SUSTAINABILITY FUTURE GROWTH	TANAP TRANS ANATOLIAN NATURAL GAS PIPELINE PROJECT	TANAP

IESC Remote Monitoring Report December 2020

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Acronyms and Abbreviations

AFAD	General Directorate of Disaster and Emergency Management
AGI	Above-Ground Installation
BAP	Biodiversity Action Plan
BOS	Biodiversity Offset Strategy
BOMP	Biodiversity Offset Management Plan
BVS	Black Valve Station
CC	Construction Contractor
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
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
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
MP	Management Plan
MS	Metering Station
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 risk based, focused remote assessment was implemented as the planned site visit for 2020 was not able to be conducted due to COVID-19 risks and COVID-19 travel related restrictions. The remote assessment was not designed nor implemented to assess TANAP against all the requirements of a full site based assessment, and in addition not all TANAP systems and potential impacts were sampled. Finally, although TANAP made extreme efforts to provide evidence of compliance where required, the lack of physical assessment and validation by the IESC in person result in some aspects not able to be 100% validated by the IESC. TANAP have agreed that the 2021 site visit by the IESC will be used both as a normal site assessment, but also to close out any aspects not able to be 100% verified during this remote assessment.

The original Project Execution Plan (PEP) described the implementation of the IESC Services (IESCS) 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 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 has been revised to reflect the changes in the approach for the 2020 monitoring and assessment due to the global impacts of COVID-19 on travel, travel restrictions and general risk exposure of global travel. The key changes have been that the 2020 IESC assessment would be conducted remotely (no IESC members did travel to any TANAP sites) and the IESC has therefore undertaken a risk based, focused assessment. The assessment is still based on appropriate lender codes (FC & PC) and takes into accounts actions completed by TANAP since the last report.

At the time of the monitoring visit (19 – 23 October 2020), the construction phase (Phase 0) 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 30.04.2019 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 (48inch 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 TANAP system is ready for the commencement of commercial deliveries to TAP. The following sections outline the summary of specific Performance Standards.

PS/PR 2 & PR 4 Occupational Health and Safety

The IESC took a focused, risk-based approach to the remote assessment of OHS, and the focus was on (but not limited to):

- COVID management
- Operational OHS competence
- Handover from EPC to TANAP Operations
- Operations risk management, including Standard Operating Procedures (SOPs) and Permit to Work (PTW) management
- Incident management
- Plant maintenance and inspections for GCS with a focus on gas detectors and emergency & fire evacuation systems
- Crises and Emergency Management with a focus on emergency exercises conducted

General safety lagging statistics and leading safety indicators were very good with incident statistics being of industry best standards. Incident investigations were well conducted with good learnings. There was an improvement in the scheduling and conducting of emergency exercises which is commended.

Overall all systems sampled were compliant with requirements and many were excellent. This is with the caveat that this was a risk based focused assessment and not all systems were sampled. Some examples of good to excellent systems sampled include:

- The COVID-19 Risk assessment was a very well thought out and useful document.
- The OHS risk based sample of systems had a focus on the move to operations and all the required systems sampled were of a very high standard, examples of sampled system documentation reviewed included (but is not limited to):
  - Commissioning handover documents
  - Operations risk assessment
  - SOPs for BVS and CS
  - PTW procedure
  - Plant maintenance schedule for fixed fire system and gas detectors

Risk based systems in place for the management of safety and risk during handover, commissioning and the start of operations were also of a very high standard.

PS/PR 1 Monitoring and Reporting

Environmental

TANAP has implemented a multi-party approach to Operational environmental monitoring as follows:

- EPC Contractors aftercare monitoring (throughout their warranty periods) – at least quarterly;
- Third party company monitoring (undertaken by ENVY) – monthly;
- Right of Way Patrolling works (undertaken by the subcontractor-Fernas under the services contract with Botaş) – monthly;

- Geo-hazard monitoring (undertaken by the Contractor Temelsu) – as required;
- Greenhouse Gas (GHG) Emissions Reporting (undertaken by Çinar) and Continuous Emission Monitoring System (CEMS) monitoring– on-going; and
- Internal audits undertaken by the TANAP Environment Department – annual.

The purpose of the monitoring is to ensure first, that the integrity of the pipeline is maintained and second, that TANAP are meeting their commitments with regard to pollution prevention. The Operational environmental monitoring requirements are outlined for the most part in the Operations Environmental Monitoring Plan (TNP-PLN-ENV-GEN-008), however, it is recommended that this Plan is revised to also incorporate geo-hazard monitoring. All required monitoring appears to have been undertaken as planned (with minor exceptions due to COVID-19 restrictions). Whilst the monitoring appears to be effectively identifying infringements on the pipeline RoW, the IESC has observed some potential issues with the identification and registration of defects (see PR 3 below).

Social

For Operations, TANAP has in place a Social Action Plan (TNP-PLN-SOC-GEN-013) and a Social Monitoring Plan (TNP-PLN-SOC-GEN-014). These Plans guide social aspects of TANAP's activities are managed in line with project standards, encompassing social issues such as: stakeholder engagement, grievance management, community and worker safety, contractor management, and labour and working conditions. Stakeholder Engagement and Grievance Management Plans support. Additionally, the suite of RAP documentation remains in effect until such time as successful completion of the RAP End-Term Impact Evaluation (RETIE), anticipated for completion in 2021.

PS/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 for through the Human Resources Management Plan. The Integrated Project Management Team (IPMT) is now 367 people, 16% of whom are women. Turkish nationals make up 96% of the workforce.

A small number of contractors remain on site to complete warranty defects. They will remain in Lots 1, 2 and 3 until December 2020, and in Lot 4 until December 2021, at the conclusion of the warranty periods for respective Lots. Third party monitoring consultants, Practical Solutions, is engaged to monitor contractor compliance with local labour laws until the end of 2020. Thereafter, they will continue to monitor integrated services contractors.

There were no open grievances from contractors at the time of this virtual visit.

PS/PR 3 Resource Efficiency, Pollution prevention and Control;

TANAP has reported meeting all its required emissions performance targets and there have been no environmental incidents or non-conformances during the past 6 months.

Greenhouse gas emissions are being calculated and reported in line with Project commitments. These have increased during operations, as predicted, due to the start of operation of all the components of the Phase 0 facilities plus the startup of Phase 1 facilities.

The relevant Operational Management Plans are in place for the management of waste and hazardous substances/materials. However, it was not possible for the IESC to verify their effective implementation without undertaking a physical site visit.

There are (anticipated) on-going issues with soil erosion, especially on steep slopes, which necessitate that TANAP maintains its program of regular, risk based monitoring; to ensure that all defects are identified and repaired in a timeframe commensurate with the risk to the integrity of the pipeline. Potential inaccuracies in the findings reported following Contractor monitoring, and inconsistencies between reported monitoring results and the Defects Register suggest there is a need for a more integrated TANAP review of all monitoring reports submitted and to ensure that the Defects Register accurately reflects the situation on the ground. The IESC will need to verify any potential soil erosion control issues noted during this remote audit through a physical site visit, as it is not possible to ascertain the condition of the RoW with an adequate level of confidence based on photographs provided by a third party.

PS/PR 4 Community Health and Safety

Meetings to public disclose the Community-based Emergency Management Plan have been stalled due to Covid-19 restrictions on public meetings in Turkey. This topic will be introduced to communities along the RoW when face to face meetings are again possible.

Third party monitoring of community health and safety mitigation measures are monitored by third party consultants, ENVY.

PS/PR 5 RAP and LRP

Expropriation has been completed and all compensation and RAP Fund payments have been made. More than 98% of land parcels have been registered to LRE. Consultation on land acquisition and livelihood restoration remains an ongoing activity for TANAP. Land Use awareness meetings; and the LRP Monitoring and Final Informative meetings are drawing to a close in anticipation of the upcoming RAP End-Term Impact Evaluation (RETIE) (RAP Completion Audit).

Key Performance Indicators (KPIs) for grievances have not been met in Q2 and Q3 of 2020, however this is not unexpected due to the impacts of Covid-19. TANAP has been able to close an increasing number of the overdue complaints since August, and is expecting to be able to meet KPIs again before December 2020.

The Appeals Committee has been effective in facilitating grievance resolution. Of those grievances that have been escalated to the Committee (25 in total), 75% have been closed by mutual agreement.

The RETIE terms of reference have been prepared and a contractor selected. The evaluation design is being prepared bearing in mind covid-19 restrictions. The initial scoping phase is planned to commence in November 2020; field study is scheduled for spring 2021; and the final report is due in July 2021.

Additional studies have commenced and been recently completed in anticipation of the RETIE and as were identified by the External Monitoring Panel. These include preliminary investigation into reasons for refusal to sign off on Land Exit Protocols (LEPs) so as TANAP to provide them as input for RETIE, and a study composed of two main topics focusing on into pipeline-affected vulnerable PAPs and livelihood assessment of PAPs affected by pipeline-induced land acquisition. Actions have been identified where necessary and are being implemented as appropriate in response to these studies.

PS/PR 6 Biodiversity conservation and sustainable management of living resources

To date 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 form the OHL operation.

TANAP is required to make a decision on additional impact mitigation measures for potential bird impacts from the OHL. Other than this, the Project's operations potential impacts to biodiversity, and impact mitigation measures have been included in the Ecological Management Plans, which is based on the pipeline ESIA, and Biodiversity Action Plan (BAP) requirements for critical habitat areas and Species of Conservation Concern (SCC). TANAP is progressing with the Biodiversity Offset Management Plan, and Site Specific Offset Management Plans for the residual impact offset.

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 undertaken by construction contractors for their respective LOTs and the independent monitoring consultant ENVY for the entire length of the pipeline. Although the monitoring efforts are completed as required by the TANAP's requirements, the IESC noted some conflicting findings between the different monitoring contractors' findings, as well as variances between the monitoring findings and the photographic evidence provided. These disparities include, for example, the stated vegetation cover recovery in LOT2 and provided photos for the same areas included in the Aftercare Monitoring Report SYA-MST-ENVIRONMENT-PL2-011-P4-C. Another example is the SCC *Thymus leucostomus's* recoveries at the CH58. The contractors aftercare monitoring and the independent monitoring parties reported hugely different recovery rates for this species. It is important for TANAP to cross examine the monitoring report findings and take necessary actions.

ENVY's August 2020 monitoring (ASE-REP-ENV-GEN-034-P4-C) reported damages to critical habitat areas from excavation works in CH1 CH7, CH13, damages to CH3 areas from large vehicle movement, and loss of reforested trees from grass mowing. Damages to critical habitat area are KPI issues and should be recorded and investigated by TANAP.

ENVY's monitoring in July 2019, August 2019 and August 2020 indicated an extensive growth of opportunist species in some critical habitat areas. For example, the August 2019 monitoring (ASE-REP-ENV-GEN-019) found opportunist species of *Onopordum* sp.*, Centeurea* sp., *Salvia sp., Verbascum* sp*.* and *Polygonum* sp*.* etc., throughout the monitoring line, potentially limiting the target species recovery at CH15. The August 2020 Monitoring Report (ASE-REP-ENV-GEN-034-P4-C) also reported an extensive growth of *Cirsium* sp*., Verbascum* sp and *Onoropdum* sp on the CH14 and CH15 areas. The monitoring reports did not specify the species name fully, but indicated them as invasive

species, so it was not possible to determine if they were listed invasive species or opportunistic dominant species following soil disturbances along the ROW. Some of these species, for example, the polygonum sp. could be an invasive weed categorised as alien in Turkey, and included in the Project BAP. TANAP needs to investigate these reported opportunistic or possibly invasive species to determine the severity of threats to CH target species and take effective mitigation and management measures if needed.

From the update from TANAP during the audit, and the reviewed documents, IESC concludes that the reported damage and opportunist species issues to critical habitat areas have not been included in the Action Tracking System for investigation and possible action. Therefore, it is IESC's conclusion that TANAP does not fully comply with the Conservation of Biodiversity requirement of the PS6 and PR6 (Table 1). IESC recommends TANAP to investigate these incidents in the critical habitat areas and document for next IESC audit for verification.

PR10 Stakeholder Engagement and Disclosure

During operations, third party monitoring is to be carried out by consultant, Envy, on operational delivery of engagement and grievance management commitments. Their review will include review of Online Stakeholder Interaction Database (OSID) records as well as provide an assessment of the adequacy of planned engagement activities.

Ongoing engagement work relates to, inter alia, third party crossings, violations, and land use awareness meetings. Engagement related to land re-entry for repair & maintenance works needed during the operational work is also ongoing. The virtual visit provided sound evidence of the coordinated, electronic system in place to ensure the social impact team is well integrated into TANAP's land entry and exit processes during operations.

TANAP has recognised limitations in its recent engagement activities and is going to develop an Interim SEP to document TANAP's engagement requirements and approaches under the pandemic scenario. TANAP is commended for developing evidence-based approaches to most appropriately deliver its engagement activities, such as providing webinars for government and civil society stakeholders, through to phone/videocalls with muhtars in rural areas without access to online facilities.

Summary of concerns and recommendations

The following table outlines the key findings and recommendations of this report. The Table includes one open item and three closed items with recommendations. These items are fully explained in sections 3.7.4 and 3.2.4 respectively.

Table 1 - Summary Findings

Section	Monitoring Exercise Date	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
3.7.4	October 2020	The LOT3 subcontractor's Aftercare monitoring, and ENVY's Monitoring reports reported damages and extensive growth of opportunist species in the Critical habitat areas	TANAP to investigate these reported incidents for their severity and take appropriate actions as required.	PC	PS6	Open
3.2.4	October 2020	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	Open
3.2.4	October 2020	The EMP does not define what a non-conformance is, however, it	It is recommended that TANAP revises the EMP to incorporate a clear definition of what a	FC	PS1	Open

Section	Monitoring Exercise Date	Description of Issue	Recommendation (action)	Compliance Category	Commitment	Status
		is assumed that non-conformances do not include identified defects as a significant number of defects have been detected.	non-conformance does and does not relate to.			
3.2.4	October 2020	The ENVY Monthly Reports include a lot of raw data but do not present conclusions	It is recommended that TANAP requests that ENVY restructures these Monthly Reports so that the bulk of the data is presented in an Appendix and a summary of the results and TANAP's performance against the relevant limit values is given in the main body of the Report.	FC	PS1	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 of 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 fourth monitoring event of the assignment which was a remote assessment completed from 19 – 26 October 2020 due to COVID-19 travel restrictions. 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 monitoring visits in 2017, 2018 and 2019.

The TANAP Project will deliver a 1,850km pipeline to facilitate the transport of natural gas produced from the Shah Deniz Phase II development in Azerbaijan to Turkey and Europe. The Project is being developed by a group of shareholders who currently comprise of Southern Gas Corridor Closed Stock Joint Company (58%), BOTAS (30%) and BP (12%) 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 1,850km, along with off-take stations and above-ground installations.

TANAP is being developed in phases, as defined below. It has recently completed Phase 1 construction.

- Phase 0: Initial phase of operation, 6bcma capacity of Shah Deniz 2 by mid-2018 will be delivered to BOTAS through the 56” pipeline section through the Eskisehir Off-take. No gas will be delivered to Thrace or Greece. Mechanical completion of Phase 0 was completed in Q4 2017. The Phase 0 facilities have been operational since mid-2018.

- Phase 1: To meet the throughput pf 16bcma, sized to transport the production capacity of Shah Deniz 2 by 2019 to BOTAS and TAP, the operation of 48" section of the onshore pipeline and the two compressor stations (CS-1 and CS-5) is required. The Phase 1 facilities are operational since mid-2019.

- Phase 2: To meet the throughput of 24bcma by 2023, upgrading of the Phase 1 compressor stations is required and an additional 2 compressor stations are needed to meet 24bcma flow requirements.

- Phase 3: To meet throughput of 31bcma by 2026, upgrading of the Phase 1 and Phase 2 compressor stations is required and an additional 3 compressor stations are needed to meet 31bcma requirements.

A Project Execution Plan describes the implementation of the IESCS 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 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 IESCS 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, RAPs-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 Phase 0 operations and Phase 1 construction works and 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.

It is important to note that the remote assessment does not allow the TANAP Project to be reviewed/monitored against all relevant local and international legal requirements and IFIs' Standards, Requirements and Guidelines. The purpose of the remote assessment is to provide an update on compliance requirements and will include a validation site visit in 2021, and it will be reported at the time of reporting of 2021 Monitoring Visit.

1.3 Project Status

At the time of the monitoring visit (19 – 23 October 2020), the construction phase (Phase 0) 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 30.04.2019 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 (48inch 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 28 November 2019. The Inauguration Ceremony of TANAP Phase 1 was held in Ipsala MS4 site on 30 November 2019 signalling that the system is ready for the commencement of commercial deliveries to TAP.

A summary of milestone events is outlined below:

Phase 0

- 1340km 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
- Commercial Operations started as of 30 June 2018

Phase 1

- Gas to Europe facilities (incorporating 460 km long 48” diameter pipeline and 2 x 36’’ diameter offshore pipelines); 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 Crossing 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
- BOTAS Second Contract Year has been successfully completed by 30 June 2020 with 100% operational efficiency.

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 1.1 of this report, the remote focused assessment undertaken did not assess the against all of these requirements, but was a risk based sample of TANAP systems, potential impacts and controls as well as a sample of specific requirements.

1.5 Sources of Information

For the remote monitoring assessment a document review component and online interviews with PAPs were included as part of the IESC assessment. 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 and of the presented material. The primary sources for information accessed for this IESCS review included, but was not limited to:

- Presentations prepared by TANAP teams focused on Project Overview, Environment, Social, OHS and RAP & LRP
- Project ESIAs produced for the Project including the information prepared for the trans-boundary notification and consultation;
- Supplementary environmental and social assessments undertaken in accordance with Project management of change processes;
- Construction and Operational Phase Environmental and Social Management Plans (ESMPs) and relevant additional specific plans including the Stakeholder Engagement Plan (SEP);
- 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 regarding Project progress and performance in the public media including newspaper articles, TANAP website and information published from stakeholders;
- Information from site inspections and interviews with TANAP personnel, Contractors and stakeholders; and
- Relevant Land Acquisition and Compensation (LAC) and Resettlement Action Plan (RAP) documentation and Grievance Mechanism.
- Patrolling reports, Aftercare Monitoring 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.
- Teams interviews with Project Affected Persons (PAPs)
- 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 a document review, presentation and photographic evidence. Social monitoring was undertaken as a document review, presentation, photographic evidence and video calls with PAPs.

1.6 Remote Assessment Attendance

The Remote assessment was conducted from the 19 to 23 October 2020 by the IESC, TANAP and EBRD. The team members of the IESC are:

- Heath Thorpe: Independent Consultant Team Project Director and OHS Specialist;

- Claire Penny: Independent Consultant Team Environmental Specialist;
- Nyamdorj Barnuud: 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 Administration.

