TAP ITALY ESMS ONSHORE ECOLOGICAL MANAGEMENT CCP

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1 Abbreviations and Definitions

The following table provides definitions of acronyms and a glossary of terms used in this document.

Table 1-1 Abbreviations and Definitions

ALARP	As Low As Reasonably Practicable
CCP	Contractor Control Plans
COMPANY	TAP AG
CONTRACTOR	Construction contractors for Italy
Cultural heritage impact	A change to cultural heritage (in this context “cultural heritage” refers to any tangible (e.g. objects, artefacts, structures, spaces) or intangible element which is of value or importance to people’s culture, history and/or identity) which has occurred as a result of Project activities. Impacts may be considered to be positive or negative.
EBRD	European Bank for Reconstruction and Development
EHS	Environment, Health and Safety
EN	Endangered (Red Data Book definition)
Environmental impact	A change to the environment (in this context the “environment” refers to any aspect of the natural or semi-natural physical environment (air, water, soil etc.)) which has occurred as a result of Project activities. Impacts may be considered to be positive or negative.
ESIA	Environmental and Social Impact Assessment
ESIP	Environmental and Social Implementation Plans
ESMS	Environmental and Social Management System
EU	European Union
GMO	Genetically Modified Organism
IFC	International Finance Corporation
IPIECA	Global oil and gas industry association for environmental and social issues
KP	Kilometer Points relating to the pipeline route as per the base case described in the ESIA (it is possible that KP locations will change because of a re-routing)

Land take	Land take refers to the additional acquisition of physical space for Project use.
LC	Least Concern (Red Data Book definition)
NT	Near Threatened (Red Data Book definition)
Pipeline	Proposed pipeline scheme (TAP) including related facilities such as access roads, etc.
Project	Proposed pipeline scheme that will bring natural gas from the Caspian region to Western and South-Eastern Europe (TAP)
PRT	Pipeline receiving terminal
SCI	Site of Community Importance
Socio-economic impact	A change to the existing socio-economic environment (in this context the "socio-economic environment" refers to the combination of any existing social and economic factors) which has occurred as a result of Project activities. Social factors may include aspects such as demographics, health and wellbeing etc. and may refer to individuals, groups or wider communities of people. Economic factors may include aspects such as employment, finances, livelihoods etc. An impact may be considered to be positive or negative.
SPA	Special Protected Area
TAP	Trans Adriatic Pipeline
TAP AG	Trans Adriatic Pipeline joint venture company
TMP	Traffic Management Plan

2 Introduction

This Contractor Control Plan (CCP) identifies the commitments made in relation to ecological management during the construction and commissioning phase of the Project and describes the COMPANY's requirements of CONTRACTOR in terms of meeting these commitments. Where a specific commitment from the Italy Commitments Register is described in this CCP, it is followed by its reference number as stated on the Project Commitment Register Italy (e.g. IT0012). Additional requirements have been included within this CCP where they are deemed to be internationally accepted or best practice. These additional requirements are not followed by a reference number.

As part of its planning and readiness for construction, CONTRACTOR is required to prepare its own Environmental and Social Implementation Plans (ESIPs) setting out how it intends to meet and comply with specific Project commitments set out in each CCP developed by the COMPANY. This CCP shall act as a reference from which CONTRACTOR shall prepare an Onshore Ecological Management ESIP.

Deviations that involve measures different from those contained in this CCP will only be permitted upon approval of the COMPANY.

The Contractor's ESMS Framework Document (CAL00-RSK-601-Y-TTM-0001) provides an explanation of the linkage between CCPs and ESIPs.

2.1 Objectives

This CCP has been prepared to define the mitigation measures necessary to ensure effective ecological management (i.e. that impacts to species or habitats are as low as reasonably practicable (ALARP[1])) during the construction phase of the onshore sections of the Project in Italy. The objectives of the CCP are to ensure that ecological management complies with the commitments made in the Project Environmental and Social Impact Assessment (ESIA) Italy and international best practice.

