE-REP-ENV-GEN-064	December 2021	ENV
14	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – Birds (Jan-Feb-March 2022 Period)	ENVY	ASE-REP-ENV-GEN-066	May 2022	ENV
15	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – Invertebrates (May 2022 Period)	ENVY	ASE-REP-ENV-GEN-067	June 2022	ENV
16	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report	ENVY	ASE-REP-ENV-GEN-070	June 2020	ENV

	for Terrestrial Fauna Monitoring – Invertebrates (June 2022 1st Period)				
17	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – Invertebrates (June 2022 2nd Period)	ENVY	ASE-REP-ENV-GEN-074	July 2022	ENV
18	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – Invertebrates (July 2022 Period)	ENVY	ASE-REP-ENV-GEN-075	August 2022	ENV
19	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – Mammals (May-June 2022 Period)	ENVY	ASE-REP-ENV-GEN-073	July 2022	ENV
20	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – BVS21 OHL Bird Monitoring Survey Results (April 2022 Period)	ENVY	ASE-REP-ENV-GEN-068	June 2022	ENV
21	Environmental Third Party Monitoring and Consultancy Services Physical and	ENVY	ASE-REP-ENV-GEN-059	October 2021	ENV

	Ecological Monitoring Report for reforestation (2021 Period)				
22	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – Reptiles (May-June 2022 Period)	ENVY	ASE-REP-ENV-GEN-072	July 2022	ENV
23	Environmental Third Party Monitoring and Consultancy Services Physical and Ecological Monitoring Report for Terrestrial Fauna Monitoring – Reptiles (July 2022 Period)	ENVY	ASE-REP-ENV-GEN-076	August 2022	ENV
24	ENVIRONMENTAL THIRD PARTY MONITORING AND CONSULTANCY SERVICES MONTHLY REPORT-41 (MAY 2022)	ENVY	ASE-PRM-ENV-GEN-044	June 2022	ENV
25	ENVIRONMENTAL THIRD PARTY MONITORING AND CONSULTANCY SERVICES MONTHLY REPORT-41 (JUNE 2022)	ENVY	ASE-PRM-ENV-GEN-045	July 2022	ENV
26	ENVIRONMENTAL THIRD PARTY MONITORING AND CONSULTANCY SERVICES MONTHLY REPORT-41 (July 2022)	ENVY	ASE-PRM-ENV-GEN-046	August 2022	ENV
27	GREENHOUSE GAS EMISSIONS REPORT 2021	TANAP	TNP-REP-ENV-GEN-032	March 2022	ENV

28	029_2022_O&M Initial Incident Notification_CS1_KP158_Environmental Incident_Oil Spill	TANAP	-	August 2022	ENV
29	037-2022_O&M Initial Incident Notification_DSE_EI_Oil Spillage	TANAP	-	May 2022	ENV
30	Resilient Steppe Offset Plan – Acıkır Gypsum Steppes (Eskişehir	TANAP	GLR-REP-ENV-GEN-024	May 2022	ENV
31	Resilient Steppe Offset Plan – Bursa Kütahya Serpentine Steppes	TANAP	GLR-REP-ENV-GEN-030	May 2022	ENV
32	Resilient Steppe Offset Plan – Hafik Zara Gypsum Steppes (Sivas)	TANAP	GLR-REP-ENV-GEN-034	May 2022	ENV
34	WASTE MANAGEMENT PROCEDURE	TANAP	TNP-PCD-ENV-GEN-007	May 2022	ENV
35	WASTE MANAGEMENT PLAN FOR OPERATIONS	TANAP	TNP-PLN-ENV-GEN-007	May 2022	ENV
36	ENVIRONMENTAL MONITORING PLAN FOR OPERATIONS PHASE	TANAP	TNP-PLN-ENV-GEN-008	August 2022	ENV
37	Incident Register TANAP - 2022	TANAP	-	September 2022	OHS
38	HS KPI Report_ as end of July 2022	TANAP	-	August 2022	OHS
39	TNP-OPR-TMP-019 Site ER Exercise Report_CS3AMC **X 24**	TANAP	TNP-OPR-TMP-019	Various	OHS

40	DR-PT-1-2-3-4-6-7-8-9-10-220812 (Patrolling daily report)	BOTAS/PPT Anadolum/TANAP	-	August 2022	All
41	KARST SURVEY SERVICE REPORT 2021	Temelsu	TMS-REP-OPR-GEN-031	January 2022	ENV
42	Land And Slope Erosion Survey Service Report (2021) **X 4**	TANAP	TMS-REP-OPR-GEN-032	January 2022	ENV
43	Landslide Survey Service Report (2021)	TANAP	TMS-REP-OPR-GEN-030	January 2022	ENV
44	River Crossing Survey Service Report (2021)	TANAP	TMS-REP-OPR-GEN-033	January 2022	ENV
45	eBA_screenshoot_Consultation Process Flow_sample	TANAP	-	September 2022	Social
46	eBA_screenshoot_Consultation Process Flow_sample	TANAP	-	September 2022	Social
47	eBA_screenshoot_Registry Items	TANAP	-	September 2022	Social
48	Consultation Form_Cumhuriyet_Ardahan (Community Health&Safety) _Redacted	TANAP	-	March 2022	Social
49	Consultation Form_Gobel_Balikesir (Community Health&Safety) _Redacted	TANAP	-	August 2022	Social
50	Consultation Form_Saricaali_Edirne (Community Health&Safety) _Redacted	TANAP	-	March 2022	Social
51	Consultation Form_Alkoy_Ardahan	TANAP	-	July 2022	Social