1.7 Remote Assessment Itinerary

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

Day 1. 19 October 2020

- Remote monitoring opening session presentation
- Remote monitoring Overall Project Progress presentation.
  - Milestones achieved
  - Status of construction contracts
  - Transition to operations
  - Control of Work Procedure
  - Operational activities
- Remote monitoring HR presentation
  - Recruitment policy and approach
  - Organisational chart
  - Action Register
  - Demographics

Day 2. 20th October 2020

- Remote monitoring social presentation
  - Social KPIs
  - Grievance management
  - Land exit process
  - Operational phase ESIA monitoring
  - Stakeholder engagement during COVID-19
  - Land Use monitoring
  - Ongoing and forthcoming tasks
- Remote monitoring OHS presentation
  - Operations safety performance lost time incident frequency
  - H&S performance operations
  - Closed and outstanding audit findings samples
  - Action tracking
  - H&S organizational structure
  - Safety measures against COVID-19

Day 3. 21 October 2020

- Remote monitoring RAP & LRP presentation
  - RAP Corrective Actions
  - Land Acquisition

- RAP Budget & Expenditure
- Social Assessment of Pipeline induced Land Acquisition Impact on Livelihoods and Vulnerable People
- 2nd Round of LRAPs
- Exit Strategy
- RAP End Term Impact Evaluation
- Upcoming Tasks
- Remote interviews with Project Affected People

Day 4. 22 October 2020

- Remote monitoring environmental presentation
  - Environmental monitoring by TANAP internal and external audits.
  - Reinstatement status and status of ESIA
  - Monitoring by TPMC including flora and fauna surveys
  - Quarterly monitoring
  - Defect management
  - Operational readiness and permits
  - Environmental KPIs
  - Biodiversity offset management
- Remote interviews with Project Affected People.

TANAP Integrity Mapping Platform (IMP) 26 October 2020

- TANAP Integrity Mapping Platform (IMP)

- TANAP Aerial Survey and Photogrammetrical Inspection
- TANAP Pipeline Monitoring Systems

1.8 Report Organisation

Note that the structure of the report has changed from last year to make it more streamlined and easier to interpret. All requirements will now be found in Section 3 of the report.

1.8.1 Report Structure

1.8.1.1 Section 1 – Introduction

1.8.1.2 Section 2 – Status of Previous IESC Findings

This section will include a table that logs all past IESC findings to provide a status update, i.e. what findings are now closed, open or ongoing.

1.8.1.3 Section 3 – Findings and Observations

This section will include a table (Table 3 - Project Compliance with the Applicable Standards) that tracks the compliance of the Project across all performance standards but does not separate out specific compliance requirements. Project Compliance is organised by the following headings:

- Compliance with Local Legislation
- Environmental and Social Assessment
- Labour and Working Conditions
- Resource Efficiency and Pollution Prevention
- Community Health Safety and Security
- Land Acquisition, Involuntary Resettlement and Economic Displacement
- Biodiversity
- Cultural Heritage
- Disclosure and Stakeholder Engagement

1.8.1.4 Appendix A – Evidence Register

1.9 Report Limitations and Assumptions

General

The remote assessment was not designed nor implemented to assess TANAP against all the requirements of a full site based assessment, and in addition not all TANAP systems and potential impacts were sampled. Finally, although TANAP made extreme efforts to provide evidence of compliance where required, the lack of physical assessment and validation by the IESC in person result in some aspects not able to be 100% validated by the IESC. TANAP have agreed that the 2021 site visit by the IESC will be used both as a normal site assessment and also to close out any aspects not able to be 100% verified during this remote assessment.

OHS

The OHS assessment was a risk based sample and completely retrospective, i.e. there was no assessment of conditions in the field or people working in the field. This will be undertaken in the 2021 site visit.

Environment

It is not possible to verify the condition of the RoW, with regard to reinstatement and the effectiveness of soil erosion control measures, with an adequate level of confidence based on photographs provided by a third party, which do not show the level of detail or context that would ideally be gained from a physical site visit. As such, the conclusions in this Report will need to be validated during the next physical site visit and cannot be relied upon to be 100% accurate.

Social

There were some limitations to a virtual visit. For social issues, no physical presence on site limited the ability to:

- See employees at work and PAPs on land plots to verify verbal and non-verbal responses obtained through interviews carried out via videocalls;

- Pursue follow-up lines of questioning based on site inspection;
- Seek clarifications with interviewees or other TANAP staff outside the formal interview environment;
- Ensure audible, clear and uninterrupted interviews due to technology/connection limitations; and
- Confirm community health safety and security measures.

However, the IESC thanks TANAP for supporting the virtual visit and providing a best available alternative to ‘meet’ with employees and PAPs via videocall/conferencing facilities.

2. Status of Previous IESC Findings

Table 2 - Status of Past Findings

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
1.17	Organisational Capacity and Competency	**QHSE Resources** Going forward, the new Operating Company must be suitably structured and employ sufficient environmental and social personnel with relevant experience to ensure the effective implementation of the ESMS and that environmental, social and H&S issues present on the Project continue to be managed effectively.	In line with the completion of Construction Phase, the process of assigning competent employees to the Operations organization and providing support by Ankara Headquarters for Transition period is in progress.	Open The Project OHS team is transitioning to operations and a concern to the IESC is that a QHSE role is a very multidisciplinary role and whilst this may suit construction it is not always suitable for operations as the nature of the specialities has changed. Construction safety is vastly different from operational safety (which is more process safety orientated). A workshop was held with the QHSE Engineers from discipline leads from OHS, Environment and Quality to explain the requirements for the	Closed The qualifications that the Operational QHSE Engineers are required to have are considered to be appropriate for this multidisciplinary role. Additionally, the internal training that TANAP are providing for QHSE Engineers is considered to be suitably ranging to enable individuals to be able to fulfil all aspects of their roles. In addition there is process safety competence in the

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
				roles and a training matrix has been developed for the QHSE Engineers. The training matrix was sighted and does not contain sufficient detail to provide evidence that the QHSE Engineers will have sufficient training and competence for such a multidisciplinary role. Despite being fully compliant, further work is also required to develop detailed role descriptions for the QHSE Engineers that will allow them to assess their competence and confidence to undertake the roles and consideration should be given to splitting the roles into disciplines, based on risk.	Operations and Maintenance team To enhance the occupational capabilities of QHSE Engineers, with the full supports of Quality, H&S and Environmental Departments, several capacity building activities have been carried and will be maintained as per the needs closely followed-up and assessed by HQ Teams. Supports provided by areas of expertise are given in detail below: **H&S** QHSE Engineers attended the below listed trainings:

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
				Whilst this has been found to be fully compliant an observation has been made as follows: Further work is required to develop detailed role descriptions for the QHSE Engineers that will allow them to assess their competence and confidence to undertake the roles and consideration should be given to splitting the roles into disciplines, based on risk. It is also recommended that a tailored training programme is developed for the Operational QHSE Engineers to be based on site to ensure they have adequate background understanding of all the topics they are expected to oversee. Further, Social Impact (SI) specialists team may also require review upon demobilisation of all	• Work at Height • Energy Isolation Authority • Confined Space • Nitrogen Awareness • Lifting Activities And all staff in question have had and will be having exposure to hands-on site experience on these processes and activities on a continuous basis. **Quality** Site QHSE Specialists have been trained for Quality Assurance and Control Basics in two sections at 21 August 2020 and 08 Sept 2020. The training was also focused on Quality requirements for Operations Phase with

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
				Contractor CLOs/stabilisation of the Modifications team, to ensure that the entire operation is sufficiently covered by appropriately qualified and available SI specialists.	emphasize of role specific issues. The Team is also supported with practical implementations related with Auditing and Incoming Inspections as part of Hands-on Training Phase, which is almost completed. The Team proved competency by attending Internal Audits as Auditors and satisfactorily conducting incoming inspections as day-to-day quality practices. Their site exposure to quality assurance and quality control processes for both operations and maintenance and projects and modifications related activities will be ongoing as business as usual at all sites.

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
					ENV Tailored Environmental trainings were provided to QHSE Engineers by the Environmental Team in three sessions since the last mission covering subjects of environmental incidents, contractor management, waste management, environmental monitoring, pollution prevention, legal and other requirements, environmental permitting, RoW patrolling, biodiversity and COVID-19 specific precautions. Furthermore, on-the-job trainings were provided at the stations with various occasions on PWTP & WWTP operations

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
					and other environmental management subjects. **SOC** TANAP SI team is now complete with the recent recruitment of MS1&CS1 Assistant Social Impact Specialist. Currently, a team of 7 is undertaking operational activities at HQ and sites
1.20	Emergency Preparedness and Response	See Recommendations.	-	Open Lagging OHS statistics are excellent and best practice, except for emergency drills conducted against target (14 from a target of 24). Emergency drills are a vital aspect of risk management and especially	Closed Updates on the recommendations: • Emergency drills have regularly been conducted site based. The Drill Target set in the H&S KPI

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
				important as a project moves into operations. It is recommended that: • Emergency drills be conducted on a regular basis in accordance to targets throughout the year at all locations and scenarios should be risk based. • Complete disclosure of the Community-based Emergency Response Management Plan. • Emergency Response (ER) Plans developed for all Ops sites.	is 1/quarter/site. Drill scenarios have been planning risk based. • Site based Emergency Response Plans developed. • Engaging local communities on Community-based Emergency Management Plan is scheduled to post-COVID-19 conditions. Due to the nature and content of the Plan, online engagement is not considered as an appropriate and effective tool as it may evoke panic and stress in communities. Noting that public disclosure of the MP is scheduled when Covid-19 restrictions are lifted.

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
1.22	Monitoring and Review	Whilst this has been found to be fully compliant an observation has been made as follows: TANAP must continue to work closely with Contractors to ensure that any reinstatement defects that are identified through the third party or Contractor monitoring process are repaired in a timeframe that is commensurate with the risks. Particular attention should be given to reinstating overspill areas.	Ongoing This is an ongoing item until the end of Warranty Period of the CC's Contracts. CCs have Aftercare Monitoring Plans and make their monitoring studies quarterly and submit the relevant reports.	Open This IFC PS was fully compliant, however this is only an observation: The IESC notes that ROW patrolling could potentially be strengthened by use of technologies (e.g. drones, VR), particularly in areas which may be harder to access for any reason. The IESC notes that some technologies are already under consideration (e.g. aerial surveying methods) in addition to photogrammetric surveying. .	Open Recommendation noted and shared with the responsible department – TANAP Integrity Management (IM) for their info and consideration. As per given more details from IM Dept., in current technology, considering the drone maximum range, local legislative requirements, geological and topographic structures, it has been understood that it is not very effective as expected and feasible at this stage, and it is planned to be used in some exceptional cases. For this reason, TANAP patrolling studies will continue

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
					in the form of physically walking on the field, as it will not contribute to our remote work. In addition, it is planned to take aerial photographs of the entire line with a manned large aircraft for a detailed evaluation of the entire line in 2021 In addition to that, there are still a few number of open warranty defects that will require on-going collaboration between TANAP and Contractors to be repaired before the end of the individual Contractor warranty periods. There are some inconsistencies between the Aftercare and Monitoring Reports and the defects

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
					register and some potential defects that are not identified as such in the Report. This implies the need for closer scrutiny by TANAP of the Contractors' monitoring findings and the registration of defects within the Defects Register.
1.26	Stakeholder Engagement	• This IFC PS was fully compliant, however this is only an observation • There is a need to maintain efforts in stakeholder engagement (SE) and information disclosure (ID). The Project construction is	Ongoing with progress SE activities are ongoing. Land Use Information Meetings have been completed in about 50% of Project-affected settlements and will be completed in the remaining settlements as per the Project schedule.	Open. Ongoing with progress, with the IESC observing that TANAP needs to ensure the basics of good engagement practice need to be met (e.g.: engaging with stakeholders using appropriate methods, engage at suitable times, follow up as necessary). Evidence that some issues may have slipped are:	Closed Stakeholder engagement is an ongoing activity; no further observations or findings during this virtual visit. Possible approaches for disclosing information and engaging with stakeholders in the context of Covid-19 pandemic are considered. Once the tools/methods are

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
		nearing completion; however impacts are ongoing in active work areas. The Project's SE and ID needs to continue to respond to stakeholders, as well as Project, needs.	Annual stakeholder meetings will be held in December 2019 as planned.	• The first round of Land Use Information meetings have been held; a second round has been identified as necessary given low turnout to round one. • Outstanding engagement issues and requests are yet to be addressed (e.g. turning lane on the road into CS5/MS2). • Disclosure of and engagement on the Community Based Emergency MP is planned for 2020, although Lots 1, 2, and 3 are under Operations control.	determined, a tailored interim SE strategy is planned to be developed as an annex to our SEP. Land Use Information Meetings have been completed (meetings in some of the remaining settlements were completed through phone interviews with muhtars due to Covid-19 restrictions). Community disclosure meetings specific to Community Based Emergency MP are on-hold due to Covid-19 restrictions. Annual Stakeholder Meetings of 2019 were completed. Annual Stakeholder Meetings of 2020 are planned to be

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
					organized as a webinar under Covid-19 exceptional circumstances.
1.34	External Communications and Grievance Mechanisms	This IFC PS was fully compliant, however this is only an observation. IT systems need to remain accessible during the transition into operations, including OSID for stakeholder engagement and grievance management.	Ongoing with progress OSID system is live, running and accessible to relevant parties as it was during the Construction Phase. OSID system will be re-structured to meet the needs of operational phase and will be live during that period as well.	Open. Ongoing with progress. The OSID system remains accessible to the operational organisation (TANAP). A new purpose-built database will be developed that will integrate grievances with engagement, environmental parameters, infringements and other land use data.	Closed OSID remains fully accessible.
1.5	Environmental and Social Assessment and Management System	Based on the findings of Çinar's bird monitoring report, TANAP are recommended to reassess the necessity for mitigation measures and further	In progress Post construction bird monitoring study was completed for Spring-2019 period and ongoing for Autumn-2019 period. Upon	Open. The spring and autumn bird monitoring by Cinar in areas with potential negative impacts to birds has been completed. TANAP needs to make a decision on additional	Open TANAP continues the additional bird monitoring in 2021 as suggested by the specialists. Based on the adequate monitoring results

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
		monitoring requirements for birds.	the outcomes of the Autumn Report, it will be decided whether this study will continue in the next year or not.	mitigation and monitoring measures based on the monitoring outcomes and update the necessary management plans.	TANAP will decide on additional mitigation measures.
2.23	Incident Investigation	See recommendations	-	Open The IESC recommend that a systematic process is implemented to ensure that all information arising from incidents and the associated investigations are transposed onto a database that is kept up to date at all time to allow for learnings from incidents to be shared across the business.	Closed The Consolidated Incident Log have been updated by TANAP HS Department and does not cover all the data in detail as it is updated as soon as the Incident notification received. Site – Based Incident Logs include the missing data mentioned in the IESC report. (applied to Construction Phase Incident Logs). Besides, TANAP keeps ''Operations &

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
					Maintenance Incident Register'' under the server. TANAP also keeps ''Lessons Learned Register'' and issue each Lessons Learned to the relative parties.
2.23	OHS - Decommissioning and deconstruction OHS risk management at CS5	See recommendations	-	Open Decommissioning and deconstruction of the camp was in progress, and a number of partial compliances were noted. The following recommendations are suggested: • More frequent inspections by TANAP on Contractor areas and activities • Checklists for inspections and audits based on decommissioning and deconstruction	Closed • Decommissioning and deconstruction of the camps concluded. • Site Management Walkdowns have been conducted more frequent at demobilization work sites • Teams have been notified about demobilization period and trained about the related risks • H&S Personnel kept in sufficient number to

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
				• HO personal conducting inspections	avoid HS Supervision deficiencies • Close monitoring and supervision by TANAP H&S Employees
5.13	General	This IFC PS was fully compliant, however this is only an observation. The IESC recommends that the RAP Monitoring Plan is revised and the SOW checked that it aligns with outcome / output indicators prior to tendering the Completion Audit.	Ongoing in progress SoW for Completion Audit was prepared and TANAP has recently got in touch with potential experts for that activity. RAP Monitoring Plan is also being revised.	Open. Ongoing in progress. The scope of work has been completed however the RAP monitoring plan has not yet been updated; this will need to be addressed in advance of the completion audit being carried out (mid-2020).	Closed The RAP Monitoring Plan was updated and disclosed on TANAP website by November 2020.
5.7	Monitoring	The IESC notes that the LRAP database will need to enable capture of roles, responsibilities and ongoing monitoring not only for construction phase, but	It continues as recommended. For details, pls. refer to 9th Internal RAP Monitoring Report.	Ongoing As at November 2019, 52% of the livelihood restoration budget has been spent. Preparation of the LRP for AGIs and the Fishing Livelihood	Open The RETIE (completion audit) terms of reference have been drafted and the consultant

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
		also the transition phase to operations. Livelihoods support may need to continue through the transition/operations phases in the case where livelihood restoration has not yet been achieved.		RP have both been completed. The FLRP has been fully implemented; the remaining funds are being disbursed on the LRP for AGIs. The RAP Completion Audit scope of work has been prepared and is anticipated for delivery in mid-2020. At this time it will be clear if any additional actions are required to close out livelihood restoration measures. Until such time, internal monitoring continues with the existing team in place with access to all data collected to date on all RAP-related activities. Remains open until conclusion of the Completion Audit.	engaged. The work is due for completion by July 2021.
6.7	LOT 4 Biorestoration & reforestation	TANAP has not yet commenced biorestoration or reforestation in LOT 4; the majority of plans are in	Closed for Bio-restoration activities	Open.	Closed

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
	recommendation	the process of being developed and approved. However, the Aftercare Plan still needs to be developed by Contractor and approved by TANAP. It is recommended that this is developed and submitted for approval in a timely fashion in accordance with the biorestoration/reforestation schedule.	In progress for reforestation & after care monitoring planning act. Biorestoration was completed, whereas reforestation activities will be completed in LOT-4 by the end of 2019. Aftercare Monitoring Plan of LOT-4 will be submitted by PCC within November 2019.	TANAP to approve the LOT4 Aftercare Monitoring Plan for implementation.	LOT4 Aftercare Plan approved and in effect.
6.7	OHL and anode bedlines recommendation:	The ESIA on OHLS and Anode Bed-lines has been updated to include impacts on bird species and Çinar has been contracted to undertake bird monitoring	When post-construction bird monitoring study (autumn 2019) is completed, necessity of additional monitoring and	Open TANAP to make decision based on Cinar's 2019 bird monitoring findings.	Open TANAP to make decision based on ENVY's 2020 monitoring findings.

Ref.	Performance Requirement	Actions Required	TANAP Response (November 2019)	Status (November 2019)	Status (November 2020)
		at areas where impacts are likely to occur. It is recommended that OHL mitigations and additional monitoring be implemented based on the findings of Çinar's bird monitoring report.	OHL mitigation measures will then be defined.	See 1.5	See 1.5

3. Findings and Observations

The intention of this Monitoring Report is to document the findings and observations resulting from the virtual site visit from 19-23 October 2020 as they were noted during the various presentations. 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.