2.2 Scope

This CCP defines COMPANY requirements (i.e. the commitments) and best practice in ecological management that CONTRACTOR shall implement during construction, including hydrotesting and commissioning.

The scope of this CCP includes:

- footprint management
- restrictions on timing of works

[1] For a risk (or impact) to be ALARP it must be possible to demonstrate that the cost involved in reducing the risk/impact further would be grossly disproportionate to the benefit gained. The ALARP principle arises from the fact that infinite time, effort and money could be spent on the attempt of reducing a risk/impact to zero. It should not be understood as simply a quantitative measure of benefit against detriment. It is more a best common practice of judgement of the balance of risk and societal benefit.

- protected areas
- construction management
- wetlands
- invasive species.

Management of potential ecological impacts associated with the supply chain and resource use is described in the Onshore Resource Management CCP (IAL00-RSK-601-Y-TTM-0001).

Reinstatement and revegetation requirements related to this plan are detailed in the Onshore Erosion Control and Reinstatement CCP (IAL00-RSK-601-Y-TTM-0003), the Specification for Reinstatement (IAL00-SPF-000-C-TRH-0004) and the Italy Biorestoration Guidance and Preliminary Specification (IAL00-RSK-601-Y-TSP-0001).

Monitoring and inspection requirements related to this plan are detailed in the Onshore Compliance Monitoring CCP (IAL00-RSK-601-Y-TTM-0006).

This CCP applies to all onshore areas that might be affected by the Project, including but not limited to the working strip, construction sites of the pipeline receiving terminal (PRT), construction site of the block valve station, access roads, all temporary material and waste storage areas and public roads used by the Project.

2.3 Responsibilities

The COMPANY's role is that of compliance assurance, as described in the Compliance Assurance Plan . The COMPANY shall also be responsible for conducting a range of ecological surveys (see Section 3.1.1).

CONTRACTOR shall be responsible for ensuring that the Project (including all site operations, equipment and machinery) will comply with the defined Project Standards which encompass the requirements of Italian legislation, EU Directives, EBRD Environmental and Social Policy, IFC Performance Standards and IFC EHS Guidelines (IT0036). CONTRACTOR will also comply with the requirements of the COMPANY Environmental and Social Management System (ESMS) (IT0516) (including this CCP) and the ESIA Italy.

CONTRACTOR shall be responsible for any adverse environmental, socio-economic and cultural heritage impacts arising from its activities and operations and for putting in place any necessary measures to avoid or, if not possible, mitigate them. CONTRACTOR will also be responsible for promptly reacting to accidental events and mitigating any resulting adverse environmental, socio-economic and cultural heritage impacts for which CONTRACTOR is responsible as much as possible. Should any such accidental events occur, CONTRACTOR will immediately inform the COMPANY. Should these accidental events be the responsibility of CONTRACTOR (i.e. events resulting from CONTRACTOR's activities, events in areas which CONTRACTOR is responsible for), CONTRACTOR shall consult the COMPANY on the best way to handle and/or mitigate immediate risks to Project stakeholders.

CONTRACTOR shall put these responsibilities into effect by

- writing an Onshore Ecological Management ESIP that describes how it will implement the requirements described in Section 3 of this CCP and other legal requirements
- implementing the Onshore Ecological Management ESIP by:
    - communicating the contents of the ESIP to its workers and subcontractors and training them to ensure that they understand their responsibilities with respect to onshore ecological control and management, and incident reporting and response
    - ensuring that adequate resources are mobilised for onshore ecological management, including input from any specialist resources necessary to ensure effective planning and implementation of measures. CONTRACTOR will employ trained personnel and all work will be supervised by on-site environmental coordinator(s) with relevant experience (see the Contractor's ESMS Framework Document (CAL00- RSK-601-Y-TTM-0001))
    - ensuring compliance by its workers and subcontractors with the procedures established in the ESIP
    - implementing effective monitoring of onshore ecological management measures to ensure that the effectiveness of ecological control and management activities are assessed and any issues are promptly detected, in accordance with the Onshore Compliance Monitoring CCP (IAL00-RSK-601-Y-TTM-0006)
    - ensuring that all environmental, socio-economic and cultural heritage incidents are reported and dealt with effectively and that lessons are learned in accordance with the procedures outlined in the Contractor's ESMS Framework Document (CAL00-RSK-601-Y-TTM-0001)

- keeping the COMPANY fully informed of any site environmental, socio-economic and cultural heritage issues.