	(Maintanence Activities) _Redacted				
52	Consultation Form_Cihangazi_Bilecik (Maintanence Activities) _Redacted	TANAP	-	March 2022	Social
53	Consultation Form_Hamamkarahisar_Eskisehir (Land Use Violation) _Redacted	TANAP	-	June 2022	Social
54	Consultation Form_Hamamkarahisar_Eskisehir (Land Use Violation) _Redacted	TANAP	-	June 2022	Social
55	SOCIAL COMPLIANCE REVIEW FOR OPERATIONS (NOV 2021-APR 2022) – CS3 AMC	TANAP	TNP-REP-SOC-CS3-004	May 2022	Social
56	SOCIAL COMPLIANCE REVIEW FOR OPERATIONS (SEPT 2021-FEBR 2022) – CS5&MS2	TANAP	TNP-REP-SOC-CS5-004	March 2022	Social
57	SOCIAL COMPLIANCE REVIEW FOR OPERATIONS (AUG 2021-JAN 2022) – MS3&MS4	TANAP	TNP-REP-SOC-MS3-004	April 2022	Social
58	GRIEVANCE MANAGEMENT PROCEDURE	TANAP	TNP-PCD-SOC-GEN-001	August 2022	Social
59	End Term Impact Evaluation (RETIE) Final Report	TANAP	-	December 2021	Social
60	QHSSE_OrgChart_2022-07-01	TANAP	-	May 2020	OHS

61	Patrolling Team's Daily Report (DR-PT-9 220927_MonitoringVisitDay)	TANAP	-	September 2022	ENV
62	High Priority Findings Daily Report	TANAP	-	September 2022	ENV
63	Info pages: Three findings reported by the RoW Patrolling Team	TANAP	-	September 2022	ENV

Appendix B: Previous Action table updates

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
1.1 (2.3.4)	The EMP does not include annual geo-hazard monitoring that is undertaken by the external contractor (SME) Temelsu.	It is recommended that the EMP is updated to incorporate on-going geo-hazard monitoring under the Physical Monitoring section.	FC	PS1	Closed – this section now clearly references the monitoring of geo-hazards
1.2 (2.3.4)	The EMP does not define what a non-conformance is, however, it is assumed that non-conformances do not include identified defects as a significant number of defects have been detected.	It is recommended that TANAP revises the EMP to incorporate a clear definition of what a non-conformance does and does not relate to.	FC	PS1	Closed – a new Section 2 has been added to the Plan that defines non-conformances. Open
1.5 (2.6.6)	A review of the definition of AGI-affected settlements is under consideration (i.e. this is a suggestion not a non-compliance)	Any change in definition would trigger a Management of Change process to update project documentation	FC	PR 1	Closed
3.1 (2.4.2)	KPIs presented to the IESC do not align with those included in Appendix 2 of the TANAP Operational Environmental Monitoring Plan. Breaches of wastewater quality threshold values identified by ENVY are not captured as non-conformances under the relevant KPI as presented.	It is recommended that TANAP re-considers how information on environmental KPIs is collated and reported to ensure that the requirements of the Operational Environmental Monitoring Plan are being fully met, and that the data reported accurately reflects the findings of all current	FC	PR 3	Partly closed – the KPIs presented to the IESC now fully align with those defined in the EMP. However, the monthly KPI results do not fully reflect the findings of environmental monitoring for wastewater quality against Project Standards. Please now see updated summary table in

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
		environmental monitoring results.			the executive summary.
4.1 (2.6.6)	There is evidence of a potential gap in information disclosure with seasonal residents / where the Muhtar signed off on Land Exit forms.	TANAP to share directly the safety zone and other emergency response information with seasonal residents, as far as practicable.	FC	PR 1; PR 4	Closed
6.1 (2.10.2)	It is understood that to keep the BAP current, it will be reviewed in 2022, 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 as soon as possible, and that TANAP document all plan reviews and keep document revision controls updated for tracking.	FC	PR6	Open
6.2 (2.10.5)	The bio-restoration of Lot 1 – 4 is now completed, and generally meets targets set in the BAP. In a few locations, the targets aren't yet met; but monitoring and remedial activities will be ongoing undertaken by RoW team reporting to TANAP.	TANAP have informed that 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. This should continue for the lifetime of the project	FC	PR6	Open

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
6.3 (2.10.5)	The BAP has been implemented across the Project and the CH restoration is generally meeting targets	TANAP to continue monitoring and implement remedial actions as required.	FC	PR6	Open
6.5 (2.10.6.3)	To date the biodiversity offset projects activities are progressing despite COVID-19 restrictions. TANAP have stated that the Site-Specific Offset Management Plans will be prepared and pushed out for review by Q2 2022. These plans will be key for understanding the likely success of implementation and should contain clear KPIs or monitoring matrices. The success of the biodiversity offset projects is key for achieving Net Gain for biodiversity.	TANAP have informed the IESC that the site-specific management plans will be made available by April 2022 for review. They will be developed based on the findings of the 2021 surveys as well as feedback that has been provided previously during the 2020 review. Full comment will be made on the site specific offset management plans once they have been issued for review.	PC	PR6	Open
10.1 (2.9.1)	Third party monitoring of community health and safety measures indicate concerns about stack gas emissions and their impact on beekeeping.	TANAP to register these through the consultation register and manage these concerns through the stakeholder engagement process.	FC	PR10 / Stakeholder Engagement Plan	Closed
10.2 (2.9.2)	35 of 62 open grievances relate to reinstatement and are overdue; 30 of these are in a ‘waiting’ category where an	TANAP to update the Grievance Management Procedure to reflect the ‘waiting’ status (with	FC	PR10 / Grievance Procedure	Closed

Ref	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
	approach has been agreed with the complainant but cannot yet be implemented due to weather conditions.	appropriate checks and balances to document what actions have been agreed with the complainant).			