It is important to note that the robustness of the compliance levels below are commensurate type of assessment undertaken (remote, risk based sample)

Table 3 - Project Compliance with the Applicable Standards

Topic Heading	Compliance Criteria
Compliance with Local Legislation	FC (where sampled)
Status of ESAP	N/A
Environmental and Social Assessment	FC
Environmental and Social Policy	FC
Environmental and Social Management System	FC
Organisational Capacity and Commitment	FC
Project Monitoring and Reporting	FC
Assessment and management of Change	FC
Labour and Working Conditions	
Human Resource Policies and Working Relationships	FC
Protecting the workforce	FC
OHS	FC (subject to verification in the field)
Retrenchment	FC
Grievance mechanism	FC
Security Personnel Requirements	Not Sampled
Resource Efficiency and Pollution Prevention	
Resource Efficiency	Not Sampled
Pollution Prevention and Control	FC (subject to verification in the field)
Greenhouse Gases	FC
Hazardous Substances and Materials	Not Sampled
Community Health Safety and Security	
Infrastructure, Building, and Equipment Design and Safety	Not Sampled
Hazardous Materials Safety	Not Sampled
Traffic Safety	FC
Exposure to Disease	Not Sampled
Natural Hazards	Not Sampled
Emergency Management	FC (subject to verification in the field)

Land Acquisition, Involuntary Resettlement and Economic	
Consultation	FC
Compensation	FC
Grievance	FC
Resettlement and Livelihoods Planning and Implementation	FC
Monitoring	FC
Biodiversity	
Assessment and Identification of Impacts	PC
Biodiversity Management Planning	FC
Implementation of Mitigations	Not Sampled
Conservation of Biodiversity	PC
Restoration and Rehabilitation	FC
Monitoring	FC
Cultural Heritage	
Assessment	Not Sampled
Consultation	Not Sampled
Disclosure and Stakeholder Engagement	
Stakeholder Engagement Planning	FC
Grievance management	FC
Information Disclosure	FC

3.1 Compliance with Local Legislation

3.1.1 Permits

Each of the Stations (MS1, CS1, CS5/MS2, MS4 and MCC) require an Environmental Permit for operation. During the audit, the final pending permit for CS1 was granted. All stations are therefore now permitted for a period of 5 years from the date the permit was granted (ranging from 2024 to 2025).

3.2 Environmental and Social Assessment

3.2.1 Environmental and Social Policy

Not sampled as part of this remote, risk based assessment.

3.2.2 Environmental and Social Management System

All relevant environmental Plans and Procedures for the Operations phase have been developed by TANAP (including Pollution Prevention, Environmental Monitoring and Waste Management Plans). Please see Table 1 of this Report for recommended revisions to the Environmental Monitoring Plan.

For the operations phase, TANAP has developed social management and monitoring plans. The Social Action Plan for Operations and Social Monitoring Plan for Operations are now in place, guiding external and internal communications, engagement with stakeholders, monitoring on engagement, grievances, community safety, community and workforce training, labour rights and working conditions, and performance management of contractors. These plans require an annual review and update, if needed. Additionally, the RAP Monitoring Plan remains in place until successful completion of the RAP End-Term Impact Evaluation (see also §3.6).

3.2.3 Organisational Capacity and Commitment

3.2.3.1 Environment

The Environmental Department (along with the QA/QC, H&S, Social Impact and Investment Programme Departments) at TANAP Head Office is overseen by the QHSSE Director. The Environment Manager based in Ankara directly reports to the QHSSE Director and there are three Environmental Engineers and one Archaeologist, also based in Ankara, who report to the Environment Manager. In addition, there are 6 QHSE Specialists based at the various operational Stations (CS1/MS1, CS3, MCC, CS5/MS2 and MS3&MS4), who whilst reporting administratively to the site managers, functionally report to the QA/QC, H&S and Environment Managers. Furthermore, within the Projects and Modifications Department, one individual is responsible for rectification and maintenance works, and acts as an environmental specialist who can resolve issues on site. Both the QHSE Director and Environment Manager have been retained as the Project has transitioned from the Construction to the Operations Phase. This has ensured the transfer of important Project knowledge and experience.

The QHSE Engineers based at the stations are responsible for the effective implementation of all relevant QHSE policies and procedures, managing HSE risks, and undertaking regular inspections and audits of HSE performance and recording any non-conformances. This includes overseeing any environmental monitoring activities at the stations. During the previous site visit, the IESC raised a concern regarding whether the appointed QHSE Engineers would have the range of competencies needed for such a multidisciplinary role. TANAP has provided the job specification for a QHSE Engineer as part of this remote audit, and this outlines that the essential qualifications are:

- Bachelors' degree in Engineering or equivalent
- 3 years minimum experience in QHSE Management in pipeline/AGI construction and/or operations.

With additional, preferable qualifications stated as:

- Incident Investigation Training

- Environmental Officer Certificate from Ministry of Environment and Urbanization
- ISO9001/ISO14001/ISO45001 Lead Auditor Certificate
- NEBOSH General Certificate in HS Management
- Experience in natural gas/crude oil pipeline operations.

The IESC is satisfied that the required qualifications for the QHSE Engineers are appropriate and should enable TANAP to employ suitably experienced individuals in these roles.

The IESC also raised a concern during the previous site visit that the proposed training matrix for QHSE Engineers did not contain sufficient detail to provide evidence that the QHSE Engineers will have the breadth of training required for their roles. It was recommended that a tailored training program was developed to ensure that the Operational QHSE Engineers have adequate background understanding of all the topics they are expected to oversee. The Environment Training Matrix includes mandatory training on Environmental Management Systems, waste management, pollution prevention, environmental permits and monitoring and environmental reporting (amongst other topics). It is also recommended that training is undertaken on ISO 14001 awareness and environmental sustainability (amongst other topics). The range of mandatory training required is considered to be appropriate and broad enough to capture all the key areas of environmental management that will form the primary focus of the QHSE Engineers' role. The IESC was also provided with records to demonstrate attendance of the 6 QHSE Engineers at training courses during 2020 for the topics of COVID-19, Environmental Management, Environmental Permits, WWTPs and Waste Management. It is therefore considered that the appointed QHSE Engineers should be suitably qualified for the environmental element of their role and they have received/will receive sufficient training in that respect with regard to Project Operations.

3.2.3.2 OHS

The QHSSE department structure is noted in Figure 3.1 below.

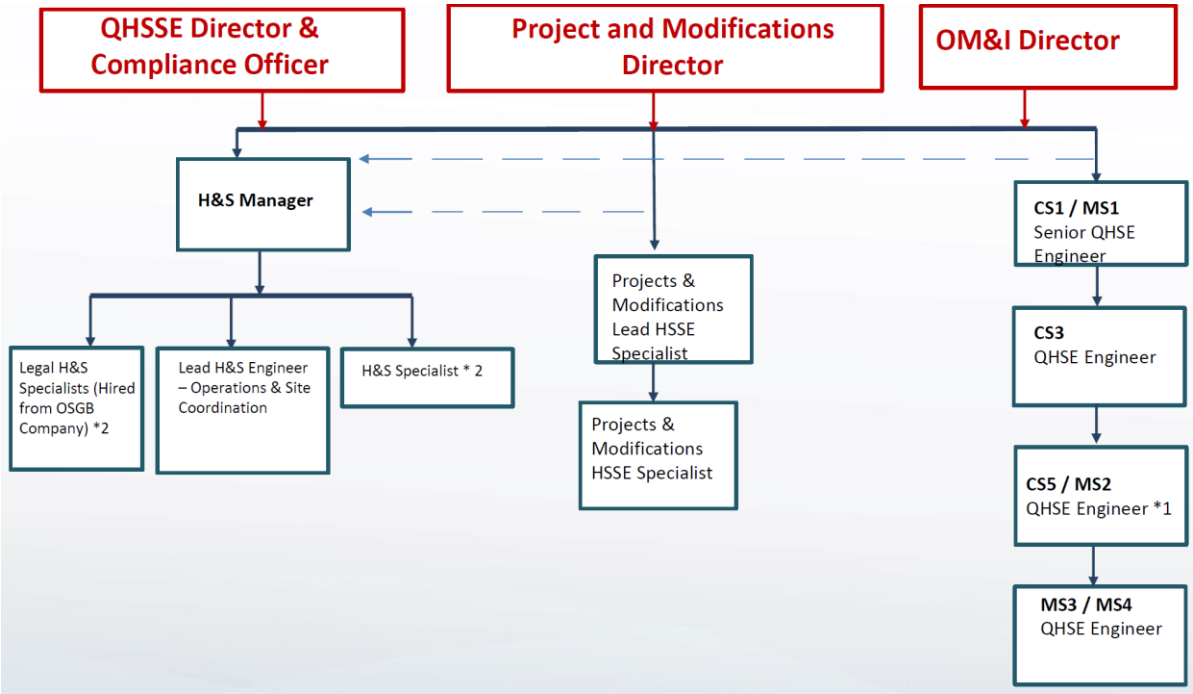

Figure 3.1 QHSSE structure

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, in November 2019 HQ QHSE teams and QHSE engineers attended a workshop to improve awareness and capability of the QHSE engineers.

Training is scheduled for incident investigation & root cause analysis.

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.

3.2.4 Project Monitoring and Reporting

3.2.4.1 Environmental Monitoring and Reporting

Provisional Acceptance (PA) (following agreement from TANAP that all of the outstanding construction Punchlist Items are closed, and all land exit protocols have been signed) was achieved for Lots 1-3 in 2019, and for Lot 4 as of 16 July 2020. The EPC Contractors for the relevant Lots will remain liable for any Defects identified within their warranty period, which will be for 3 years duration from Mechanical Completion or 2 years from PA, whichever comes first.

As well as Lots 1-4, PA has also now been achieved for stations and telecoms and for the off-shore section of the pipeline. As such, construction is now 100% complete and all elements of the Project have been handed over to the TANAP Operations Team, including monitoring and reporting.

TANAP has developed an Operations Environmental Monitoring Plan (TNP-PLN-ENV-GEN-008) that is applicable to all Project activities during the Operations Phase. The framework of environmental monitoring and reporting requirements during Operations is summarised in Table 5 within that Plan, as shown in Figure 3.2 below. TPMC is Third Party Monitoring Company (i.e. ENVY).

Monitoring / Verification Activity	Reporting Format	Frequency
Internal Monitoring / Verification		
HSE Site Inspections	Checklists	Weekly
Internal Audits/Inspections	Audit Reports	As required
CEMS	Verification Report	Annually
GHG Monitoring	Monitoring Report	Annually
External Monitoring / Verification		
IESC Missions	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 3.2 Operations Phase Environmental Monitoring and Reporting Requirements

This Table and the Monitoring Plan, however, do not include geo-hazard monitoring that is undertaken by the external contractor Temelsu as required by TANAP. ***It is therefore recommended that the Plan is updated to incorporate on-going geo-hazard monitoring under the Physical Monitoring section.***

In accordance with the Plan, any non-conformances identified through either internal or external verification will be tracked via an Action Tracking System (which will record all non-conformances, corrective actions, responsible parties and close out dates). The IESC requested the details of any environmental non-conformances captured in the Action Tracking System over the past 6 months and was informed that no non-conformances were reported. The Plan 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. During the audit, TANAP explained non-conformances as being related to environmental performance in terms of meeting the threshold limits for emissions. ***It is recommended that TANAP revises the Environmental Monitoring Plan to incorporate a clear definition of what a non-conformance does and does not relate to.***

3.2.4.2 Internal Monitoring

TANAP are required to develop and implement a program of internal audits to ensure that Operations are compliant with all legal requirements and Project commitments. These should be undertaken at least annually. All internal auditing activities were suspended at the peak of the pandemic, in accordance with Presidential Circular No. 2020/3. Therefore, the Ankara Environmental Department was not able to undertake planned compliance reviews. Some audits recommenced during the summer but only site personnel attended, with Ankara conducting an on-line audit. This has included an audit of the TANAP Material and Warehouse Management System in September 2020, incorporating the warehouse and storage areas at CS3 and CS5. The purpose of the audit was to verify that the proper controls are in place to ensure that the standards and requirements specified in the relevant TANAP Documents are being met and to identify any areas for improvement.

Additionally an audit was undertaken by the TANAP QHSE Team of the Contractor Derinsu to assess their readiness to meet QHSE requirements for off shore inspection services. This was undertaken aboard the Contractor's vessel at Biga Port.

3.2.4.3 RoW Patrolling Inspections

TANAP has developed and implemented a Standard Operation Procedure for RoW Patrolling (TNP-PCD-OPR-GEN-153-P3-1). In this Procedure, RoW patrolling is defined as the, "*visual inspection of the pipeline corridor to check 3rd party interferences, surface conditions, erosion, construction activity and leaks or monitor and report of the condition of the pipeline ROW and surrounding environment*". The patrolling must be performed throughout the entire pipeline by 7 Patrol Teams (PT) under the responsibility of four dedicated zones that come under the Area Maintenance Centers (CS1/MS1, CS3/AMC, CS5/MS2 and MS3/MS4).

TANAP has contracted the co-ordination and organisation of the RoW patrolling to Botaş. However, the RoW PTs are employed by Fernas as a sub-contractor to Botaş. As such, Botaş has also developed a RoW Patrolling Procedure that mirrors the requirements of the TANAP Procedure. According to this Procedure, during the summer patrolling is continuous. Each PT comprises 4 Technicians and one Team Leader. The team is divided into 2 pairs and a driver. The driver will drop each pair at the end of the planned daily patrolling route and they then all walk back to meet at the mid-point. This allows each PT pair to cover 10-15km on a typical day. During the winter, patrolling does not have to be continuous and will be performed dependent of the terrain and weather conditions.

The planned patrolling schedule for 2020 is included as Figure 3.3.

Patrolling Schedule(Planned)														
	Team 1	Team 1	Team 2	Team 2	Team 3	Team 3	Team 4	Team 4	Team 5	Team 5	Team 6	Team 6	Team 7	Team 7
Days	Start KP	Finish KP	Start KP	Finish KP	Start KP	Finish KP	Start KP	Finish KP	Start KP	Finish KP	Start KP	Finish KP	Start KP	Finish KP
1	0	10	220	232	484	496	748	760	1012	1027	1340	1351	1582	1592.5
2	10	20	232	244	496	508	760	772	1027	1042	1351	1362	1592.5	1603
3	20	30	244	256	508	520	772	784	1042	1057	1362	1373	1603	1613.5
4	30	40	256	268	520	532	784	796	1057	1072	1373	1384	1613.5	1624
5	40	50	268	280	532	544	796	808	1072	1087	1384	1395	1624	1634.5
6	50	60	280	292	544	556	808	820	1087	1102	1395	1406	1634.5	1645
7	60	70	292	304	556	568	820	832	1102	1117	1406	1417	1645	1655.5
8	70	80	304	316	568	580	832	844	1117	1132	1417	1428	1655.5	1666
9	80	90	316	328	580	592	844	856	1132	1147	1428	1439	1666	1676.5
10	90	100	328	340	592	604	856	868	1147	1162	1439	1450	1676.5	1687
11	100	110	340	352	604	616	868	880	1162	1177	1450	1461	1687	1697.5
12	110	120	352	364	616	628	880	892	1177	1192	1461	1472	1697.5	1708
13	120	130	364	376	628	640	892	904	1192	1207	1472	1483	1708	1718.5
14	130	140	376	388	640	652	904	916	1207	1222	1483	1494	1718.5	1729
15	140	150	388	400	652	664	916	928	1222	1237	1494	1505	1729	1739.5
16	150	160	400	412	664	676	928	940	1237	1252	1505	1516	1739.5	1750
17	160	170	412	424	676	688	940	952	1252	1267	1516	1527	1750	1760.5
18	170	180	424	436	688	700	952	964	1267	1282	1527	1538	1760.5	1771
19	180	190	436	448	700	712	964	976	1282	1297	1538	1549	1771	1781.5
20	190	200	448	460	712	724	976	988	1297	1312	1549	1560	1781.5	1792
21	200	210	460	472	724	736	988	1000	1312	1327	1560	1571	1792	1802.5
22	210	220	472	484	736	748	1000	1012	1327	1340	1571	1582	1802.5	1815

Figure 3.3 2020 planned patrolling schedule

The IESC was informed that there were no restrictions or changes to the schedule due to the COVID-19 pandemic.

The PTs are required to monitor and report on a range of issues including (but not limited to):

- Land contour changes (e.g. landslides)
- Erosion and the integrity of erosion control structures
- Subsidence
- The condition of rip rap
- River course changes and/or pollution of rivers
- Excess waste material
- Damaged or missing line markers
- Third party activity on/in the vicinity of the RoW.

The Botaş Procedure outlines the necessary training for the RoW Contractor, which incorporates risk assessment, RoW patrolling and geo-hazard activities training. The Integrity Management Department of TANAP has confirmed that, whilst it is not within their official scope of work, Temelsu will be providing specific training to the PTs on geo-hazard monitoring, although this has not yet taken place. The TANAP Geo-hazard Engineer and HSSE Teams have provided training to the PTs on 22 March 2019 at Head Office in Ankara, the Minutes of which have been provided for review. The training appeared to give a comprehensive overview of TANAP's requirements and incorporated H&S risks and control measures (e.g. PPE) that must be taken (especially in relation to red zones), security considerations, social relations Policy and requirements. There was a session on geo-hazards that outlined what the PTs are expected to provide observations on, and from the TANAP Senior Environmental Engineer on general TANAP environmental requirements and how the PTs must perform all their work in a manner that is fully compliant with TANAP's Environmental Policy, ESMS, E&S Management Plans and Procedures.

The patrol teams are required to complete a 'TNP-OPR-FRM-015 Daily ROW Patrolling and Monitoring Report' following each day's activities. The findings are categorised according to codes that indicate the type of finding (e.g. 101 - FOC cable exposed, 108 - pipe exposed, 201 - medium erosion, 211 – biorestoration unsuccessful, 301 – light level erosion, 302 - puddle on the pipeline) and whether the finding is a High, Medium or Low priority, depending on the level of risk to the integrity of the pipeline. Examples of the Daily Reports were provided to the IESC. Whilst the majority of the findings were a range of 'medium' priority issues, there were a number of 'high' priority findings, all of which were Category 112, or '3rd party work on the pipeline, wire fence, masonry, house construction.' An example of a Category 112 finding is shown in Figure 3.4

Photos Of Activities / Aktivite Fotoğrafları

AREA/ KP	NEAREST CROS.	REPORTED BY	DATE	DESCRIPTION	PRIORITY	CATEGORY	PHOTOS		
0319+400		TEAM-2	7.10.2020	Boru hattı üzerinde 3. tarafların çalışması, tel çit, duvar örümü, ev yapımı.	HIGH	112	DSC01933		Önceki bulgu devam ediyor

Figure 3.4 Example of a high priority finding from the RoW PT

The TANAP Standard Operation Procedure provides instructions on the actions to be taken in the event of a third party infringement on the RoW being identified by the PT. In the case of any activity (except acceptable agricultural practices) within 8m either side of the pipeline or civil/construction activity within 50m either side of the pipeline, the activity must be stopped and the Permits Department are required to issue a formal notification to the third party. The IESC requested copies of any formal notifications that have been issued by the Permits Department and was provided with 3 (in Turkish only). From the photographs, it appears one relates to the use of part of the RoW as an access road, one relates to the digging of trenches for the installation of a pipe (possibly for irrigation) and one relates to the excavation of a drainage channel in agricultural land. The notifications to the third party introduce the Project, outline the establishment of the different pipeline protection zones and explain that TANAP could make a claim for compensation for any damages caused within those zones. The notifications state that a written application for the work must be issued to TANAP and that the work must be undertaken under the supervision of a TANAP official. From the evidence provided it appears that the PTs are effectively identifying third party infringements and that appropriate action is then being taken in accordance with the relevant internal Procedures. TANAP undertakes periodic consultation meetings with land owners/users (as well as local government authorities, municipalities etc.) where land use restrictions and community safety are addressed and information on the Operations Phase of the Project is provided. Such meetings will be on-going since the users and ownership status of the directly affected land parcels will constantly change over time. However, the observed prevalence of such infringements suggests that TANAP may need to conduct additional, focused consultation with current landowners/ land users to ensure they are aware of all restrictions and the application process for any work on the RoW.