CONTRACTOR shall be responsible for compiling the Onshore Ecological Management ESIP in a timely manner and submitting it to the COMPANY for review and acceptance a maximum of 30 days after Contract award. The ESIP shall not be considered “accepted for construction” until all comments raised by the COMPANY have been addressed by CONTRACTOR to the satisfaction of the COMPANY. Construction will not be allowed to commence before all relevant ESIPs are accepted.

3 Impact avoidance and mitigation

The Project in Italy crosses and is adjacent to areas of ecological importance and habitats supporting protected species of flora and fauna. In order to avoid, or at least minimise impacts and mitigate any residual impact CONTRACTOR will ensure that all required measures are implemented and that all employees are aware of these measures.

Some commitments are qualified with “where possible”. If these cannot be implemented, CONTRACTOR shall demonstrate to the satisfaction of the COMPANY why it is not possible to comply with the commitment.

CONTRACTOR shall:

- identify measures to avoid, minimise or mitigate potentially adverse impacts and identify opportunities to conserve biodiversity where possible
- avoid significantly changing or modifying a habitat in a way that substantially reduces its ability to maintain viable population of its native species and its ecosystem functions.

In addition, where modified or newly created habitats may be impacted, CONTRACTOR should aim to minimise any further degradation or conversion of habitat.

3.1 Ecological surveys

3.1.1 COMPANY ecological surveys

The ecological surveys described in Table 3-1 will be conducted by the COMPANY. The information shall be passed on to CONTRACTOR, to be reflected in its work.

Table 3-1 Terrestrial ecological surveys undertaken by the COMPANY

No.	**Survey type**	**Timing**	**Location**
1	Establish a pre- post construction biodiversity baseline from which all mitigation, restoration, and loss/degradation can be measured. This shall include fauna and vegetation surveys. Pre-construction surveys will be undertaken to establish the baseline conditions of vegetation at the Project construction locations (IT0298). Any plant surveys that are required will be undertaken in April - May, when the majority of species are flowering (IT0302).	Pre-construction	All Project affected areas
2	Wildlife surveys: The COMPANY will communicate the areas where identified species are known to occur to CONTRACTOR who will use this information to define the overall schedule to ensure that work does not take place within restricted periods. However, information on wildlife presence may be updated following any additional wildlife surveys, which may lead to the identification of new constraints. If any are identified, they will be notified to CONTRACTOR by the COMPANY and management /mitigation measures will be implemented as required.	Pre-construction	All Project affected areas
3	Undertake any amphibian translocation works after breeding in summer and prepare/identify locations for suitable translocation sites prior to removal (following Ecological Management Plan requirements).	Pre-construction	Watercourse crossings

3.1.2 CONTRACTOR ecological surveys

CONTRACTOR will conduct ecological monitoring in onshore areas during construction and post construction in order to ensure the satisfactory implementation of proposed management and mitigation measures, and to identify any changes that occur over the construction period. This monitoring will be undertaken in accordance with the Onshore Compliance Monitoring CCP (IAL00-RSK-601-Y-TTM-0006).

It is not anticipated that any watercourse crossings will be required in the onshore areas affected by the Project in Italy. However, in the event that watercourse crossings should be required (for example in the event of a re-routing), CONTRACTOR's Pre Construction and Post Construction surveys will include taking photographs before undertaking the crossing and after restoration works. This will allow comparison of before and after conditions to document channel habitat distribution and coverage.

CONTRACTOR shall provide the results of the Pre Construction, During Construction and Post Construction Onshore Surveys to the COMPANY in a timely manner.

3.2 Footprint management

Prior to the start of Project activities, CONTRACTOR will stake out the alignments, boundaries and limits of Project sites in accordance with what has been agreed in advance with the COMPANY (for more information see the Specification for Working Strip Preparation and Maintenance (IAL00-SPF-000-C-TRH-0005)). CONTRACTOR will establish the working strip and limit personnel and vehicle movements to within the working area.

