TAP AG Project Title / Facility Name:

Trans Adriatic Pipeline Project

Document Title:

Ecological Management Plan

CAL00-PMT-601-Y-TTM-0007

Appendix 15

1	20-11-2017	Issued for Implementation	IFI	R.Southern	A.Engel	B.Boulton
0	20-07-2017	Issued for Implementation	IFI	R.Southern	A.Engel	B.Boulton
Rev.	Revision Date (dd-mm-yyyy)	Reason for issue and Abbreviation for it, e.g, IFR		Prepared by	Checked by	Approved by

	Contractor Name:	
	Contractor Project No.:	
	Contractor Doc. No.:	
	Tag No's.:	
TAP AG Contract No.:	*Project No.:*	
PO No.:	*RD Code:*	*Page:* **1 of 5**

TAP AG Document No.:

CAL00-PMT-601-Y-TTM-0007

APPENDIX 15
DEEPWATER ECOLOGY MANAGEMENT PLAN

Purpose of this document

The purpose of this Deepwater 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 offshore pipeline installation along the whole route of the Trans Adriatic Pipeline (TAP) from water depths of ≥200m, and/or (where different) within the boundary of the South Adriatic and Ionian Strait Ecology or Biologically Significant Marine Area (EBSA), in both Italian and Albanian waters.
- 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 Deepwater 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. Note that due to data limitations some of these assessments are considered precautionary and further survey work to verify potential presence is required.

Table 1: deepwater critical habitat triggering species and habitats.

Marine biodiversity feature	Potentially present in AOI Albania	Potentially present in AOI Italy
Critical habitat triggers		
Cnidaria Bamboo coral (*Isidella elongata*) Tall sea pen (*Funiculina quadrangularis*) Deepwater coral (*Lophelia pertusa*) Zigzag coral (*Madrepora oculata*) White Gorgonian (*Eunicella singularis*) Stony cup coral (*Dendrophyllia cornigera*) Cockscombe cup coral (*Desmophyllum dianthus*) Smooth black coral (*Leiopathes glaberrima*), Slender Sea Pen (*Virgularia mirabilis*), *Pennatula rubra*)	Yes	Yes
Sponges *Axinella cannabina* *Axinella polypoides*	Yes	Yes
Annex I habitats Reefs (includes bioconstructions) Submarine structures made by leaking gases (includes carbonate chimneys, pock marks, cold seeps).	Yes	Yes
South Adriatic and Ionian Strait EBSA Qualifying benthic habitat features included under cnidarians, sponges and Annex I habitat.	Yes	Yes

This Deepwater Ecology Management Plan is a 'live' document that will be adapted through the detailed design and construction phases of the TAP project, including further deepwater surveys within the area of 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 project.

Introduction

Existing data collated and reviewed to date

To identify the data gaps and uncertainties associated with the potential presence of critical habitat triggering species and habitats in deepwater, particularly within the South Adriatic and Ionian Strait Ecology or Biologically Significant Marine Area (EBSA), a review was undertaken of all available information on deepwater (≥200m) environments relevant to the TAP offshore alignment. This Deepwater Habitat Review is presented as Appendix 7 of the Critical Habitats Assessment (CHA).

This consisted of:

- A literature review.
- TAP-commissioned geophysical survey data review.
- TAP-commissioned environmental survey data review.

The review covered approximately KP 12 (Albanian nearshore, approximately 60m water depth, border of EBSA) to KP 80 (approximately 1km landward of Italian shelf break, approximately 100-150m water depth). Areas of hard and/or elevated seabed were of particular focus. A number of features in deep water (≥200m) and/or of the South Adriatic and Ionian Strait EBSA were identified from TAP geophysical and route investigation surveys for further consideration as supporting potential critical habitat triggers. These included wrecks with possible coral, boulders, small pockmarks and mud mounds, areas of outcropping and possible debris.

In summary, the literature review identified one broad habitat feature (cold seeps) and six deep water habitat types (cold water coral and associated communities, sponge grounds, chimneys (columnar carbonates), pock marks, seapens), black coral (*Antipatharia*) and bamboo coral with potential to be present along or in proximity to the TAP alignment.

Mitigation and management measures

Currently there are very limited available or prescribed and successful restoration measures known for deepwater habitats and species. The best mitigation is avoidance of seabed works and the reduction of sedimentation in proximity to sensitive deepwater species and habitats such as those identified in the CHA.

As described above, and detailed in Appendix 7 of the CHA, TAP has collated and analysed its commissioned survey data and available secondary data for the whole offshore alignment and a portion of the anchoring area of impact. Due to the spatial coverage of the currently available data, additional geophysical and ecological surveys will be undertaken, including imagery data collected via remote operated vehicle (ROV). The purpose of this survey work will be to:

- Identify aggregated benthic species and habitat features, focusing on areas containing critical habitat triggers within the anchoring zone of impact.

- Collect targeted seabed habitat data to support the mapping of solitary species presence and abundance from which to attempt to estimate net losses requiring offsets.
- Establish anchoring exclusion zones to prevent and minimise impacts to areas containing critical habitat triggers.

TAP will prepare the scope and schedule of the additional geophysical data[1] and and ROV (imagery) survey by the end of March 2018. The scope of the survey will be issued to the International Financial Institutions for review and comments and the final scope included in a revised version of the Ecological management Plan.

TAP will work with the offshore pipeline contractor to ensure the geophysical data and ROV (imagery) survey design incorporates the required spatial boundaries to sufficiently cover all areas within the potential construction footprint, i.e. the anchor (anchor wires) area of impact on the seabed.

Upon completion of the additional geophysical data and ROV (imagery) survey the results will be interpreted and included within a revised version of the Ecological Management Plan that will include:

- Specific sensitive seabed targets to be included within exclusion areas in the anchor placement and rock dumping plan i.e. areas that will be excluded from anchoring activities and where possible rock dumping activities (including contact from anchor wires)
- Specific controls to minimise sediment mobilisation from anchor and wire movement
- Estimation of solitary species that may be present within the footprint / area of impact of the anchors and wire
- A register of level 3 sites

The revised version of this Deepwater Ecological Management Plan will be disclosed three months prior to the start of offshore pipeline installation in water depths deeper than of ≥200m, and/or (where different) the boundary of the South Adriatic and Ionian Strait in Italian and Albanian waters.

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).

[1] A standalone MMMP will be devlelpoed for any geophysical surveys in order to mitigate impacts associated with seismic activities e.g.http://jncc.defra.gov.uk/pdf/jncc_guidelines_seismicsurvey_aug2017.pdf or equivalent internationally recognised standard/ practice