The TANAP Standard Operation Procedure states that the PTs should undertake detailed river crossing assessments at a minimum frequency of twice a year (once at the end of winter, and once in the autumn) to identify and report any potential changes in the course of the river before they happen. However, the IESC has been informed that TANAP has decided to incorporate this detailed river crossing engineering assessment into the scope of work of the Geo-hazard Contractor (to be undertaken annually). The PTs continue to perform river crossing monitoring as part of their routine patrolling activities and the information/photographs gathered are passed to the Geo-hazard Contractor to help inform their assessment. TANAP are planning to revise the Standard Operating Procedure to reflect this.

3.2.4.4 Contractor Monitoring

TANAP explained that the Operations teams are now working with the EPC Contractors to close any outstanding warranty defects, via a defects claim process. The significant defects identified to date were stated to have been mainly closed with the remainder being actively worked on. Any defects that are identified beyond PA should be tracked through the ‘Defects Register’, which is managed by the TANAP Integrity Department in coordination with the Construction Department and updated on a weekly basis.

Excerpts from the Defects Register were provided to the IESC for review as part of this remote audit. It was explained that all defects have a registration date and are allocated a priority (high, medium or low) depending on the risk to the integrity of the pipeline. The lists provided also identified how/by whom the defect had been detected (RoW PT, reported by Temelsu, internal walkdown etc.) and the relevant Lot and location. An initial evaluation of all defects is undertaken by a Technical SPA from the OTS Department of the potential defect to determine whether or not it is within the Contractor's scope as a warranty defect. If it is determined to be the Contractors' liability, it is issued to the Construction Department for transfer to the relevant Contractor to be rectified. If not, the repair will be undertaken by TANAP's Operations & Maintenance Department or Project and Modifications Department, and a service order is issued to the relevant Operation Phase Contractor accordingly. TANAP explained that prior to closing any warranty defects, the Operations Team conducts a walkdown to confirm that the defect has been adequately repaired. It was not possible during a remote audit to verify that this process has been effectively implemented. This will be a focus of the next physical site visit.

The Contractor for Lot 4 (Punj Lloyd – Limak – Kalyon Joint Venture / PLK JV) is still within their Warranty Period and as such are required to produce quarterly Aftercare and Monitoring Reports reflecting the requirements of the Lot 4 Aftercare Monitoring Plan that has been agreed with TANAP. The Aftercare and Monitoring Report for Lot 4 for the period April – June 2020 was provided to the IESC for review. Whilst it is clear that PLK JV are fulfilling their requirements in terms of both aftercare monitoring and reporting, the IESC noted a number of inconsistencies between the Report and the excerpts provided from the Defects Register. Specifically, the Report identifies defects with slope breakers at KPs 1373+202, 1532+042, 1532+203, 1543+564, 1551+507, 1565+215, 1568+250 and 1691+679. However, none of these are listed as individual open (or closed) defects in the lists provided by TANAP for Lot 4. The defects list provided does include a generic entry (ID: 110216) that states, "Slope Breakers durability to be reviewed during AfterCare Monitoring and damaged ones should be rectified. All details to be recorded into AfterCare Monitoring Reports including photographic evidences. Also, this report shall include the slope breakers in PLK-DVR-GEN-PL4-269", however, without each defect being captured individually within the Register, it was not clear how TANAP will ensure that all repairs are effectively tracked to completion and documented within the Register. TANAP has subsequently informed the IESC that the above slope breaker defects are being transferred onto the Defects Register. It should be noted that the Defects register is intended to capture defects that are under the scope of the relevant Construction Contractor (until the end of the warranty period). If they are not considered to be under that scope, TANAP will take any necessary actions internally to rectify the problem. Patrolling and Geohazard services are in place to monitor and effectively track repairs to completion on the ROW corridor by the TANAP Integrity Management Department.

It should be noted that if the findings reported in the Aftercare and Monitoring Reports are associated with third party interference, they will not be included in the Defects Register as the Contractors will not be liable for any repairs. These are passed onto the TANAP Integrity Management Department for further investigation and assessment.

The IESC is concerned that the volume of different reports that are being produced as a result of the wide range of external monitoring activities being undertaken, is leading to gaps in the registration and therefore tracking of all open defects. During the initial Operations period TANAP will need to continue to work closely with the Contractors to ensure that all defects are being identified, accurately reported and adequately closed out. This is especially important in Lots 1 (Contractor Fernas), 2 (Contractor SYA) and 3 (Contractor Tekfen) where Contractor monitoring is also on-going, as the warranty period is due to end Q4 2020.

3.2.4.5 Third Party Monitoring Company (TPMC)

During the previous site visit, the IESC was informed that third party environmental monitoring during the Operations Phase (that was undertaken during the Construction phase by Çinar) will be undertaken on a monthly basis by ENVY, to inform TANAP of its ongoing environmental performance and compliance with the Turkish regulatory framework, also taking IFI requirements into consideration. The Çinar E&S Reports that were produced up to October 2019, reported on a range of physical environment performance indicators, such as surface water, air quality, noise/vibration, waste and wastewater, hazardous materials (amongst others). Whilst it is recognised that these indicators were especially relevant due to the potential impacts of on-going construction activities, some are still considered to be relevant during the Operations Phase. Specifically the compressor and metering stations will still be producing waste, the compressor stations and other AGIs will emit emissions that could affect air quality, and those AGIs with on-site waste water treatment plants (e.g. MS2/CS5) will still be producing wastewater. The latest ENVY Monthly Reports for August and September 2020 have been provided for review. The August Report presents waste water discharge quality data against Project standards, Turkish regulatory limit values, EC Council Directive 91/271/EEC values and IFC EHS Guideline values. The September Report presents potable water quality data against Turkish regulatory limit values and WHO guideline values. The data is only presented in tables, however, and there is no commentary on TANAP's overall performance or whether there are any non-conformances. It is stated in both reports that air emissions monitoring has not commenced as TANAP has not yet requested that this activity is started. The IESC was informed that due to a recent change in regulations, the Ministry of Environment and Urbanisation (MoEU) must designate a third party company to undertake air emissions monitoring against legislative requirements. As such, starting from 2020, air quality monitoring has been conducted through the MoEU system and not by ENVY, as this would duplicate the legal monitoring being undertaken and therefore be unnecessary. Neither Report covers waste/hazardous waste as during the

Operations Phase, TANAP is conducting monitoring relating to waste generation and management internally (it should be noted that there is also a legal requirement for third party monitoring of waste water discharges, however, as the frequency for this is lower than TANAP's ESIA commitments, TANAP are also conducting their own monitoring). ***It is recommended that TANAP requests that ENVY restructures these Monthly Reports so that the bulk of the data is presented in an Appendix and a summary of the results and TANAP's performance against the relevant limit values is given in the main body of the Report. It is also recommended that the Reports include an explanation of why ENVY will not be conducting air emissions monitoring as per the recent change in regulations.***

Physical monitoring undertaken by ENVY is predominantly reported in a separate, dedicated Report. The latest version for the '2019 Period' (dated 21 November 2019) is concerned with Physical Monitoring undertaken during August and September 2019. This covers the areas disturbed by the Project other than Critical Habitat (i.e. slopes, stockyards, BVS, access roads, fly camps, campsites and storage areas). Although no clear purpose of the monitoring is outlined within the Report, the monitoring included determining whether reinstatement has been successful. With regard to the RoW, the report focuses on 8 slopes across all 4 Lots, although no explanation is given as to why these slopes in particular have been chosen and it is not clear which Lot each slope is located within.

The Report identifies low level erosion on the RoW at Slope 8, medium level erosion on the RoW at Slopes 1, 5 and 6, and high level erosion on the RoW at Slopes 3, 4 and 7. The different 'levels' of erosion are not defined. As a result of the assessment, priority actions are determined and colour coded according to priority levels in an Appendix to the Report. Slopes 1 and 3 were coloured for the 2019 monitoring as 'needing action', which doesn't correlate clearly with the level of erosion observed. All the other slopes were coloured as 'not needing action'. It is not clear how the findings of this Report in terms of erosion on slopes are taken forward by TANAP and this will be a focus of the next site visit.

These issues don't appear to have been added to the Defects list. It is assumed that any level of erosion on slopes across the entire RoW would be detected by both the RoW PTs, the Contractors (during the warranty period) and the geo-hazard monitoring consultant. It may therefore be beneficial for TANAP to consider the scope of work of ENVY and whether or not physical monitoring by the TPMC in terms of reinstatement and soil erosion is really necessary, and what value this element of ENVY's monitoring activities adds to the Project.

3.2.4.6 Geo-hazard Monitoring

Geo-hazard monitoring services are undertaken by the Contractor Temelsu, who have been involved with the TANAP Project from the outset in relation to the investigation and classification of high risk

areas for geo-hazards; to inform the Project design. The determination of Operational geo-hazard monitoring areas was therefore based fundamentally on the Project alignment sheets and previously identified high risk areas but if further sites are identified e.g. by the RoW PTs, they can be added to the list of locations for Temelsu to survey.

The scope of Temelsu's services includes landslide surveys, karst surveys, land and slope erosion surveys, river crossing surveys, soil subsidence surveys, the identification of newly developed geo-hazard risk areas. Although optional in terms of their scope of services, Temelsu are also due to provide training to the RoW PTs (so that they are aware of what to look for in terms of geo-hazards). The existing contract with Temelsu also allows for the commissioning of independent surveys by external Subject Matter Experts (SMEs) from Universities and other professional institutions. A 2019 Landslide Survey was commissioned by such an SME and it is planned that this survey will be repeated each year by different SMEs as landslides pose the highest geo-hazard risk for TANAP. TANAP may additionally commission extra surveys for any type of geo-hazard should an emerging situation warrant it.

Temelsu prepare annual monitoring reports following their on-site surveys. Following review by TANAP's Geo-hazard Engineer, any identified warranty defects that are considered to be the responsibility of the Construction Contractor are passed to the Construction Department. If additional modifications are required in any given area, the Management of Change process will be initiated and additional design drawings prepared as necessary. If further monitoring is required, a risk based inspection plan will be prepared and implemented.

On the TAP Project a suitably experienced and qualified geo-hazards expert (who has also been involved in the investigation and classification of geo-hazard risks from the outset) has been retained by the Project at least for the first few years during the transition to Operations, as an external geo-hazards SME. His role is to periodically review conditions in the field with regard to geo-hazards and soil erosion; to provide an additional level of oversight and verify the findings of the RoW PTs. This gives the Shareholders a greater level confidence about the conditions on the ground. TANAP has retained an individual in the post of Lead Integrity Engineer – Geo-hazards, who was involved with the investigation and classification of geo-hazard risks on the Project from the outset. TANAP has also engaged Temelsu to provide additional oversight and verification of the findings of the TPMC and RoW PTs with regard to geo-hazards. The IESC does not consider it necessary for an additional, external geo-hazard SME to be engaged but TANAP could consider this if it was felt to be necessary at any point in time to satisfy the Shareholders.

Detailed assessments of the condition of river crossings (at locations where TANAP have identified the need) have been performed by Temelsu at a distance of 100m both upstream and downstream of the

crossing point. TANAP has provided examples of these river crossing assessments across Lots 1, 2, 3 and 4.

In a number of the examples, Temelsu has identified issues (such as erosion) and allocated each one a risk level and risk class/rating, the definitions of which, as provided to the IESC upon request, are given in Figure 3.5 (given in brackets). For example, at RVX4-0943 (Low, 4B) the level of the installed rip rap is higher than it should be (according to the design drawings) and could result in future scouring of the river bed. At both RVX2-0025 (Low, 4C) and RVX3B-0168 (Low, 3C) there is bank erosion due to undercutting. However, in all three cases, the only remedial actions recommended are continued monitoring by the RoW patrol team and every 3-5 years by a subject matter expert. In only one example provided are specific remedial actions recommended to rectify the identified problems. At RVX8-5010 (Low, 3B) the riprap was not considered to be effective and the level of the riverbed was higher than the design drawings. Therefore the remedial actions were to rectify the installation of the rip rap and decrease the elevation of the river bed to achieve the design level. The IESC has been informed that despite having the same reported risk level (low) but a lower risk rating than others, this was the only issue that required specific remedial action (not considered to be a major action) because the ratings applied are not directly related to the appropriate action that should be taken. ***It is recommended that the risk levels and ratings applied to issues at river crossings following assessment are reviewed to ensure that they are appropriate in terms of how they are applied with regard to the mitigation actions that should be taken.***

The IESC has subsequently been informed that the Temelsu river crossing assessments are evaluated by the TANAP Project and Modifications Directorate and the Operations Technical Support Group Management and that 9 defects were recently identified (not from the assessment shared with the IESC for the remote audit) as warranty defects following such an assessment; and instructions issued to the relevant Construction Contractor.

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4. Defining the Project Risk Criteria

The following is the criteria for Risk Rating.

Figure 2 TANAP Risk Matrix

Prob-ability Levels	Impact Levels: 1 Low	2 Medium	3 High	4 Major	5 Massive	6 Catastrophic
F Frequent	1F	2F	3F	4F	5F	6F
E Often	1E	2E	3E	4E	5E	6E
D Probable	1D	2D	3D	4D	5D	6D
C Seldom	1C	2C	3C	4C	5C	6C
B Unlikely	1B	2B	3B	4B	5B	6B
A Rare	1A	2A	3A	4A	5A	6A

Table 1 Impact Rating Scale

Project Objective	1 Low	2 Medium	3 High	4 Major	5 Massive	6 Catastrophic
	Definitions of Impact Levels					
Human	Single person of workforce injured, but able to continue work (e.g. first aid) or single person of public with minor reversible short term health effect	Single person of workforce 5 days off work or single person of public with moderate irreversible health effect	Up to 2 fatalities or up to 5 persons hospitalized or with severe irreversible health effect	Up to 10 fatalities or up to 20 persons hospitalized or with severe irreversible health effect	Up to 20 fatalities or up to 40 persons hospitalized or with severe irreversible health effect	More than 20 fatalities or more than 40 persons hospitalized or with severe irreversible health effect
Environment	Low environmental impact which is localized and easy to remedy	Medium environmental impact within Project area of influence	High environmental impact beyond the Project Area of influence	Major environmental impact beyond the Project Area of influence which is hard to remedy	Massive damage to the environment which cannot be contained and which interrupts the pipeline development progress	Catastrophic damage to the environment which cannot be contained and which stops the pipeline development progress

Figure 3.5 Risk Rating and Risk Level classifications

The definitions of risk assessment criteria shown in Figure 3.5 above and included within the TANAP Risk Management Procedure TNP-PCD-PRC-GEN-008 are being revised to better reflect the scope and requirements of the Project's Operational Phase. Current operational risk assessments are being carried

out as per the updated risk ratings and impact scales. The updated TANAP Risk Management Procedure will be issued in November 2020. The new versions that will be in the procedure are shown in Figure 3.6 below:

		INCREASING IMPACT →					
		1 Low	2 Medium	3 High	4 Major	5 Massive	6 Catastrophic
INCREASING PROBABILITY ↑	F Frequent 6	1F	2F	3F	4F	5F	6F
	E Often 5	1E	2E	3E	4E	5E High Risk	6E
	D Probable 4	1D	2D	3D	4D Medium Risk	5D	6D
	C Seldom 3	1C	2C	3C Low Risk	4C	5C	6C
	B Unlikely 2	1B Notable Risk	2B	3B	4B	5B	6B
	A Rare 1	1A	2A	3A	4A	5A	6A

Categories	Definitions of Impact Levels					
	1 Low	2 Medium	3 High	4 Major	5 Massive	6 Catastrophic
Health and Safety	Single or multiple person of workforce injured but able to continue work (e.g. MTCs (Medical Treatment Case), RWCs (Restricted Work Case), First aid, noticiable irritations) or single or multiple person of public with minor reversible short term health effect.	Single or multiple person of either workforce or person of public with minor or moderate irreversible health effect (e.g. LTIs (Lost Time Incident) and partial disabilities.	One (1) to Three (3) fatalities and/or One (1) to Ten (10) persons hospitilized or with severe irreversible health effect (e.g. Permanent disabilities).	Four (4) to Ten (10) fatalities and/or Eleven (11) to Twenty (20) persons hospitilized or with severe irreversible health effect.	Eleven (11) to Twenty (20) fatalities and/or Twenty-one (21) to Thirty (30) persons hospitilized or with severe irreversible health effect.	More than Twenty (20) fatalities or more than Thirty (30) persons hospitilized or with severe irreversible health effect.
Environmental	*Localised damage to a non-sensitive environment that can be remedied in a period of days or weeks.	*Localized damage to a non-sensitive environment that can be remedied in a period of months or localized damage to a CH (also includes Freshwater Critical areas) that can be remedied in a period of days or weeks.	Extensive damage to a non-sensitive environment that can be remedied in a period of approx. one (1) year or localized damage to a sensitive that can be remedied in a period of months.	Extensive damage to a non-sensitive environment that can only be remedied to an "adequate" condition in a period of more than one (1) and up to five (5) years. Extensive damage to a sensitive environment that can be remedied in a period of approx. one (1) year.	Extensive damage to a non-sensitive environment that remains in an "inadeqate" condition for more than five (5) years. Extensive damage to a sensitive environment that can only be remedied to an "adequate" condition in a period of more than one (1) and up to five (5) years.	Widespread damage to a non-sensitive environment that remains in an "inadeqaute" condition for more than five (5) years. Extensive or Widespread damage to a sensitive environment that remains in an "inadeqaute" condition for more than five (5) years.

Figure 3.6: Revised Risk Ratings and Risk Level Classifications

3.2.4.7 Integrity Mapping Platform

TANAP has been utilising an Integrity Mapping Platform (IMP) since January 2020 (the software for which replaced the previous GIS desktop application). The web platform is fully integrated so that it is possible to access all available spatial information relating to any KP/AGI along the pipeline by opening

the relevant GIS layer (although each layer has a specific level of authorisation due to data protection requirements).

The various GIS data layers are shown in Figure 3.7 below.