Material staging and holding areas will be designated in coordination with the COMPANY. Any work required outside agreed areas will be subject to the requirements of the Onshore Additional Land Take CCP (IAL00-RSK-601-Y-TTM-0005).

CONTRACTOR will avoid as far as possible olive groves, woodland areas and any other valuable environmental resources identified during route refinement (applicable also to any required re-routings). Boundaries of all construction sites will be placed to avoid damage to trees (including olive trees) by machinery. The width of the working strip will be reduced to:

- 18 m when crossing olive groves (IT0700, IT0096)
- 18 m for crossings of the wooded areas (IT0698).

Prior to construction, CONTRACTOR shall place signs with environmental protection information in areas:

- identified as environmentally sensitive
- where sensitive flora and fauna species are situated immediately adjacent to construction areas and that may be inadvertently disturbed or damaged during construction.

Sensitive areas may include, but are not limited to, nest sites, plant and wildlife species of high conservation value, site-specific habitat features to be protected.

All Project work activities will stay within the staked out alignments and boundaries, and outside any areas identified by the COMPANY or CONTRACTOR as being ecologically sensitive, unless specifically authorised by the COMPANY as part of the Project. Where possible the Project work sites will be located to reduce habitat loss (IT0308).

COMPANY acceptance must be obtained prior to work in any proposed amendment to the agreed footprint in accordance with the Onshore Additional Land Take CCP (IAL00-RSK-601-Y-TTM-0005).

3.3 Restrictions on the timings of works

CONTRACTOR shall ensure that relevant clearing and construction activities and reinstatement/restoration activities adhere to the Project wildlife timing constraints outlined below.

- where possible construction will be restricted to outside the bird breeding period (1st March – 31st July) (see Table 3-2 for further requirements regarding the management of breeding birds)
- construction will not take place during the reproductive / nesting period of protected fauna species within the Natura 2000 sites (IT0718).

Any proposed exceptions to this shall be reported to the COMPANY for acceptance and shall be subject to full assessment and careful planning.

Where it is not possible to restrict the timing of construction practices, vegetation should be removed outside the breeding periods (as given above) so that works can carry on into this period unhindered.

Table 3-2 Restricted activity periods for wildlife

Species/habitat	Location	Restricted activity period	Comments
Breeding birds	Habitat used by breeding birds	1st March – 31st July	If working sites are open in the period 1st March – 31st July (bird breeding season) pre-vegetation clearance surveys will be undertaken by qualified ornithologists to be employed by CONTRACTOR and approved by the COMPANY. To enable works during the breeding season, birds should be discouraged from breeding by installing plastic bands or flags before bird breeding season starts (1st March). In the exceptional case that work sites are opened up during the bird breeding season (March – July) without above measures having taken place, pre-vegetation clearance surveys will be undertaken by qualified ornithologists (see above). Should nests of species of conservation concern (i.e. species listed by the Bern Convention, EU bird directive or Italian National law) be located in the working strip, the strip shall be optimized so that no works will be carried out within a 25 m buffer of the nest site until chicks have fledged from the nest or it is abandoned.
Protected species of fauna	Natura 2000 sites	Reproduction period, nesting period	Construction work in or near to this area must not take place during the reproduction/nesting period of protected species of fauna (IT0718).

Restrictions on timings of works shall be communicated to CONTRACTOR by the COMPANY. CONTRACTOR will use this information to define the overall schedule to ensure that work does not take place within restricted periods. However, information on wildlife presence may be updated following any additional wildlife surveys, which may lead to the identification of new constraints. If any are identified by the COMPANY, they will be notified to CONTRACTOR by the COMPANY and management and mitigation measures will be implemented as required.

3.4 Protected areas

3.4.1 National Parks

Two National Parks are present within the region, however they are not considered to be in the area that will be affected by the Project.

