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Trans Adriatic Pipeline Project

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Ecological Management Plan
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Appendix 16

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APPENDIX 16
ALBANIA NEARSHORE ECOLOGY MANAGEMENT PLAN

Purpose of this document

The purpose of this Albanian Nearshore Ecology Management Plan document is to:

- Introduce the rationale and objectives for the avoidance and management of impacts to benthic species and benthic habitat features associated with the Trans Adriatic Pipeline (TAP) installation in the nearshore approach to the Albanian coastline. The Albanian nearshore section subject to this plan extends to KP 8.
- Present the existing information that TAP has collected to assess seabed features and species of environmental sensitivity.
- Detail the approach to the collection of additional seabed features and species data.
- Define the specific mitigation measures and how these will be enhanced, incorporating additional seabed features and species data.
- Define how these measures will be enacted, monitored and reported.

This plan should be read in conjunction with the EMP, Appendix 12, Appendix 13 and Appendix 14.

The expected outcome of this Albania Nearshore Approach Ecology Management Plan is the minimisation of residual impacts, particularly net losses, on species and habitats identified as critical habitat triggers in the Critical Habitats Assessment (CHA), as presented in Table 1 below.

The plan is a ‘live’ document that will be adapted through the detailed design and construction phases of the TAP project, including additional planned surveys within the area of potential impact of the construction works. This draft provides a structured framework for the plan. Specific details will be added as detailed construction information becomes available (e.g. pipelay barge anchoring activities and installation work to ensure pipeline stability) as well as additional survey data. TAP will revise this and associated documents, with inputs from the EPC contractors and the subject matter experts, before and during the construction phase of the TAP project.

Introduction

Existing data collated and reviewed to date

TAP commissioned a benthic and water quality survey of the nearshore approach in 2011. The survey sampled a total of 38 stations. Sediment samples were collected at all stations for physical and chemical analysis (organic content, nutrients, total organic carbon, metals, and PAHs). At eight stations, samples were collected for biological analysis (microbenthic species retained on a 0.5 mm sieve).

Analysis of water samples indicated low PAH, nutrient and chlorophyll $a$ concentrations; metal concentrations were considered typical of the region.
With the exception of chromium and nickel, sediment metal concentrations were also within the range considered characteristic of the predominantly pelitic sediments. There was a clear tendency, for most parameters, for concentrations to be higher at greater distance from the shoreline. Organic content did not exceed 1.29%, and total organic carbon did not exceed 1.25%, indicating that the sediments within the survey area were not organically enriched.

There was considerable variation in the number of taxa and individuals at the eight stations which were sampled for microbenthic analysis. At all stations, polychaetes were numerically dominant (although they were in general only identified to family level, so formal assessment of diversity was not possible). At six of the eight stations, only one to three taxa were present, and abundance did not exceed 300 individuals.m\(^{-2}\). At one station, abundance approached 1200.m\(^{-2}\), with 15 taxa represented. Molluscs were present at five stations, crustacea at three, and echinoderms at one. No rare or endangered species were observed at any station.

The water quality data suggested an environment tending towards oligotrophic, and the low sediment nutrient and organic content are consistent with this. Sediment chemistry did not indicate the presence of contamination, although this could not be excluded as a reason for some high nickel and chromium concentrations. Macrobenthic diversity and abundance was moderate to low, and no vulnerable species or communities were observed.

**Mitigation and management measures**

The TAP Albania ESIA identified increased turbidity during pipelaying as the most likely source of potential nearshore impact. Increased turbidity would arise from trenching work, and from anchoring. In both cases, the increase would be transitory, with the highest turbidity estimated to occur in the vicinity of the landfall coffer dam. Although the adjacent nearshore biological communities are not considered to be sensitive receptors in this respect, two mitigation measures were identified to minimise possible short-term impact:

- The use of silt screens to minimise longshore drift of suspended particulates.
- During lay barge movement, raising and lowering the anchors, rather than dragging them through the seabed sediment.

TAP is currently commissioning a supplementary pre-construction survey of the nearshore area. This survey will enhance the baseline survey completed in 2011. The spatial scope will be greater, with additional stations included to cover temporary dredged material lay-down sites and to reflect final changes to the pipeline route. To ensure the safety of construction contractor personnel and equipment, a final survey for unexploded ordinance will be carried out at the same time. The surveys will extend to a water depth of approximately 40m, corresponding to an offshore limit between KP 7 and KP 8 on the final pipeline route.

The principal reason for conducting the survey is to capture and assess any environmental changes (either natural or anthropogenic) which might have occurred in the interval between the baseline survey and the commencement of construction (in contrast to the terrestrial pipeline RoW, direct and continuous observation is not feasible for the subsea RoW). In the absence of significant change, the impacts and mitigation measures identified in the ESIA can be confirmed. If changes have occurred, the project has the opportunity to determine whether existing mitigation measures remain sufficient, or whether modification or the introduction of additional mitigation is appropriate. The additional information provided by the repeat survey will, in
particular, assist in ensuring that anchor and silt screen placement can be implemented with the best effect.

Sediment grab sampling will be carried out at 46 stations (Figure 1), and water samples will be collected at 25 of these stations. At each of the 46 stations, still photographs and a short video recording will be taken, to indicate the seabed characteristics and to identify any features which the grab sampling might not clearly identify.

Sediment samples will be processed for:
- Macrobenthic organisms (retained on a 0.5 mm sieve).
- Granulometry (particle size distribution) and organic content.
- Metals
- Hydrocarbons
- Nutrients (N and P compounds).
- Pesticides

Water samples will be processed for the following parameters, to provide an indication of the quality of water flowing through the survey area:
- Suspended solids.
- Organics
- Metals
- Nutrients
- Chlorophyll a

The use of still photography and video during the survey will align with 11 planned video transects which will be undertaken at eight locations along the pipeline route to investigate target features of interest in the nearshore environment (Figure 2). Nine of the transects lie within the planned benthic survey area. Eight transects cover unknown features noted in a 2011 sidescan sonar survey as ‘depressions or bioconstructions’. One transect is intended to update the status of a seapen meadow noted in 2011, located approximately 500m to the north of the pipeline route. Information from this will be integrated with the results of the benthic survey to ensure the most effective placement or silt screens and barge anchors.

Upon completion of the supplementary pre-construction survey of the nearshore area, the results will be interpreted and included by the end of 2Q 2018 within a revised version of the Ecological Management Plan and Albania Nearshore Approach Ecology Management Plan that will include:

- Specific seabed targets to be included within exclusion areas in the anchor placement plan, i.e. areas that will be excluded from anchoring activities (including contact from anchor wires).
- Specific controls to minimise sediment mobilisation from construction activities – this will be dependent on the availability of marine construction work planning and if not available in 2Q 2018 a revision of the Albania Nearshore Approach Ecology Management Plan will be issued in 3Q 2018 prior to the start of marine construction work.
• A register of Level 3 sites.

A Level 3 site file will be developed for all Priority Biodiversity Features (PBFs) and Critical Habitats (CH) identified which shall detail specific mitigation, monitoring and, where required, offsets to achieve No Net Loss (NNL) and Net Gain (NG).