Layers	Layers descripton
Pipetype WT distribition	This layer indicates where the types of pipe used along the pipeline. Includes pipe wall thickness and diameter information.
Welding/DOC	This layer indicates the pipe cover depth value at the girth welds.
Pipeline Markers	This layer indicates location of pipe signages, its IP and chainage information.
Route alignment	This layer Includes alignment informations where the pipeline passed.
Route chainage (asbuilt)	This layer contains pipeline kilometer length information calculated after construction.
Route chainage (design)	This layer contains pipeline kilometer length information calculated in design phase.
Permanent Easement Corridor	This layer Includes 16 m width corridor
Temporary Easement Corridor	This layer Includes permitted RoW corridor used during construction
AGI LAC Border	This layer contains acquired areas of compressor, PIG and metering stations.
BVS LAC Border	This layer contains acquired areas block valve stations.
ILI results	This layer Includes pipeline Inline inspection results
DCVG Survey	This layer Includes Direct Current Voltage Gradient survey data for pipe coating defects
Cathodic Protection	This layer Includes cathodic protection test posts locations
Risk based inspection results	This layer Includes the risk-based assessment and inspection results
Site inpsection	This layer contains the findings of the inspections on the pipeline
Geohazard Layers	This layer contains the findings of the geohazard inspections on the pipeline
Geohazard inspecitons	This layer contains the findings of the geohazard inspections on the pipeline
ROW Patrolling site inspections	This layer contains inspeciton on site whice submitted by ROW Patrolling contractor
AMC Person site inspecitions	This layer contains inspeciton on site whice submitted by AMC Integrity technicihan
Crossings	This layer contains crossing point locations such as river, road and so on along the pipeline.
Additional Protections	This layer Includes applied pipe protection for important crossings
Fiber optic conduit	This layer Includes fiber optic conduit location and cover depth.
Fiber chambers	This layer Includes fiber optic manhole location.
Third_Party_UnderGroundInstallation	This layer Includes underground third party lines such as POX,PLX, TEX etc.
Third_Party_AboveGroundInstallation	This layer Includes aboveground third party lines such as OHX, TEX etc.
ESIA Corridor 500m	This layer Includes Environmental impact assessment corridor
Natural Areas	which is published by minister
Protected Areas	which is published by minister
Terresterial Critical Habitats,Freshwater_Critical_Habitats	TANAP findings during the desing phase
SCC_Species,KBA_IBA_PA,Steppes,EUNIS Zones, Habitat_Control_Point	BOMP GIS Data- Detailed target species distribution maps
CINAR Archaeological Sites CHA	Archaeological areas where obtained from minister
CINAR Archaeological Sites BAS	Archaeological areas where obtained from minister
TANAP Archaeological Sites	Archaeological areas where founded on site during design and construction phase
Orthophoto (design)	This layer contains the orthophotos produced during the design phase
Orthophoto (asbuilt)	This layer contains the orthophotos produced after construction
Security Data	This layer contains security events and its history
PMS Event	This layer contains PMS alarms event register
Land violation	This layer contains Land violation register
ROW Contact	This layer contains to row Authority infrormation where is near Tanap Route
Hospital	This layer Includes hospital information which is closed Tanap Route
Local Authority	This layer Includes Environmental impact assessment corridor
Permit Request	Live Authority data base which is approving permitng to TANAP side
Authority Engineering	Freezed Authority data base which is used desing period
Cadastral Borders	Cadastral Borders data base which is used desing period

Figure 3.7 Data layers incorporated into the IMP

The platform therefore acts as the central repository for the findings of all the environmental monitoring outlined above, thereby ensuring continuity and consistency of understanding for the Project, and providing an easy reference point for all Departments.

The platform includes both before and after construction orthophotos, to help understand, for example, if river crossings have been accurately reinstated. The current resolution of the orthophoto depends upon the quality of the orthophotos used. However, an aerial survey of the entire pipeline is planned for 2021 (which is currently going through the bidding process) to give an additional level of assurance for RoW

monitoring activities. This will be conducted by plane and data from this will be integrated with the IMP to ensure that TANAP has an up to date overview of the condition of the RoW. The orthophotos following the aerial survey are expected to be 10 cm resolution. TANAP has acquired all the necessary licenses from ESRI for mobile application, therefore data can be uploaded to the platform directly from site in real time.

This is considered to be an excellent tool to help TANAP effectively collate, analyse, manage and share environmental information and support the Environment Department in ensuring the identification and repair of defects.

3.2.5 Assessment and Management of Change

A Management of Change (MoC) Request was raised on 1st August 2019 by the Operation Support Team Leader in relation to the Exhaust Stacks for the Water Bath Heaters (process gas heaters) at MS2. These were understood to be not compliant with the requirements of relevant Environmental Regulations and CIN-REP-ENV-GEN-031. As such, they needed to be extended from appr. 6m to appr. 11m. In addition, two emissions monitoring stations were required to be installed on each of the extended stacks. The scope of the work to be completed has been developed for the Modification Contractor and the proposed design was not considered to introduce new risks. This MoC was due to be closed in Q1 2020 and it was explained that this was now completed. In addition, a further two MoC processes were initiated since the previous site visit in November 2019. The first was in relation to the installation of monitoring ports on the CS5 offtake, CS5 main and CS1 water bath heater stacks. This has now been completed. The second relates to the construction of central waste accumulation areas, chemical storage areas and pressurized cylinder storage areas at MS1, CS1, CS4, MS3 and MS4. It was explained that only temporary areas have been designated for these purposes on site at the stations, which are not considered by TANAP to be adequate. Therefore there is a need for the detailed design and construction of fully compliant waste accumulation and storage, and hazardous materials storage areas. This work is budgeted for completion in 2021. The MoC process is on-going.

3.3 Labour and Working Conditions

3.3.1 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.

The operational phase workforce has been planned by this Directorate and is reviewed periodically according to needs and budget. Further HR functions are supported, including company culture and engagement, recruitment, organisational structure, compensation and benefits, training, payroll, monitoring and discipline.

Recruitment for the operational organisation was supported through definition of core competencies and relevant skills and experience with the relevant operational departments, in line with the Recruitment Procedure. Orientation/induction is a key requirement for all new employees.

The TANAP Integrated PM Team (IPMT) is currently comprised of 367 people; 358 of which are TANAP direct employees. An additional 30 persons remain engaged by the EPCM (Worley Parsons). In total, 84% of the IPMT is male, 16% female. Currently, 96% of the workforce is Turkish and 4% are Azerbaijani.

3.3.2 Protecting the workforce

The Human Resources Management Plan was issued in March 2020 and provides for the objectives, strategies and activities of the Human Resources Directorate to ensure competent workforce are in place to manage operations in a smooth and effective manner. It applies to Operations, Technical and Support departments. This Plan reflects the Recruitment Procedure [TNP-PCD-HRM-GEN-006], which clearly states that TANAP “adopts no tolerance principle towards dissent, discrimination (sexual, religious, language, race, etc.), nepotism, or political favoritism during any phases of the recruitment processes, beginning from screening to hiring.” Further, the Plan reflects 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.

While the operational organisation has been established, there remain a small number of contractors on site to complete construction; punch list items are being carried out until the end of the respective warranty periods in each Lot (Lots 1,2 and 3 will complete in 12/2020, and Lot4 in 12/2021). During this period, Practical Solutions continues to be engaged to conduct periodic audits on TANAP’s compliance with Turkish legal requirements on labour. The most recent audit was conducted in June 2020; of 102 findings, one is ongoing (relating to contractor, Punj Lloyd, for which supporting documentation is required to confirm a late payment to a subcontractor) and 101 have been closed. From the end of 2020, Practical Solutions will continue to monitor integrated services contractors (security and cleaning).

3.3.3 OHS

3.3.3.1 General

General safety lagging statistics and leading safety indicators were very good with incident statistics being of industry best standards. Incident investigations were well conducted with good learnings.

The IESC took a focused, risk-based approach to the remote assessment of OHS, and the focus was on (but not limited to):

- COVID management
- Operational OHS competence
- Handover from EPC to TANAP Operations
- Operations risk management, including Standard Operating Procedures (SOPs) and Permit to Work (PTW) management
- Incident management
- Plant maintenance and inspections for GCS with a focus on gas detectors and emergency & fire evacuation systems
- Crises and Emergency Management with a focus on emergency exercises conducted

3.3.3.2 COVID-19 Management

TANAP utilize a COVID-19 risk assessment register which highlights the scenarios and related risks, consequences, controls, residual risk, risk treatment plan and accountable people for each risk. This is very well thought out document and a good approach to COVID management in ever-changing circumstances.

TANAP have Covid-19 specific Emergency Plans and have conducted COVID-19 related emergency scenarios. All plans and site specific risk registers are available in Turkish and available to employees.

TANAP utilise a staged approach to the pandemic based on infections and stage of the virus in Turkey. TANAP is moving from the initial “Isolation period” to the “New Normal” period, but stages will move backwards and forwards dependent upon the COVID-19 risks in Turkey. This approach is commended.

3.3.3.3 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 note in Section 3.3.2 OHS (Operational Capacity and Commitment) of this report.

3.3.3.4 Operational Readiness, Operational risk management (& Handover from EPC to Operations)

The OHS risk based sample of systems had a focus on the move to operations, and included (but is not limited to):

- Commissioning handover documents
- Operations risk assessment
- SOPs for BVS and CS
- Operations Training Plan
- PTW procedure and details of any breaches
- Plant maintenance schedule for fixed fire system and gas detectors

Risk based systems in place for the management of safety and risk during handover, commissioning and the start of operations were also of a very high standard.

For Operations, all the required systems requested were available and all the systems sampled were of a very high standard.

There was one minor PTW near miss that was very well identified and reported and suitably investigated

3.3.3.5 Incident reporting and management

The incident register was reviewed as were both the medical treatment injuries. Both investigations were well completed with good learning outcomes and neither of the incidents were high risk. There were no High risk near misses or LTIs for the period under review and as noted in this report the lagging safety statistics for this project are excellent and industry best practice.

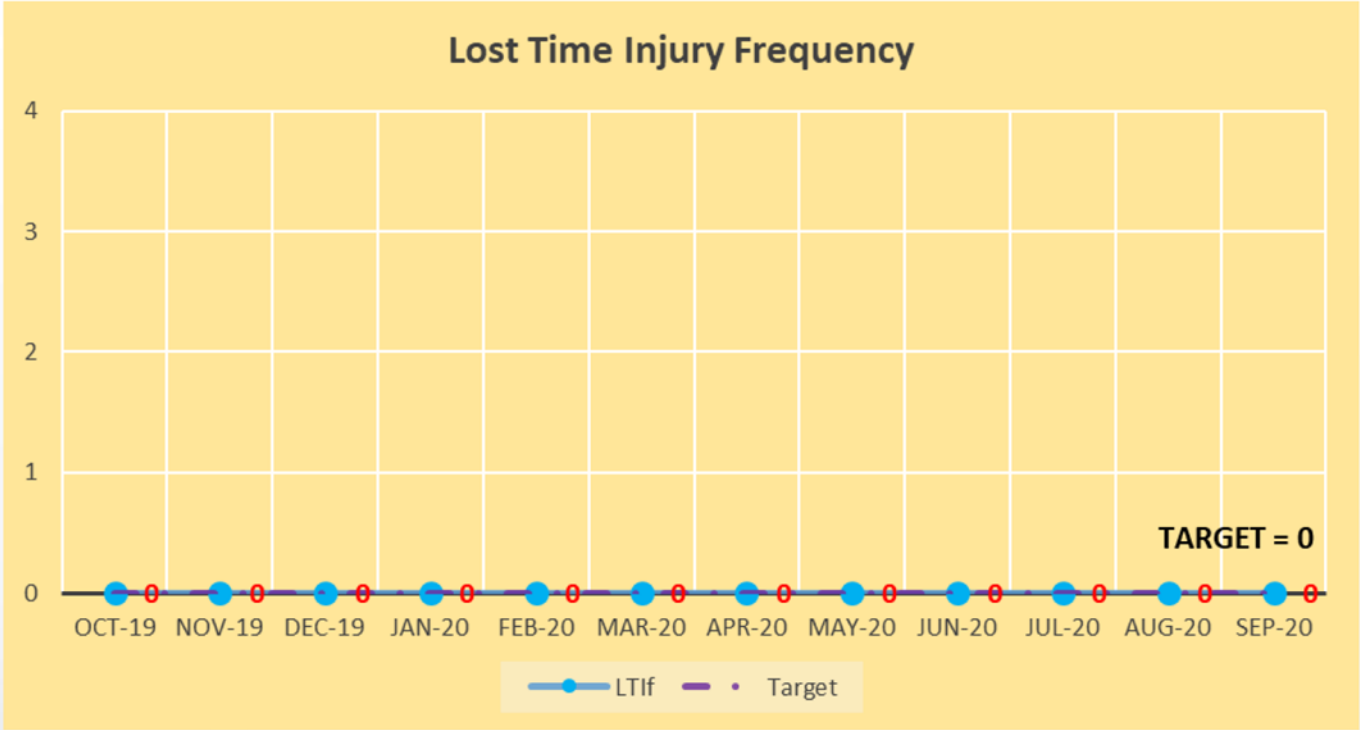

Figure 3.8 Lost Time Injury Frequency

Figure 3.9 Total Recordable Incident Rate

3.3.3.6 Crises and Emergency Management

There was an improvement in the scheduling and conducting of emergency exercises which is commended. Seven (7) emergency response exercise reports were sampled and these represented a good variety of scenarios and locations (CS1 CoVID-19; CS5 Traffic Incident; MS3 Fire alarm activation; CS5 Fire scenario; MCC Fire response scenario; MS4 Covid-19.

3.3.4 Retrenchment

One more demobilisation activity is planned for TANAP. In the interim, restrictions from the Government of Turkey due to Covid-19 impacts means that there are restrictions on being able to terminate positions. The Government's measures will be in place until at least 17 November. Those who will be later demobilised are being utilised to assist in closing out punch list items or using their available leave.

3.3.5 Grievance mechanism

The Grievance Management Procedure [TNP-PCD-SOC-GEN-001-P3-2] sets out the process and responsibilities for handling and monitoring grievances from stakeholders (internal and external). It was last updated on 28.8.2018; according to the document's review schedule, it requires annual review, thus should be reviewed to reflect the operational organisation and its functions. For example, status and necessity of the Appeals Committee structure should be reconsidered with the completion of construction Lots at the conclusion of the warranty period; and human resources are recommended to have a role in resolution of grievances raised by employees. It is noted that the review is scheduled for November 2020.

There were no open grievances reported from contractor workers or employees at the time of the virtual visit.

3.3.6 Security Personnel Requirements

This aspect was not covered during the remote visit.

3.4 Resource Efficiency and Pollution Prevention

3.4.1 Resource Efficiency

This topic was not specifically addressed as part of the remote audit.

3.4.2 Pollution Prevention & Control

The Environmental Monitoring Plan 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 processes outlined within the Plan. Each Operational site is required to register performance against the KPIs and the relevant QHSE Engineers must report this to the TANAP Environmental Manager. TANAP presented environmental KPIs for the past six months (Q2 and Q3) during the remote audit. These did not include results for all of the KPIs listed in Annex II of the Environmental Monitoring Plan, however, they do demonstrate that emissions performance targets are being met and that there have been no environmental incidents. Additionally, TANAP outlined during the audit that the Eskişehir Provincial Directorate of the Ministry of Environment and Urbanisation conducted an unplanned audit of CS5/MS 2 on 21 August 2020 and all the findings were reported to be compliant with the relevant legal requirements.

3.4.2.1 Soil Erosion

During the previous site visit (November 2019), the IESC observed that at KP 1369 hydroseeding had been completed 1 month prior to the site visit (in October) and as such, there was very limited revegetation to provide soil stability. Whilst the hydroseeding had been undertaken in accordance with the requirements of the Method Statement for Biorestoration Works in Lot 4, there was a concern that the limited vegetation cover would only provide minimal protection against soil erosion during the winter period.

The Aftercare and Monitoring Report for Lot 4 for the period April – June 2020 includes an update on the condition of this slope following monitoring by the Contractor (PLK JV); who are required to monitor biorestoration areas, major river crossings, critical habitats and reforestation areas at 3 month intervals during the warranty period. According to this report ‘no damage’ to the slope breakers on this slope has been detected and 90-100% biorestoration cover has been achieved.This Aftercare and Monitoring Report contains more recent photographs of this site. The comparison between November 2019 and June 20202 can be seen in Figure 3.10 below.

Figure 3.10 KP 1369 comparison between November 2019 and June 2020

It appears from the photograph that there has not been any significant soil erosion over the winter 2019/2020 period and there were no reports of any defects at this site.

A further concern was raised following the November 2019 site visit relating to jute matting that had been laid down 4 months prior to the visit on the slopes, as an erosion control measure, on either side of the Gönen River crossing, at KP 1661. According to the Method Statement for Biorestoration Works in Lot 4 (PLK-MST-ENV-PLK-028-P4-0) the jute matting should have been overlapped away from the prevailing wind and water flow direction. However, the rolls of matting had been applied vertically (fastened to the slope surface using wooden stakes) and there was significant gapping observed between the rolls of jute matting. The concern was that rainfall over the winter period would result in soil erosion where there were such large gaps between the jute matting and minimal revegetation, especially on the left bank of the River. The PLK JV Aftercare and Monitoring Report for Lot 4 also reports that ‘no damage’ to the slope breakers on this slope has been detected and 90-100% biorestoration cover has been achieved. Figure 3.11 below (showing a comparison between November 2019 and June 2020) was considered by the IESC to show possible signs of rilling on the slope face and some of the slope breakers, especially towards the foot of the slope, where the slope breakers appear to have possibly suffered some level of damage.

Figure 3.11 Slope at KP 1661 – possible signs of erosion

However, the IESC acknowledges that the photograph in the Aftercare and Monitoring Report is not sufficiently detailed to be able to verify with any level of certainty the extent of soil erosion on this slope and slope breakers. TANAP has subsequently provided some more detailed photographs of this slope, for example in Figure 3.12. These imply that there has not been any significant soil erosion or damage to the slope breakers. However, these do not enable a complete overview of the condition of this slope to be obtained and a physical site visit would be needed to confirm whether or not the findings of PLK JV's monitoring are accurate.

Figure 3.12 Detailed photographs of slope breaker at KP 1661

Upon review of the PLK JV Aftercare and Monitoring Report, the IESC would argue that some of the photographs included showed defects, which are not highlighted as 'damage' by the Contractor. For example, at KP 1504+910 (Figure 3.13) where the stones comprising the slope breakers appear to be migrating down the slope. Also, at KP 1435+340 (Figure 3.14) the natural contours of the surrounding landscape appear to be directing run-off onto the RoW towards the foot of the slope, and without adequate measures in place to redirect the drainage or dissipate the energy in the water and minimise erosion, a number of erosion gullies appear to be forming as a result.

Figure 3.13 KP 1504+910

Figure 3.14 KP 1435+340

KP 1435+000 is listed within the open Defects Register for Lot 4 as medium priority civil works to be done to rectify slope breakers and jute matts following a PA walkdown. However, this does not match the KP of the slope monitored by the Contractor (where no defects were detected). KP 1504+910 is also not listed in the Defects Register. It is assumed that any inaccuracies in the Contractors Report would be picked up following review by the Construction Department, or in the field by the RoW PTs; so that all defects are ultimately identified and registered. However, a physical site visit will be needed to verify if there are in fact defects at these (or other) slopes that have been missed and whether the multi-layered soil erosion monitoring approach that TANAP has implemented is fully effective. This will be a focus of the next site physical visit.