3.4.2 Natura 2000 Sites

Two Natura 2000 Sites have been identified in the vicinity of the onshore Project area. One is located 2 km to the north and the other 3 km south (see Table 3-3).

Table 3-3 Natura 2000 Sites present within 5 km of the pipeline working strip (adapted from: ESIA Italy – Section 6, Table 6-75)

Site	Nature 2000 Code	Name	Distance from Working Strip (km)	Reason for designation
SCI* & SPA**	IT9150014	Le Cesine	2	Wetland of international interest and strategic importance for protection of wild birds Protects 54 bird species of the Nature Directives and 8 habitat types of the Habitats Directive
SCI	IT9150022	Palude dei Tamari	3	Protects 14 bird species of the Nature Directives and 2 habitat types of the Habitats Directive (Mediterranean temporary ponds, and Southern riparian galleries and thickets)

** Site of Community Importance, ** Special Protected Area*

3.4.3 Palude di Cassano wetland (KP 0 – KP 1)

Palude di Cassano is a wetland located immediately north of the pipeline route at KP 0 – KP 1, in a large karst depression in the vicinity of the pipeline route. Palude di Cassano is under environmental protection through the Melendugno Municipality Plan.

3.4.4 Other Areas of Significance

Other identified areas of significance within the Regional Area (i.e. the Province of Lecce) include:

- Regional Parks
    - Costa Otranto – S. Maria di Leuca e Bosco di Tricase

  - Litorale di Ugento
  - Palude e Bosco di Rauccio – Sorgenti Idume
  - Porto Selvaggio e Palude del Capitano
- State Reserves
  - Le Cesine
  - San Cataldo
- Regional Reserves
  - Palude del Conte e Duna Costiera.

Whilst these areas of significance are all located within the regional area, they are not considered to be in the area that will be affected by the Project. Any Project works within these sites are not expected and should be strongly avoided.

3.5 Specific requirements for protected areas

3.5.1 Natura 2000 sites

Regarding the Reta Natura sites near to the areas of earth movement:

- construction work in these areas will not take place during the reproduction/nesting period of protected species of fauna (IT0718)
- CONTRACTOR will take measures not to disturb fauna in these areas (IT0719).

3.5.2 Palude di Cassano wetland (KP 0 – KP 1)

CONTRACTOR will implement a Wetland Monitoring Plan to monitor and record the water quality for the “Palude di Cassano” wetland area (KP 0 - KP 1) (IT0311) during the construction phase of the Project, in accordance with the Onshore Compliance Monitoring CCP (IAL00-RSK-601-Y-TTM-0006).

The Wetland Monitoring Plan will be developed by CONTRACTOR as part of the Onshore Ecological Management ESIP, to be accepted by the COMPANY prior to commencement of construction. The Wetland Monitoring Plan should include, as a minimum, the following information:

- the range of parameters to be monitored (ensuring that a sufficient range of physio-chemical parameters are monitored to provide a robust overview of water quality)

- the locations where monitoring is to take place
- the frequency of monitoring.

Should a significant decline in the water quality of the Palude di Cassano wetland be observed, CONTRACTOR will inform the COMPANY in a timely manner, and will undertake appropriate measures to establish the cause of this decline. CONTRACTOR will then put in place appropriate measures to mitigate against any further decline and/or improve the current water quality, as far as is practicable.

3.6 Construction management

Before the start of any construction activity, CONTRACTOR will ensure that it has an up-to-date COMPANY-accepted Onshore Ecological Management ESIP and request the latest revision of:

- the Ecological Management Plan
- the Onshore Ecological Management CCP (AAL00-RSK-601-Y-TTM-0004 (i.e. this document))
- any onshore constraints maps that the COMPANY may have produced.

3.6.1 General requirements

The following requirements are applicable to construction activities on all areas of the Project, including but not limited to the pipeline route, access roads, PRT site, and block valve site. This is in additional to the other requirements stated elsewhere in this CCP.