In relation to the other slopes that were monitored, PLK JV reported that in many cases, damage to slope breakers was caused by the Ministry of Forestry during afforestation activities. When questioned

on whether any focused consultation was being undertaken by TANAP with the Ministry of Forestry to try and avoid this, it was explained that the Contractors will still bear the responsibility of repairing the slope breakers until the warranty period expires, so no consultation was being undertaken. Beyond this, the Permits Department will be responsible for liaising with third parties. ***The IESC, however, recommends that a targeted consultation exercise with the Ministry of Forestry is conducted before the PLK JV warranty period expires to increase awareness of the damage being caused with the aim of working to find alternative methods for the forestry activities that will not result in damage to slope breakers and the need for repairs.***

An example of a slope erosion survey at KP 0616+210 that was completed by Temelsu in December 2019 was also provided to the IESC for review. The slopes that are targeted for monitoring by this Contractor are determined by the level of geo-hazard risk. Figure 3.15 shows that the survey identified subsidence along the RoW, deep gullies on the surface of the slope, water accumulating in the pipeline trench and intense sheet erosion on the slope. It was recommended that remedial action was taken to reinstate the slope, slope breakers and headponds in accordance with the design drawings, construct a head ditch to divert water from the slope and install a proper drainage line in the pipeline trench.

Figure 3.15 Photographs from the Temelsu survey of slope erosion at KP 0616+210

Subsequent to the remote audit, TANAP provided additional information to demonstrate that this defect was confirmed as closed by the RoW PT and Operations Management and Integrity Team in 2019. Photographic evidence has been provided, as illustrated in Figure 3.16 below.

Figure 3.16 Photograph of the repaired slope KP 0616+21This survey demonstrates the need for on-going monitoring of geo-hazards and in particular erosion on steep slopes that have been identified as being of concern from a geo-hazard perspective, so that problems can be detected in adequate time for repairs to be undertaken before the integrity of the pipeline is compromised. This particular defect was not listed in the excerpt from the defects register initially provided for the remote audit as this defect was opened in September 2019 and closed one month later; and only 'open' defects in Lots 1&2 were provided to the IESC. The excerpt from the Defects Register provided does contain a number of open slope soil erosion entries (and others e.g. issues at river crossings) that have been detected by Temelsu.

It is clear that soil erosion is an on-going (and well anticipated) issue for the Project. It is therefore essential that TANAP maintains the program of continuous, regular, risk based monitoring by suitably qualified contractors throughout the remaining Construction Contractor warranty periods and beyond. The potential gaps identified above will need to be verified during a physical site visit, however, TANAP should continue to comprehensively review all monitoring reports submitted for any potential inaccuracies and ensure that the Defects Register correctly reflects the situation on the ground. The IMP should help to enable the effective cross checking of findings from the range of monitoring activities that are on-going to ensure consistency and a common understanding.

3.4.3 Greenhouse Gases

Çınar has been appointed by TANAP to compile GHG emissions for the Operations phase of the Project. A methodology (ref. CIN-REP-ENV-GEN-027) for the calculation of the Project's annual operational GHG emissions has been developed by Çinar; based upon the 'International Financial Institution

Framework for a Harmonised Approach to Greenhouse Gas Accounting (November 2015)'. The first annual operational Scope 1 and 2 emissions were estimated using this methodology and reported in March 2019, for the Project's operations in 2018, being 19,027 t CO_2 eq.

The most recent 'Annual GHG Emissions Report for Operations' available for review is the 2019 Çinar Report that was issued on 24 March 2020. Scope 1 and 2 emissions have been estimated using the accounting methodologies outlined in the document referenced above. Scope 3 emissions are excluded from the calculations.

In 2019, AGIs with operational stationary combustion sources that contributed to Scope 1 (direct) GHG emissions included MS1, MS2, MS3 and MS4, CS1, CS5a and CS5. The only mobile combustion sources contributing to Scope 1 emissions were low emission fleet vehicles. Vented emissions from process and maintenance venting were included, for example, in 2019 TANAP performed a range of venting operations due to relief tests, valve tests, inspection vents and equipment change. The contribution of fugitive emissions to Scope 1 were assumed to be from CH_4 leaks from pipelines and system components such as compressor seals and piping connectors.

The amount of electricity consumed by each of the operating facilities was used in the calculation of Scope 2 (indirect) emissions.

According to the Çinar Report, the total annual GHG emissions generated by TANAP operations in 2019 were 182,148.31 tCO_2 eq per year. Emissions were predicted to significantly increase in 2019 due to the start of operation of all the components of Phase 0 facilities and the startup of Phase 1 facilities, and this was proven to be the case.

3.4.4 Wastes

TANAP has developed an Operations Phase Waste Management Plan (TNP-PLN-ENV-GEN-007), which outlines waste management strategies to be implemented for solid and liquid wastes and both non-hazardous and hazardous waste, including that waste activities will be performed in accordance with the waste management hierarchy. This Plan will apply to all operational staff, Contractors and subcontractors active at compressor and metering stations, block valve stations and other AGIs.

Without undertaking a physical site visit, the IESC is unable to verify whether or not the waste collection, handling and storage requirements outlined within the Waste Management Plan are being met.

3.4.5 Hazardous Substances and Materials

Hazardous materials management is covered by TANAP's Pollution Prevention Plan for Operations. This outlines the measures that must be implemented to ensure the safe storage and transport of hazardous materials in order to prevent pollution and contamination to environmental receptors. The measures listed are considered to represent best practice with regard to pollution prevention. However, as above, without undertaking a physical site visit, the IESC is unable to verify whether or not the hazardous materials storage and transport requirements outlined within the Pollution Prevention Plan are being met.

3.5 Community Health Safety and Security

3.5.1 Infrastructure, Building, and Equipment Design and Safety

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

3.5.2 Hazardous Materials Safety

This was extensively assessed during the last site visit and was not sampled on this remote assessment.

3.5.3 Traffic Safety

The IESC notes that some additional works have been required to provide for road safety. During operations, it has been found that additional land has been needed to rehabilitate access roads for some block value stations. TANAP has found that, due to some dangers on access roads, extension of some corners is required for their safe operations, for example, the access road to an AGI in Ardahan is being widened, which will increase separation between public road users and those turning into the AGI.

3.5.4 Exposure to Disease

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

3.5.5 Natural Hazards

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

3.5.6 Emergency Management

The Community-based Emergency Management Plan had been prepared at the previous audit; role out commitments included information disclosure on the MP with affected communities. Due to Covid-19

restrictions, completion of these disclosure meetings has been put on hold, as this topic is not suitable for phone- or videocall-based information dissemination with communities. An internal workshop has been held with the MP's authors, the Solo Institute, on roles and responsibilities of the social impact team in emergency management.

During the Operations phase, third party monitoring will be carried out by ENVY to monitor implementation of community health and safety mitigation measures.

Please refer to Section 3.4.3.6 Crises and Emergency Management. There was an improvement in the scheduling and conducting of emergency exercises which is commended. Seven (7) emergency response exercise reports were sampled and these represented a good variety of scenarios and locations (CS1 CoVID-19; CS5 Traffic Incident; MS3 Fire alarm activation; CS5 Fire scenario; MCC Fire response scenario; MS4 Covid-19).

3.6 Land Acquisition, Involuntary Resettlement and Economic Displacement

3.6.1 Consultation

Consultation on land acquisition and livelihood restoration remains an ongoing activity for TANAP. Engagement and consultation that is now being finalised in anticipation of the upcoming RAP End-Term Impact Evaluation (RETIE) (RAP Completion Audit) include: RAP Fund meetings; Land Use awareness meetings (including refresher information/sensitisation about the grievance mechanism); and the LRP Monitoring and Final Informative meetings.

TANAP stated that impact monitoring and final informative meetings are being held (see also §3.6.5), and that these opportunities for direct engagement are being used to inform PAPs that the resettlement program is drawing to a close. It is difficult to assess an appropriate exit strategy without directly interviewing PAPs; the RETIE team should be requested to provide specific feedback on this following their site visits in the spring. It is understood that the RETIE scope includes provision of a conclusion as to whether monitoring can be concluded, and TANAP anticipates that the RETIE team will, through the consultative process of delivering its scope, will include discussion on design of any future monitoring, should this be necessary.

3.6.2 Compensation

All compensation payments have been completed by TANAP. 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. More than 98% of land parcels have been registered to LRE.

3.6.3 Grievance

KPIs for grievances have not been met in Q2 and Q3 2020, however this is not unexpected due to the impacts of Covid-19. Figure 3.17 below reflects that only three quarters of complaints could be closed out during Q2, i.e. at the height of restrictions during the pandemic. However, TANAP has been able to commence addressing and closing these from August onward.

Figure 3.17 Complaints Registered vs Closed 2020

The Appeals Committee process has been effective in facilitating grievance resolution. Of those grievances that have been escalated to the Committee (25 in total), 19 have been closed by mutual agreement (i.e. 75%). TANAP is commended on this outcome. Of the remainder, 2 are still pending, not yet resolved by mutual agreement, and four have been escalated to court.

A specific process has been established for registering, confirming, assessing, actioning and closing reinstatement-specific grievances. All grievances continue to be registered in OSID, the TANAP online database for all stakeholder engagement and grievance management. The construction contractors remain on site until the end of the respective warranty periods, and remain responsible for closing reinstatement-related grievances where there has been no land exit protocol signed. Where the land exit protocol has been signed, TANAP is responsible for addressing the grievance. As at the time of this virtual monitoring visit, the pipeline construction contractor (PCC) was planning for the end of October to complete the Land exit work on the only remaining village where, due to covid-19 restrictions, Land Exit had not been completed. Once this has been completed, then all construction contractor grievances

including reinstatement remain on the Defects Register for their completion prior to the end of the warranty period, and the pipeline construction contractors are not responsible for addressing any new reinstatement-related grievances after land exit process and warranty period are complete. Any new grievances are TANAP's responsibility.

3.6.4 Resettlement and Livelihoods Planning and Implementation

The RAP and associated documents remain in place guiding TANAP's implementation of land acquisition and livelihood restoration. Forthcoming tasks on RAP and LRP for 2020-21 are the final inputs to the program prior to the RETIE. Terms of Reference for the RETIE have been developed and approved by IBRD and EBRD (see also §3.6.5 below). A social assessment of temporarily used/rented lands is underway, due for completion in December 2020, and delivery of the second round of community-based LRAPs is also completed, with monitoring in progress. The RAP Monitoring Plan was updated and disclosed on the TANAP website in November 2020.

The second round of LRAPs was proposed for a particular subset of beneficiaries from the first round of LRAPs. Monitoring data and application of selection criteria had identified those beneficiaries who had demonstrated some successes through the support of the first round of LRAPs or had some difficulties to sustain the effectiveness of the delivered support in the first round. Accordingly, eligibility criteria were: whether there was a risk that the benefit gained through round 1 of LRAPs would be lost, and, whether it was assessed that there was the potential for further improvement or gains. Of 133 beneficiaries in the first round of LRAPs, 16 PAPs were determined eligible for the second round of LRAPs support. Additional payments for the second round of LRAPs were completed in September 2020, and included 163,000 lira (± US$19,000) of animal feed, seeds and fertilizers, agricultural equipment and other items of livelihoods support.

Further, Ardahan was selected for second round support to the community due to its high rural poverty/low capacity and potential for unsustainability of the first round of LRAPs support. Approximately 470,000 lira (±US$55,000) was invested in livelihoods (barn disinfection) and various social support measures (community centre, cemetery wall) and infrastructure rehabilitation (improvement of irrigation channel). An interview with a muhtar of Ikizdere village (neighbouring community of CS1 in Ardahan) during this virtual visit confirmed the process of monitoring and assessment. Further, description and support for both anticipated benefits from cattle health and community infrastructure investments were expressed. The IESC commends the approach taken for the second round of LRAPs.

The External Monitoring Panel made a number of recommendations in their final report, centred on a lack of consolidated/comprehensive data. The Panel recommended that additional analysis be undertaken at the village level on, inter alia, the land parcels for which land-owners refused to sign-off

the land exit; whether commitments are fulfilled on temporary rental lands; grievances that were closed without agreement; and vulnerable people affected by the RoW. TANAP has completed the necessary analysis for these recommended areas of concerns.

TANAP has, since the virtual visit, completed actions to address these recommendations. Firstly, it was identified that no further action was needed to pipeline-focused livelihood assessment. Secondly, reasons for refusal to sign off on Land Exit Protocols were investigated. Three core reasons have been identified, for which actions to resolve are identified as follows:

- Unsatisfactory reinstatement, which is addressed as per the grievance procedure
- Land reuse difficulties due to the slope breaker, which is considered for additional land expropriation (in the area outside the permanent 16m ROW to which the slope breaker extends); and
- Unreasonable additional requests or concerns, which are considered, justified and closed for no further action.

TANAP determined that no action was identified for those who refused to sign off LEPs. Should the RETIE identify further action, these will be addressed as required.

Lastly, a study into Pipeline-affected vulnerable PAPs has been carried out. Final data shows 14 potentially affected vulnerable households, 12 of whom required additional support because of the lack of sufficient information that enables them to access their entitlements (money and/or land title deeds). It was found that one vulnerable person had accessed the money but was now deceased, and 11 were since informed in detail by TANAP about support available to access entitlements. Two could not be reached however TANAP has committed to following up with those households directly.

The ongoing post-construction activities include new acquisitions of land, for example, for drainage, slope breakers, and access roads. Further, TANAP reported that owners of a number of non-viable agricultural and other types of land parcels have also come forward to request that TANAP acquire through expropriation these small land parcels; of 26 cases, 5 were accepted for expropriation against criteria defined by TANAP.

3.6.5 Monitoring

Both internal and external monitoring reports have been completed; the final internal monitoring report (12th – December 2019) has been prepared and external monitoring report (6th – December 2019) has been completed and disclosed on TANAP's website.

In addition to the existing inputs to conduct the RETIE, and other references including past internal and external monitoring reports, guidance, brochures, Plans and reporting on RAP corrective actions, will form inputs for the selected RETIE consultant team. The consultant is tasked with determining the effectiveness of the compensation and livelihood restoration assistance as documented in the suite of RAP documents, and assess whether implementation of RAPs has delivered restoration or improvement of livelihoods, in line with Project commitments. The RETIE must be completed before World Bank loan closure (i.e. 31 July 2021), thus dates are proposed as follows:

- Scoping: desktop reviews, virtual meetings with key internal / partner stakeholders (Nov-20)
- Field study: mixed methods of field/virtual interviewing/qualitative and quantitative surveying, depending on Covid-19 restrictions (Spring-21)
- Reporting: preparation and submission, including a Corrective Action Plan if required (Jun/Jul-21).

The IESC notes that during the RETIE Scoping phase it will be expected to be able to define a sampling approach that will answer ‘satisfaction in completion’ for all stakeholders.

A further activity which has been completed is the follow up monitoring of the campsites in Lots 1, 2 and 3 that were handed back to the relevant authorities. This was a commitment in the Impact assessment and stakeholder engagement report carried out in 2019. Monitoring confirmed that handover processes have been completed for all sites. Most infrastructure has been donated for public use to local authorities in Erzincan and Kars (for example, air conditioners, beds, containers). Transfer of the former Pasinler camp to Erzurum Metropolitan Municipality has been carried out, however its future use as a local meat and herb market have been delayed due to covid-19 restrictions. Negotiated agreements were concluded with landowners of the former Hafik camp in Lot 2; this site is now used as a women’s prison. The former Dogankent camp is now being used for railway construction camp, with rental for private lands now being paid by the railway project’s construction contractor. The former Polatli camp is currently inactive, with a long-term rental contract now in place between AFAD and the landowner.

Lastly, TANAP has revised the RAP Monitoring Plan, to include indicators for livelihood restoration and grievance redress, and to respond to changes in timing of and methods for RAP End-Term Impact Evaluation due to Covid-19.

3.7 Biodiversity

3.7.1 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 was the avoidance of potentially adverse ecological impacts. This has 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 to guide the biodiversity impact avoidance, mitigation, and restoration measures.

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.

3.7.1.1 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's to date progress with the bird monitoring activities as required by the ESIA of OHLS and Anode Bed Lines is satisfactory. So, far TANAP has completed spring and autumn bird monitoring in 2019 and 2020 in high risk areas. Cinar completed the first spring bird monitoring in all areas (i.e. MS4, DSW, DSE, CS7, BVS21, CS1) along the known bird migration routes during the spring migration (April-May

2019) and post-spring migration period (June -July 2019). 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.

Cinar repeated the bird monitoring for autumn 2019 for the same areas identified as high bird risks. The autumn 2019 monitoring found 16 carcasses along the monitoring routes. Most (14 out of 16) of the carcasses were either LC or NT status. On the other hand, two Streptopelia turtur (Turtle dove) (VU on the IUCN List) carcasses found at the DSW and CS7. Cinar stated the possibility of these birds had been killed by illegal hunter as there were no evidence for collision with OHLs for these cases. Out of the 16 carcasses, 11 of them were likely caused by OHLs as reported by Cinar. The number of carcasses was higher in autumn because the population with young individuals was higher than those in spring.

Cinar has concluded, based on the monitoring result, that the OHLs are unlikely to cause electrocution as a result of the OHL's design to prevent electrocution. The collision mortality rate is minor for the OHLs, except the BVS21 OHL due to its location being in the seasonally flooded grassland, which attracts birds. Therefore, additional monitoring studies should be performed at BVS21 in order to better understand the level of risk.

Based on the Cinar's 2019 monitoring results, TANAP continued the bird monitoring in 2020 only at BVS21. The spring 2020 monitoring observed no bird carcasses, and/or bird species that listed as threatened in the Endangered Species List by the IUCN.

The autumn 2020 bird monitoring report was not available during this audit. TANAP to make a decision on additional mitigation and/or monitoring based on the findings of the bird monitoring program.

3.7.1.2 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 identifies potential offsets and additional conservation actions in accordance with good international practice to achieve No Net Loss or Net Gain outcomes relative to the residual affects identified for Natural Habitats, Priority Biodiversity Features (PBF) and Critical Habitats (CH). The strategy defines 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.

Refer to Conservation of Biodiversity section for TANAP's biodiversity offset program status.

3.7.2 Biodiversity Management Planning

The key management documents for biodiversity impact assessment and management during construction included:

- Project ESIA (TNP-REP-ENV-GEN-001)
- Environmental and Social Management Plan (TNP-PLN-ENV-GEN-001)
- Environmental Action Plan (TNP-PLN-ENV-GEN-002)
- Environmental Monitoring Plan (TNP-PLN-ENV-GEN-003)
- Biodiversity Action Plan (CIN-REP-ENV-GEN-017-Rev-P3-11)
- Specification for Reinstatement (WRP-SPC-EGG-PLG-001)
- Biorestoration Monitoring Plan (CIN-PLN-ENV-GEN-014)

TANAP approved contractors' environmental and social management documents to support the biodiversity management requirements during construction. These documents included, but are not limited to, contractors' construction impact management plans, method statement of biorestoration, erosion, reinstatement and landscape plan, special area reinstatement method statements (SARMS), reforestation strategy, and environmental and social monitoring plans.

TANAP's biodiversity impact mitigation measures (i.e. avoid, mitigate and restore) undertaken during the Project construction phase were well implemented. The previous IESC audit and site visits 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 entered into 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 are now shifted to monitoring of biorestoration success, and recovery of the critical habitat triggering species status in critical habitat areas along the pipeline route in near future until the predefined rehabilitation targets met. Development and implementation of long-term biodiversity offset programmes will be the

TANAP's long term commitment to achieve No Net Loss (NNL) or Net Gain (NG) for priority biodiversity features or critical 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)
- Operations Environmental Monitoring Plan (TNP-PLN-GEN-009)

In addition to the above documents by TANAP, each construction contractors developed the following management documents for ecological management and monitoring during the two years of warranty period after the pipeline mechanical completion:

- Erosion, Reinstatement and Landscape Plan
- Specifications for Reinstatement
- Reforestation strategies
- Aftercare and Monitoring plans

The contractors' ecological management documents included the Project's biodiversity management requirements identified by the Project ESIA and BAP for approval by TANAP before implementation.

3.7.2.1 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.

3.7.2.2 Ecological Management Plan

The Ecological Management Plan (TNP-PLN-ENV-GEN-010) 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, with regard to biodiversity, included minimising habitat disturbance, biorestoration activities, biodiversity offsetting, invasive species, pest management, and protecting flora and fauna. The key post-construction biodiversity impact mitigation

measures are maintenance of reinstated areas following post-construction and undertaking biorestoration 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

3.7.2.3 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 at least weekly basis
- Audits
    - Internal audit by qualified and approved personal 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.

In addition to the above monitoring programmes, construction contractors are committed to undertaking two years of monitoring during the warranty period. The contractors' monitoring scope covers the critical habitats, watercourses, bio-restoration areas, slope breakers, overspill areas, bio-restoration sites in undeveloped areas and reforestation areas, invasive species/weed control, fencing/signage, preventing grazing on reinstated areas. Contractors are required to provide information and consult with TANAP for

any issues that require corrective action. The monitoring requirements met the Project's BAP, Ecological Management Plan, and Environmental Monitoring Plans requirements.

The key ESMS documents appear overdue for review and revision. For example, the ESMP was reviewed last in October 2018 and not reviewed since despite its stated annual review for continuous improvement, and document control requirements. The Ecological Management Plan and Environmental Monitoring Plan last revisions were in July 2018. The biodiversity related management requirements in the Ecological Management Plan, and Environmental Monitoring Plans were adopted from the ESIA and BAP which were developed much earlier and reviewed in and 2017, respectively.

TANAP's activities progressed significantly including the transitioning period to operation from construction stage since the inception of these documents. It is important for any management system documents to get reviewed and revised for continuous improvement and lessons learned from monitoring, and there would be no exception for TANAP doing that especially as it now fully transitioned to operation phase to identify actions for correction or maximise opportunities or adjust the management controls to suit the changing conditions. From communications with the TANAP environmental team, it is understood TANAP undertakes the revisions from time to time in the past and also planning to review the ESMS documents within 2020. This is not a compliance issue for now, but IESC recommends TANAP to document all reviews of the plans and keep the document revision controls updated for tracking.

The Operations Ecological Management Plan, and the Operations Environmental Monitoring Plans have no specific KPIs for biodiversity offset performance. The Operations Environmental Monitoring Plan includes several KPIs (i.e. vegetation cover, erosion control, fauna mortality from Project operation, incident/damage to critical habitats) for ecological management, but success of the biodiversity offsetting measures are not included in any of the above ESMS documents. IESC recommends updating the management plans to include relevant KPIs when the Biodiversity Offset Management Plan, and Site Specific Management Plans are completed.

3.7.3 Implementation of Mitigations

The key biodiversity impact mitigation measures during the Operations Phase include:

- Completion of reinstatement;
- Biorestoration and aftercare
- Invasive species management; and

- Biodiversity offsetting.

Due to the remote nature of this audit, assessment of mitigation measures' implementation and their success was not possible for objective evaluation. Review findings of the construction contractors and third party monitoring reports are discussed in the respective sections

3.7.4 Restoration and Rehabilitation

All biorestoration and reforestation activities have been completed along the pipeline ROW, except the LOT4 reforestation. The LOT4 reforestation is 81% completion. TANAP and the LOT4 contractor PLK engaged with the Ministry of Agriculture and Forestry for reforestation in LOT4. As agreed with the Ministry, all reforestation activities in LOT4 will be undertaken by the Ministry's' subcontractors. The Ministry and its Contractors are fully responsible for all reforestation activities under the LOT4 subcontractors' oversight. The planned completion of the reforestation by January 2020 was delayed due to some environmental conditions early in the year and subsequent travel restrictions due to the COVID19 pandemic. The LOT4 reforestation contractor plans to complete the remaining reforestation within 2020. Any further delay in completing the LOT4 reforestation without acceptable reasons may trigger this requirement become non-compliant.

3.7.5 Monitoring

3.7.5.1 Summary of ecological monitoring during operations

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

The IESC's review findings of the construction contractors after care monitoring, and the ecological monitoring by third party monitoring companies is summarised below.

3.7.5.2 After Care Monitoring for LOT 1

TANAP provided the LOT 1 construction contractor FERNAS's 7th aftercare monitoring report (FRN-REP-ENV-PL1-049-P4-1) covering March, April and May 2020 provided for review for this audit.

FERNAS's personnel conducted the monitoring covering the following areas:

- Project affected areas, such as agricultural lands/flat areas, undeveloped areas, forestry areas and river crossings.

- Special areas, such as side/steep slopes, areas where bio restoration activities were conducted.
- Critical and freshwater critical habitats.
- Offsite project used areas, such as access roads and extra lands.

FERNAS's 7th quarterly monitoring highlights (Biodiversity):

- 59% of the total bio-restored ROW length is covered by the monitoring. The remaining areas were inaccessible due to environmental conditions.
- 94.5% of the bio-restored areas had target vegetation cover (i.e. at least 70% coverage).
- 2 target species were observed in 23 terrestrial critical habitats during the last monitoring. Combined with the previous monitoring results, a total of 27 of the 33 target species have been observed so far.
- 24440 trees, out of the 35766 planted to compensate 35337 trees felled during construction phase, were identified in the 19225 m, out of total 35095 m, of reforestation areas visited along the ROW. The latest monitoring found 3021 dry trees.

The reviewed March-April-May monitoring found a significant number of dead trees (i.e. 3021 dry tree), which were more than the additional number of trees (i.e. 429) planted to compensate the total felled trees. Given that the March-April-May monitoring did not cover all the monitoring areas, the dead trees number could be even higher. As it is understood from the monitoring report, FERNAS planted additional trees to compensate dead trees in reforested areas. For example, the report stated replanting of 3,350 saplings in November 2018 to compensate dead samplings in reforested areas. The reviewed monitoring report also mentioned the revegetation needs for the areas with less than target vegetation coverage in two years' time.

The LOT 1 contractor's two-year warranty period ends by 25th December 2020, indicating some areas may not have achieved the target vegetation cover of 70% by the first year as planned. FERNAS's aftercare monitoring, covering June 2020 afterwards period, reports were not available to review this at time to understand the scale of the dead trees, or areas with less than the target vegetation cover that needs re-seeding, and importantly FERNAS's plan for corrective actions for those issues. Therefore, IESC recommends TANAP to closely monitor the contractor's corrective actions to fulfil the Project commitments for revegetation and reforestation.

3.7.5.3 After Care Monitoring for LOT 2

The LOT 2 contractor Sicim-Yuksel-Akkord JV's after care monitoring report (SYA-MST-ENVIRONMENT-PL2-011-P4-C) covering the January-June 2020 period was provided by TANAP for review. This monitoring scope included areas where biorestoration works were done and terrestrial critical habitat areas.

Sicim-Yuksel-Akkord JV's January to June monitoring report highlights (Biodiversity):

- 452 bio-restored areas visited for slope breakers and vegetation cover monitoring. Out of the 452 areas, 54 areas were not accessible due to environmental conditions.
- 97% (385) of the total (398) inspected areas had 100% vegetation cover recovery. The rest had vegetation cover ranging between 70% and 90%.
- Plant species regrowth met the target 70% at all 26 Terrestrial Critical Habitat sites monitored. The report provided no photos of the Critical Habitat sites visited.
- All of the 303 reforested areas monitored had 70% forest growth success. No photos of the reforestation sites provided in the report.
- Plant development was weak during the monitoring due to weather conditions at high altitudes, and many plants, including trees, have been damaged due to animal activity between KP 378 and KP 410.

The report provided photos of the biorestoration areas visited during the monitoring some of which show excellent vegetation growth along the ROWs. However, some areas shown in the site photos do not seem to have the vegetation growth success as reported in the main report. For example, vegetation coverage conditions for KP 523+757-523-902 (Figure 3.18) and KP818-+742-818+762 (Figure 3.19) appear to be much less than the reported 100% vegetation coverages for these sites.

Figure 3.18 Condition of KP523+757-523+902 site

Figure 3.19 Condition of KP818+742-818+762 site

The objective of biorestoration is to establish sufficient vegetation cover to reduce erosion to meet the Project performance requirement through restoration of the local plant. However, vegetation coverage in some areas appear to be less than the target percentage even after 1.5 years of warranty period, which ends on 12 December 2020. IESC recommends TANAP check with the latest monitoring reports for the LOT 2 contractor to see if their latest monitoring found any improvements in those areas and agree to necessary corrective actions if the situation is not changed. It is also beneficial for TANAP to verify the contractors' report for accuracy and take corrective action on a timely basis.

It was not possible for IESC team to comment on Critical Habitat or Reforested Areas parts of the monitoring report as no photos or adequate descriptions were provided.

3.7.5.4 After Care Monitoring for LOT 3

IESC reviewed the LOT 3 contractor Tekfen Construction's Aftercare monitoring report (TKF-REP-CVL-PL3-007-P4-0) covering December 2019-February 2020 for this audit. Biodiversity scope of the monitoring included success of bio-restoration activities, riparian vegetation condition, restoration progress of critical habitats and species of conservation concern, and success of planted trees on reforestation sites.

3.7.5.5 Monitoring report highlights (Biodiversity):

- 135 biorestoration areas visited for slope breakers and vegetation cover monitoring. The remaining 38 sites were not visited as they excluded from the monitoring due to private ownership.
- All biorestoration areas visited had 80-100% vegetation cover except some areas which have been ploughed fully or partially (11 areas).
- One biorestoration area (KP 1143+646-1143+766) damaged from road construction.
- All of the 86 river crossings monitored are reported to be in good condition with natural riparian vegetation growing, except for some crossings where farmers ploughed the area.
- All five reforestation areas included in the monitoring had 100% tree survival
- Seven of the eight terrestrial Critical Habitat areas monitored reached target levels for vegetation cover and diversity, but the target species richness did not reach in some areas.
- Road works near the Critical Habitat 54 (KP1144+988-1145-800) used the area as topsoil stockpile disturbing the integrity of step habitat.

- A heavy agriculture and grazing pressure resulted in disturbance to natural populations at Critical Habitat 55 (1155+228-1155+398).

- Critical Habitat 57 (KP1229+052-1229+504) is under heavy agricultural and road pressure.

Monitoring site photos included in the report demonstrate some good biorestoration success along the LOT3 ROW. However, as observed for the LOT2 monitoring report discussed above, vegetation cover of some biorestoration areas appear to have less vegetation cover than is reported. Examples of these include the KP901+088-901+115 and KP 997+150- 997+182 biorestoration areas, which are reported to have 100% vegetation cover, but the site photos taken during the monitoring do not seem to agree with that statement (see Figure 3.20, Figure 3.21).

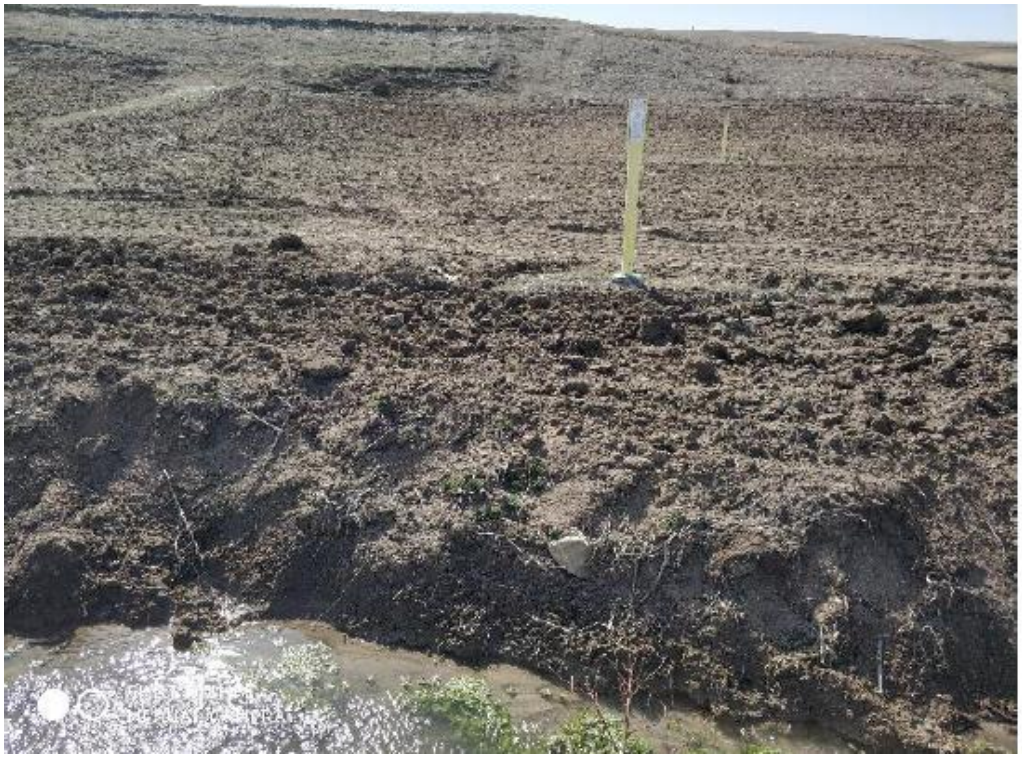

Figure 3.20 Condition of KP901+088-901+115 site

Figure 3.21 Condition of KP997+150- 997+182 site

Above monitoring was conducted during December 2019 – February 2020 period and it is possible that the findings have been changed since. It is IESC's recommendation for TANAP to have some quality checks of the reports for verification and take corrective actions if needed.

3.7.5.6 After Care Monitoring for LOT 4

IESC reviewed the LOT 4 contractor PUNJ LLOYD–LİMAK–KALYON JV's (PLK) Aftercare monitoring report (PLK-REP-ENV-PL4-023-P4-0) covering the April-May-June quarter of 2020. Biodiversity scope of the monitoring included success of biorestoration activities, riparian vegetation conditions, restoration progress of critical habitats and species of conservation concern, and success of planted trees on reforestation sites.

Monitoring report highlights (Biodiversity):

- 345 out of the 360 biorestoration areas visited for slope breakers and vegetation cover monitoring. The remaining 15 areas were inaccessible due to agricultural lands and PLK plans to check them on next monitoring. The monitoring found six areas ploughed by farmers.

- Over 90% of the biorestoration areas, not including the inaccessible and ploughed lands, had vegetation over exceeding the target 70% coverage. About 6% (21 sites) and 2% (7 sites) of the total revegetated areas had 50-70% and 10-50%, respectively, vegetation coverages.

- 33 River Crossings monitoring found no significant issues with the riparian vegetation success and erosion control. One river crossing site (RVX4-075) was inaccessible due to field conditions.

- All of the 10 Terrestrial Critical Habitats (CH58-CH67) monitored had achieved the target vegetation cover. On the other hand, only the CH58 had the target species (i.e. *Thymus leucostomus*) richness as required by the BAP.

- Monitoring of nine Freshwater Critical Habitats (i.e. FCH19-FCH27) found well-established habitats in all sites visited, however, no target species presence was observed during the monitoring.

- 71 areas were visited for reforestation success:

    - All reforested areas (39 areas to date) had 100% saplings survival rate

    - Six areas were not reachable due to environmental conditions

    - Seven areas had been ploughed by farmers and no trees were present

    - Reforestation had not been taken place for 19 areas.

The reviewed Aftercare monitoring report for LOT4 indicated successful bio-restoration in most of the special areas monitored. An example of such successful biorestoration is shown in Figure 3.22 for CH61 area. The Aftercare care monitoring report also mentions the contractors continued monitoring and corrective action commitments for areas that do not meet the reinstatement / biorestoration standards targets.

Figure 3.22 Example of successful rehabilitation at CH61 (KP1437+587-1438+972)

The monitoring did not observe the target SCCs for the critical habitat areas during this monitoring campaign, but the habitat restoration was a success for all critical habitat areas as is reported. The Project ESIA identified impacts to the CH and FCH areas are not significant, thus successful establishment of the habitats is expected to support the target species population for the longer term.

The monitoring report did not provide details of the ploughed lands by farmers, and how many trees were impacted or planned to be planted on those areas. TANAP and the LOT4 construction contractor PLK engaged with the Turkish Ministry of Agriculture and Forestry for reforestation of the LOT4. According to the protocol (#49357563-030.03-E.1230859) made between the Ministry of Agriculture and Forestry, and the contractor, the Ministry is responsible for all reforestation activities, while the PLK supervise the process. IECS recommends TANAP, as a Project owner, to investigate this matter further clarifying the areas ploughed, and if TANAP needs to plant more trees to make up the loss of trees in those areas.

The IESC is satisfied with the current details of the level of aftercare monitoring at LOT 4. The following observations noted from this review in relation to critical habitats monitoring:

- The aftercare monitoring missed the BAP specified monitoring periods for the bird species of concern for CH64, CH65, CH66, and CH67 possibly due to the travel restriction from COVID19, but no explanations provided in the report.

- The report also stated that some target flora species were not observed as the monitoring was conducted out of the flowering period, for example, *Alyssum niveum* at CH60.

- BAP target species for the FCH19 is *Gobio sakaryaensis*, but the LOT4 Aftercare monitoring plan and the reviewed Aftercare monitoring reports used *Gobio obtusirostris* as target SCC.

- The BAP identified *Cobitis fahireae* as SCC for FCH22, but the LOT4 Aftercare monitoring documents used *Oxyneomacheilus simavica* as target species of concern.

Subsequent aftercare monitoring reports for LOT4 were not available during this IESC audit for comparison with the first monitoring findings. IESC recommends TANAP to investigate the above observations and take corrective actions, if needed, for the future monitoring to meet the BAP monitoring requirements. It is also recommended that TANAP and PLK to investigate the ploughed areas impacts on the Project commitments to replant every tree cut during the construction and if the above incidents impact the residual impact estimate for biodiversity offset planning.

3.7.5.7 Ecological Monitoring by Independent Third Party

TANAP has engaged with ENVY for its independent third party ecological monitoring contractor. ENVY monitors 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 10 monitoring reports covering March 2019 to August 2020. ENVY's monitoring reports covered all terrestrial and freshwater critical habitat areas and SCC. Timing and methods of the monitoring meet the BAP requirements. The monitoring also covered general site conditions including vegetation recovery states and any intrusions to the critical habitat areas by third parties, and invasive species growth. The monitoring report shows recovery of the SCC in the critical habitat areas for tracking, however, no definite trends can be concluded for the SCC's recovery from the ENVY's reports at this stage due to the short time series data. Based on ENVY's monitoring and details of the monitoring reports, it is concluded that TANAP meets its biodiversity monitoring commitments for the critical habitat areas and species as required by the BAP.