CONTRACTOR will implement the following general mitigation measures:

- avoid where possible any important sites (breeding, feeding, nesting, etc.) for species, as identified/communicated to the workforce by the environmental coordinator, throughout the construction period, informed by the COMPANY and CONTRACTOR's pre-construction ecological surveys/monitoring (see Section 3.1)
- use directional lighting
- provide appropriate litter collection facilities as inspected by the environmental coordinator
- use screens around work areas as buffers to visual/light/noise sources

- night-time work should be avoided. In exception circumstances where this is not possible, CONTRACTOR shall limit night working and minimise the use of lighting along the corridor, especially near wildlife habitats (e.g. woodland, water bodies)
- provide ecological awareness information and educational material to all stakeholders. A list of key stakeholder groups and appropriate measures of engaging with then is included in the Stakeholder Engagement Strategy (TAP-HSE-ST-0009).

Regarding habitat loss/degradation and habitat fragmentation CONTRACTOR will:

- where possible, site permanent infrastructure on unused land of no particular ecological value
- take no construction materials from the surrounding environment unless approved by the responsible authority
- on pipeline route sections through open land habitats important for breeding birds CONTRACTOR will undertake the following:
    - to enable works during the breeding season, birds will be discouraged from breeding in these areas by installing plastic bands (e.g. warning tape) or flags that flutter in the wind before bird breeding season starts (i.e. before March 1st)
    - in the exceptional case that work sites are opened up during the bird breeding season (March – July) without above measures having taken place, pre-vegetation clearance surveys will be undertaken by qualified ornithologists (to be employed by CONTRACTOR and approved by the COMPANY)
    - should nests of species of conservation concern (i.e. species listed by the Bern Convention, EU Bird Directive or Italian National law) be located in the working strip, the strip shall be optimized so that no works will be carried out within a 25 m buffer of the nest site until chicks have fledged from the nest or it is abandoned
- make minor adjustments to the route (micro-siting of the route) in order to reduce potential negative impacts to the surrounding biodiversity taking into account known flora, fauna and habitats, particularly those identified as being sensitive. This is particularly important where areas of European Priority Habitats and designated sites are affected. All required minor re-routing or micro-routing within the approved construction corridor may be undertaken by CONTRACTOR only after consultation with the COMPANY
- consider habitat compensation measures where required to replace permanently lost and damaged habitats. This may include new habitat creation, restoration of damaged habitats and habitat enhancement. The identification and development of “compensation

areas" shall be the responsibility of the COMPANY (see the Onshore Erosion Control and Reinstatement CCP (IAL00-RSK-601-Y-TTM-0003) and the Italy Biorestoration Guidance and Preliminary Specification (IAL00-RSK-601-Y-TSP-0001))

- in relation to the ascertained interference of the construction track necessary for the construction of the ground methane pipe with Pseudo-steppe (priority habitat cited in Dir. 92/43/EC – Annex I, cod. 6220: Pseudo-steppe with grasses and annuals of the *Thero-Brachypodietea*); Holm oak forests (Habitat of Community Interest cited Dir. 92/43 EC – Annex I, cod. 9340: *Quercus ilex* and *Quercus rotundifolia* forests):
    - the width of the working strip must be reduced to 18 m (IT0713)
    - the pipe storage plots must be set up outside the areas involving the above habitats (IT0714).

Regarding species loss, disturbance and displacement CONTRACTOR will:

- mitigate against the loss of flora species. The mitigation hierarchy for floral species of conservation concern within the working strip will be:
    - FIRST PRIORITY: avoid by fine-tuning the route (CONTRACTOR responsibility)
    - SECOND PRIORITY: translocate to suitable nearby habitat (COMPANY responsibility pre-construction, CONTRACTOR responsibility during construction)
    - THIRD PRIORITY: propagate for planting post-construction (CONTRACTOR responsibility, for more information see the Onshore Erosion Control and Reinstatement CCP (IAL00-RSK-601-Y-TTM-0003))
    - FOURTH PRIORITY: develop off-set mitigation measures (COMPANY responsibility, for more information see the Onshore Erosion Control and Reinstatement CCP (IAL00-RSK-601-Y-TTM-0003) and the Erosion Control and Reinstatement Plan) (IT0303)
- relocate any sensitive/protected biota newly identified during construction where possible to do so
- relocate any priority plant species directly affected by the Project works to a suitable nearby habitat at the end of the growing season (IT1004)
- reduce vehicle speed while travelling on all construction roads (20 km/h on the pipeline lane, for other access roads limits will be established by the Onshore Traffic Management Plan (TMP) (see the Onshore Community Safety and Security CCP (IAL00-RSK-601-Y-TTM-0009))
- prohibit the capture or killing of fauna species

- include monitoring of impacts on flora and fauna at locations identified by the COMPANY or CONTRACTOR as being sensitive (see the Onshore Compliance Monitoring CCP (IAL00-RSK-601-Y-TTM-0006).

CONTRACTOR will adopt best construction site practices to minimise the risks of adverse effects on neighbouring habitats/species from construction activities (dust, noise, waste disposal etc.). This will include the provision of appropriate toilet and litter collection facilities as inspected by the environmental coordinator..

3.6.2 Site clearing and access

CONTRACTOR will employ the following mitigation strategies to reduce the potential ecological impact during clearing and site preparation for all land-based work:

- minimise the cleared areas, restrict clearing to the marked boundaries and preserve natural vegetation where possible
- adult trees of a substantial size (over 30 cm trunk diameter) of a species native to Italy must be avoided/protected by the Project. Where this is not practicable, the tree must be relocated to an area which is similar to that from which it was removed (IT0655)
- undertake vegetation clearing (of trees, bushes, etc.) of pipeline working strip and work areas before or after the vegetation season, i.e. before 1 March or after 30 September
- fell trees into the surveyed clearing limits and recover all felled or leaning trees that inadvertently fall into the adjacent undisturbed vegetation, provided that further disturbance into the adjacent area can be avoided
- salvage all merchantable timber in accordance with regulatory requirements and stockpile non-merchantable timber for re-use or disposal
- ensure no material is pushed or stockpiled beyond the designated boundaries of work sites during clearing activities
- confine road construction works to the road working strip where practically possible and follow existing tracks and trails where possible during road construction and upgrades. Where a road (temporary or permanent) is constructed for the Project in an area where olive trees grow, the width of the road must be reduced to 18m or less (IT0658)
- restrict access to woodland areas during and following construction.

In habitat areas identified as being sensitive by CONTRACTOR or the COMPANY, CONTRACTOR will employ measures to discourage nesting activity by using flags or tape. Where this does discourage breeding, vegetation removal can occur (following a pre-vegetation removal check) at any time of the year unless wider disturbance is identified as a key issue.

3.6.3 Topsoil stripping, grading and construction

Disturbance to native vegetation and wildlife habitat shall be avoided or reduced to the greatest extent practical through the application of appropriate management procedures. CONTRACTOR will implement the following measures to reduce the ecological impact of topsoil stripping, grading and construction activities:

- not start grade cuts within two meters of standing trees to protect the root system. No graded material shall be stockpiled on tree roots
- where feasible, reduce grading topsoil from the construction area at watercourse approaches and grade soil away from the watercourse to reduce the risk of material entering the watercourse
- conduct grading adjacent to the wetland away from the wetland to the extent practical to reduce the risk of sediment and other material entering the wetland
- stockpile soil in a manner that does not impede the movement of wildlife and vehicles across the construction area. Gaps in the stockpile shall be left to allow wildlife passage
- ensure no material is pushed or stockpiled beyond the designated boundaries of work sites during grading, topsoil stripping or any other construction activity
- retain passages for fauna species for as long as possible across the pipeline corridor, and reinstate passages immediately following pipe section completion
- where appropriate, install temporary or permanent provisions for fauna to cross the working strip/ access roads using underpasses, tunnels or other measures
- incorporate trench plugs in all trenches. The pipeline trench and other open excavations will be inspected for trapped animals at the start of each day, and the animals released by an experienced wildlife handler before the start of construction activities (IT0315), under the supervision of the environmental coordinator
- pipe sections and lengths of welded pipeline will be capped to prevent entry of faunal species (IT0316)
- reduce the working strip where appropriate:
    - reduce the working strip to 18 m when crossing olive groves (IT0700, IT0096)