The following observations have been noted from the biodiversity monitoring reports for TANAP's attention:

There are some potentially conflicting monitoring findings between the contractor's Aftercare Monitoring, and Independent Third Party Monitoring findings. For example, the ENVY's latest flora monitoring (ASE-REP-ENV-GEN-034-P4-C) found zero individuals of *Thymus leucostomus* species on the CH58 ROW (in

the monitoring plots 100^{m2}) during the monitoring in 2020 (one in May, and two in June), except the previously observed 11 individuals of the species off the ROW. On the contrary, the PLK's Aftercare Monitoring Report (PLK-REP-ENV-PL4-023) for the same month (i.e. June 2020) stated very healthy *Thymus leucostomus* population on the CH58 ROW. Same variations can be expected in independent surveys due to differences in plot locations or observer's ability to accurately estimate species population in flora surveys, but the above variance seems too much to expect from the monitoring done at same place in a similar time period. This is just an example of one observation noted by IESC's review of the reports, and thus could be an isolated case. IESC does not provide opinion, in this case, on what might have contributed to such a big variation in these monitoring results but recommends TANAP to cross examine the findings thoroughly, and request the monitoring parties, if needed, to pay an extra attention to those areas and species for their next monitoring.

3.7.6 Conservation of Biodiversity

3.7.6.1 Critical habitats

The Biodiversity Action Plan (BAP) includes a critical habitat assessment. There are 67 Terrestrial and 27 Freshwater Critical Habitat areas 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. As required by the BAP and the Reinstatement specifications all critical habitats, water crossings and areas prone to erosion are needed to be reinstated immediately after installations of the pipelines and monitored quarterly. BAP requirements for critical habitat areas impact mitigation include preconstruction measures, (i.e. seeds collection, plants translocation, time period specified), topsoil stripping and storage, restricted timing for construction activities and reinstatement measures. Pre-construction ecological surveys for each critical areas are also required to support developing the reinstatement requirements (i.e. SARMS) for each critical habitat after construction.

The Independent Third Party Monitoring (ASE-REP-ENV-GEN-034-P4-C) found serious intrusions to the bio-restored critical habitat areas. For example, disruptions to CH1, CH7, CH13 from a nearby excavation works, large vehicles movement in CH3 resulting in disruption of developing plant growth in the entire habitat area, and loss of replanted pines from grass mowing. According to the Operations Environmental Monitoring Plan (TNP-PLN-ENV-GEN-008) any incidents or damages to critical habitat are KPI issue.

After Care Monitoring Report for LOT 3 (TKF-REP-CVL-PL3-007-P4-0) by Tekfen stated significant issues at the CH54, CH55 and CH57 due to activities such as road construction and grazing. These

activities may have been outside of the TANAP's full control when it happened, but it is the IESC expectation that these type of incidents are recorded in the Action Tracking System for investigation, further reference and initiating necessary corrective actions if needed.

From the update from TANAP during the audit, and the reviewed documents, IESC these damages to the critical habitat areas were not discussed and included in the Action Tracking System for TANAP's action, thus it is assessed as non-compliance. IESC recommends TANAP to investigate these incidents in the critical habitat areas and document the actions for next IESC audit for verification.

3.7.6.2 Invasive species

The management of invasive species in the Project RoW has been 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. 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.

ENVY's Physical and Ecological Monitoring in July 2019, August 2019 and August 2020 indicated an extensive growth of invasive species in some of the critical habitat areas. For example, the August 2019 monitoring (ASE-REP-ENV-GEN-019) found invasive species of *Onopordum sp., Centeurea sp., Salvia sp., Verbascum sp. and Polygonum sp*. etc., throughout the monitoring line, potentially limiting the target species recovery at CH15. ENVY's August 2020 Monitoring Report (ASE-REP-ENV-GEN-034-P4-C) again noted an extensive growth of *Cirsium sp., Verbascum sp and Onoropdum sp* on the CH14 and CH15 ROWs. These are just some of the many examples of invasive species growing in the critical habitat areas as detected by the monitoring work.

It is TANAP's responsibility (Section 3.4.8 Ecological Management Plan) to determine the severity of the invasive species threats and take effective mitigation and management measures if needed. From the reviewed documents and TANAP's update to the IESC during this audit it was not clear if TANAP has addressed and documented the issues including in the Action Tracking System. Therefore, it is IESC's conclusion that TANAP does not fully comply with this requirement.

3.7.6.3 Biodiversity Offset Planning and Implementation

The Project's BAP and Biodiversity Offset Strategy (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. The IESC and its biodiversity offset contractor SLR reviewed the BOMP and Offset Plan documents to assess their compliance with the key offset requirements by international lenders and provided comments on the following areas:

- Viability of the projects based on similar projects
- Roles and responsibilities for the offset projects
- Key Performance Indicators
- Monitoring and measurement of the offset outcomes
- Costings

Addressing the comments on the draft offset projects, Golder issued a Memorandum of Understanding (MOU) in March 2020. The MOU suggested three steps approach (Biodiversity Offset Strategy, Biodiversity Offset Management Plan, and site-specific Offset Plans) for practical and efficient implementation of the offset projects.

TANAP is progressing to develop the BOMP and Site Specific Offset management plans. It is currently revising the BOMP for further refinement with additional site specific surveys planned for 2021 for site specific offset management plans. Current TANAP plans are to select the Biodiversity Offset Projects Implementation and Monitoring Services contractor in Q4 2020 through tendering process.

Biodiversity offsets are not straightforward processes and require legal framework for protecting the offset activities, adequate human and financial resources to support its long term implementation, robust methodological approach for assessing the outcomes, and stakeholder engagement for broad acceptance. TANAP’s progress to refine and finalise the BOMP and offset plans have been compromised significantly due to the COVID-19 pandemic in the country in 2020. Considering the

complexity of the biodiversity offset design and its long term implementation schedule, and TANAP's progress and plans in place, IESC concludes, at this stage, that this requirement is compliant with the performance requirement.

ESAP Item 1.2 requires provision of a cost estimate for the operational phase Biorestoration monitoring and maintenance sufficient for the length of the pipeline corridor and to ensure sufficient contingency budget allocations for any newly identified biodiversity remedial and offset activities. TANAP's contractors have the responsibility of "aftercare and monitoring" during the 2 years contractual maintenance period, which is ending for the LOT1-LOT3 in December 2020, and LOT4 in December 2021. Once the contractors warranty period ends, TANAP will take full responsibility of the any additional repair works.

The draft BOMP included estimate budget for the Forest Offset and Steppe Offset projects during their implementation periods, i.e. 2020-2026 and 2020-2029, respectively. The BOMP was under revision during this audit and no assessment was given for the budget adequacy.

3.8 Cultural Heritage

3.8.1 Assessment

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

3.8.2 Consultation

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

3.9 Disclosure and Stakeholder Engagement

3.9.1 Stakeholder Engagement

Stakeholder engagement and information dissemination remain ongoing activities at all phases of the Project. Tasks that remain ongoing include: engagement on third party crossings (e.g. road or irrigation crossings in the permanent ROW); completion of commitments to hold land use awareness meetings; monitoring for compliance/land use violations. During interviews with PAPs during this virtual visit, it was demonstrated that PAPs have a good awareness of TANAP's ongoing activities on these matters and responsiveness to TANAP's approach to rectifying land use violations.

During operations, third party monitoring is to be carried out by consultants, Envy. Their review will include review of OSID records as well as provide an assessment of the adequacy of planned engagement activities.

The Operational social impact (SI) team is well integrated with other technical groups within TANAP, an example of which is on land re-entry for repair works. When land re-entry is required, a coordinated, electronic system is in place for ensuring internal stakeholder engagement is carried out. This enables all involved teams to be notified that repair works are required and of their scope. The SI team role is in disclosing information to affected landowners and users, on conditions, duration and compensation measures, if needed. Following works, the role includes ensuring the proper completion of land exit to be documented, ensuring full payment of any compensation entitlements and providing any additional information required.

TANAP has recognised limitations in its recent engagement activities. During recent months of the pandemic, differing approaches have been adopted as Covid-19 restrictions have been introduced by the Government. An Interim SEP is to be developed (which will be appended to the existing SEP) to document TANAP's engagement requirements and approaches under this existing scenario.

TANAP has reported good evidence-based approaches for shifting some engagement events from face to face, to online. In particular, the Annual Stakeholder Meeting is to be an online webinar rather than a physical gathering; this is possible because the participant group is largely government organisations and civil society organisations, all of whom have access to adequate facilities/equipment to enable their participation. For rural village meetings, on the other hand, these are now limited to phone calls as the first option, and where unavoidable (e.g. in land use violation cases), with appropriate PPE and social distancing.

Other engagement has included phone calls and Whatsapp/video calls with Muhtars or other stakeholders, for example, on informing about land use restrictions or in sharing photographs of land plots to assist in resolution of grievances.

TANAP is commended for making this commitment to document its Covid-safe SEP model, and recognises this will be a valuable tool for setting expectations for keeping stakeholders and the workforce safe while carrying out the work, and for documenting an example for work with communities, and other organisations and individuals, specific for Turkey.

3.9.2 Grievance management

See section 3.6.3 on current data.

During the Operational phase, the grievance mechanism will remain in place, and third party monitoring is to be carried out by consultants, ENVY. The SEP and GRM are to be updated in November 2020; this will provide for linkages between the OSID system and allow for future integration with the Integrity Mapping Platform (IMP). Until such time, OSID remains in place and is the core repository of all grievance data.

3.9.3 Information Disclosure

Information disclosure activities have been ongoing, with differing approaches adopted as Covid-19 restrictions were introduced. Newsletters and media pieces have continued, and information disclosure has been pursued through muhtars where face to face meetings directly with PAPs has not been possible or has been limited during the pandemic. Interviews with PAPs during this virtual visit have confirmed their awareness of TANAP's SI and ROW Monitoring workforce contacts, and key activities/requirements on issues that affect them, despite restrictions brought on by Covid-19.

Appendix A Evidence Register

Document Number	Document Name	Author	Date	Environment/ Social/OHS
01	TANAP Combined Project Overview_IESC-EBRD_Oct2020	TANAP	October 2020	All
02	TANAP ENV Update_IESC-EBRD_Oct2020	TANAP	October 2020	Environment
03	TANAP HR Update_IESC-EBRD_Oct2020	TANAP	October 2020	OHS/Social
04	TANAP HS Update_IESC-EBRD_Oct2020	TANAP	October 2020	OHS
05	TANAP RAP&LRP Update_IESC-EBRD_Oct2020	TANAP	October 2020	Social
06	TANAP SEIP Presentation_IESC-EBRD_Oct2020	TANAP	October 2020	Environment/Social
07	TANAP Social Impact Update_IESC-EBRD_Oct2020	TANAP	October 2020	Social
08	LOT-1&2 Env. Defect List	TANAP	October 2020	Environment
09	LOT-3&4 Env. Defect List	TANAP	October 2020	Environment
10	RoW patrolling findings categorization	TANAP	October 2020	Environment
11	TANAP-TNP-MOM-FRS-0002_Redacted	TANAP	March 2019	Environment
12	WRP-DAS-PPL-PLG-002	TANAP	January 2017	Environment
13	GONEN RIVER CROSSING RVX1-0014 KP1661+540 PHOTOS	TANAP	October 2020	Environment
14	TANAP-TNP-LET-MNC-0577	TANAP	August 2020	Environment
15	TANAP-TNP-LET-NGS-3803	TANAP	February 2020	Environment

16	TANAP-TNP-LET-NGS-4443	TANAP	July 2020	Environment
17	LOT-1 Aftercare Monitoring Report-(FRN-REP-ENV-PL1-049-P4-1)_Redacted	TANAP	September 2020	Environment
18	LOT-2 Aftercare Monitoring Report-(SYA-MST-ENV-PL2-011-P4-C)_Redacted	TANAP	June 2020	Environment
19	LOT-3 Aftercare Monitoring Report-(TKF-REP-CVL-PL3-007-P4-0)_Redacted	TANAP	March 2020	Environment
20	OHL BIRD MONITORING AUTUMN 2019_(CIN-REP-ENV-GEN-057-P3-0)_Redacted	TANAP	February 2020	Environment
21	OHL BIRD MONITORING SPRING 2019-(CIN-REP-ENV-GEN-052-P3-0)_Redacted	TANAP	November 2019	Environment
22	OHL BIRD MONITORING SPRING 2019-(CIN-REP-ENV-GEN-052-P3-0)_Redacted	TANAP	September 2020	Environment
23	Slope Erosion Survey Form Example TMS-REP-OPR-GEN-004-P4-0 42	TANAP	December 2019	Environment
24	DR-PT-1-2-3-201007_Redacted	TANAP	October 2020	Environment
25	DR-PT-4-5-6-7-200909_Redacted	TANAP	September 2020	Environment
26	QHSE Engineers - ENV Training Matrix	TANAP	October 2020	Environment
27	TNP-QAC-FRM-002-Trainign Record Form_16092020	TANAP	September 2020	Environment
28	TNP-QAC-FRM-002-Training Record Form_25062020.pdf	TANAP	June 2020	Environment
29	(CS5&MS2) QHSE Specialist-1	TANAP	December 2019	Environment

30	Appendix-1 Action Priority Table_rev02112020	TANAP	November 2020	Environment
31	BOT-PCD-OTS-GEN-001-P6-0_Redacted	TANAP	August 2020	Environment
32	GHG Emissions Report-2019-(CIN-REP-ENV-GEN-065-P3-1)_Redacted	TANAP	March 2020	Environment
34	LOT 4 Aftercare and Monitoring Plan_(PLK-PLN-ENV-PL4-022-P4-21)_Redacted	TANAP	May 2020	Environment
35	LOT 4 Aftercare and Monitoring Report_(PLK-REP-ENV-PL4-023-P4-0)_Redacted	TANAP	July 2020	Environment
36	Recent photographs of slopes monitored by envy	TANAP	July 2020	Environment
37	RVX_Monitoring e.g. LOT 1-2-3-4	TANAP	October 2020	Environment
38	TNP-QAC-FRM-008-00061	TANAP	September 2020	Environment
39	WRP-REP-EGG-GEN-004-P3-0_Reinstatement and Erosion Control Requirements_Redacted	TANAP	September 2014	Environment
40	6th RAP Semi annual monitoring report	External monitoring panel	Dec 2019	Social
41	ADDITIONAL SOCIAL STUDY REPORT ON IDENTIFICATION AND ASSESSMENT OF PIPELINE-BASED LIVELIHOOD IMPACTS	Cinar	Oct 2020	Social
42	TANAP_Updates on Land Acq & RAP Budget	TANAP	Sept 2020	Social
43	12th Quarterly Internal RAP Monitoring Report_FINAL	TANAP	December 2019	Social

44	Updated Info and New Doc of Labor Audit	TANAP	Oct 2020	Social
45	Update on land exit status	TANAP	Oct 2020	Social
46	TANAP's internal newsletter on "TANAP Protects Local Values by Supporting Local Products" email (an exemplary outcome of LRAP)	TANAP	Oct 2020	Social
47	Ecological Management Plan for Operations	TANAP	July 2018	Environment
48	Environmental and Social Management Plan	TANAP	October 2018	Environment / Social
49	Pollution Prevention Plan for Operations	TANAP	July 2018	Environment
50	Waste Management Plan for Operations	TANAP	June 2018	Environment
51	Operations HS Management Plan (TNP-PLN-HSM-GEN-012)	TANAP	October 2018	OHS
52	Emergency Response Plan for TANAP HQ	TANAP	August 2020	OHS
53	Emergency Response Procedure (TNP-PCD-HSM-GEN-039-1)_Redacted	TANAP	April 2020	OHS
54	TNP-PLN-HSM-GEN-016 INCIDENT MANAGEMENT PLAN_Redacted	TANAP	March 2019	OHS
55	CS1-ERT-004 Site Emergency Exercise related COVID-19 26.02.2020-redacted.pdf	TANAP	February 2020	OHS
56	CS5-ERT-007-27.08.2020- CS5 Site Emergency Response Exercise Report.pdf	TANAP	August 2020	OHS

57	MS3-MS4-ERT-007 Site Emergency Response Exercise Report_040320.docx	TANAP	March 2020	OHS
58	TNP-OPR-TMP-019 SITE EMERGENCY RESPONSE EXERCISE REPORT_CS5_30.Sep.20 (1).docx	TANAP	September 2020	OHS
59	TNP-OPR-TMP-019 SITE EMERGENCY RESPONSE EXERCISE REPORT_MCC_24.Sep.20 (1).docx	TANAP	September 2020	OHS
60	TNP-OPR-TMP-019 SITE EMERGENCY RESPONSE EXERCISE REPORT_MCC-ERT-005_08.May.20.docx	TANAP	May 2020	OHS
61	TNP-OPR-TMP-019 SITE EMERGENCY RESPONSE EXERCISE REPORT_MS4_07.May.20.docx	TANAP	May 2020	OHS
62	TANAP 2020 August General Org Chart.pdf	TANAP	August 2020	OHS/Social
63	TANAP 2020 August QHSSE Org Chart.pdf	TANAP	August 2020	OHS/Social
64	TANAP DECEMBER 19 AUDIT REPORT_Redacted.pdf	Practical Solutions	December 2019	OHS/Social
65	TANAP JUNE 20 AUDIT REPORT_Redacted.pdf	Practical Solutions	June 2020	OHS/Social
66	TANAP MARCH 20 AUDIT REPORT_Redacted.pdf	Practical Solutions	March 2020	OHS/Social
67	TNP-PLN-HRM-GEN-001 P6-0 Human Resources Management Plan.pdf	TANAP	March 2020	OHS/Social
68	TNP-POL-HRM-GEN-006 P3-0 Human Resources Policy.pdf	TANAP	February 2016	OHS/Social

69	Aerial survey and photogrammetrical inspection	TANAP	October 2020-	All
70	IMP_Layers	TANAP	October 2020-	All
71	TANAP_INTEGRITY_MAPPING_Platform_final.pdf	TANAP	October 2020-	All
72	Pipeline Monitoring Systems Geo Hazards (Leak_Earthquake_Landslide)	TANAP	October 2020	All
73	Quarterly environmental and social monitoring report	TANAP	January 2020	Environment
74	Various ENVY Monitoring Reports	ASE (ENVY)	-	Environment
75	Manufacturing readiness	TANAP	December 2019	OHS
76	TNP-QAC-FRM-008-00058-rep-DRS-Vessel_Redacted.pdf	TANAP	June 2020	OHS
77	TANAP-TNP-MOM-TKN-1297 Transfer of Responsibilities from Contractor to TANAP Ops_Redacted.pdf	TANAP	October 2019	OHS
78	CS7 - PS8_ HANDOVER DOCUMENTS_Redacted.pdf	TANAP	May 2019	OHS
79	TNP-PCD-HSM-GEN-018 H&S RISK ASSESSMENT AND MANAGEMENT PROCEDURE.pdf	TANAP	December 2018	OHS
80	010-2019_OMI Incident Notification-Near Miss-MS1-PTW Audit Findings.pdf	TANAP	Mach 2019	OHS
81	TANAP_Updates on CampSites Handover_2020-10-20	TANAP	October 2020	Social
82	TNP-PLN-SOC-GEN-010 Rev P3-3 RAP Monitoring Plan_2020	TANAP	November 2020	Social