  - reduce the working strip to 18 m when crossing wooded areas (IT0698)
  - reduce the working strip in any previously identified sensitive habitats, or sensitive habitats identified during final route refinement, to the degree appropriate
- where ponds are located, efforts will be made to avoid them. Where this is not possible habitat will be removed outside of the breeding season and all efforts to remove any amphibians present, especially Italian crested newt (*Triturus carnifex*) (LC), Italian newt (*Triturus italicus*) (LC), Appenine yellow-bellied toad (*Bombina pachypus*) (EN) and green toad (*Bufo viridis*) (LC), will be made as well as provisions for alternative ponds for trans-located species to be put in.

Additional topsoil stripping and grading requirements are included in the Onshore Erosion Control and Reinstatement CCP (IAL00-RSK-601-Y-TTM-0003).

3.7 Wetland construction

CONTRACTOR will develop procedures within the Onshore Ecological Management ESIP to minimise ecological impacts on wetland locations taking site-specific conditions into account.

3.8 Watercourse crossing construction

It is not anticipated that any watercourse crossings will be required in the onshore areas affected by the Project in Italy. However, in the event that watercourse crossings should be required (for example in the event of a re-routing), CONTRACTOR shall implement the ecological requirements specified below.

The protection of fish and the ecology of watercourses is a key priority of the Project. Watercourse crossings in this CCP are primarily concerned with pipeline working strip and access road crossings.

CONTRACTOR will:

- locate staging areas at least 30 m away from watercourses where topographic conditions allow
- maintain a 30 m vegetated buffer zone on watercourse banks until immediately prior to construction of the watercourse crossing, where practicable

- make all possible efforts to remove amphibians where amphibian species are present, especially Italian crested newt (*Triturus carnifex*) (LC), Italian newt (*Triturus italicus*) (LC), Appenine yellow-bellied toad (*Bombina pachypus*) (EN) and green toad (*Bufo viridis*) (LC), as well as other species including common toad (*Bufo bufo*), Italian tree frog (*Hyla intermedia*) (LC) and edible frog (*Rana esculenta*) (LC)
- utilise sediment curtains to prevent dispersion of sediment plume during in-watercourse and watercourse bank works, and undertake watercourse crossings during the dry season or low flow conditions where practicable.

CONTRACTOR should also refer to the following CCPs which contain requirements to be implemented when crossing watercourses:

- Onshore Pollution Prevention CCP (IAL00-RSK-601-Y-TTM-0002)
- Onshore Watercourse Crossing CCP (IAL00-RSK-601-Y-TTM-0007)
- Onshore Erosion Control and Reinstatement CCP (IAL00-RSK-601-Y-TTM-0003).

3.9 Invasive species

CONTRACTOR will not intentionally introduce or release any alien species into native habitats and will exercise diligence to prevent accidental or unintended introductions of alien species. Procedures will be developed to avoid, monitor and control invasive species. CONTRACTOR shall develop a monitoring plan to record invasive species in the Project area (IT0305) (both terrestrial and aquatic) following IPIECA guidance document “Alien invasive species and the oil and gas industry. Guidance for prevention and management” (www.ipieca.org/publication/alien-invasive-species-and-oil-and-gas-industry). This shall include an assessment of the risk of introducing an alien species that may have significant adverse impacts on biodiversity and the identification of measures to minimise the potential for release.

CONTRACTOR shall not use or release Genetically Modified Organisms (GMOs) to the environment without approval being given by the competent authorities, or where the local authority has declared itself as GMO free.

CONTRACTOR shall ensure that any seed mix used for biorestoration is certified free from noxious and alien invasive species.

3.10 Clean-up and restoration

CONTRACTOR will refer to the Onshore Erosion Control and Reinstatement CCP (IAL00-RSK-601-Y-TTM-0003) for the general procedures for clean-up and restoration of all construction and temporary areas.

In addition, CONTRACTOR shall install wildlife movement corridors and barriers at locations indicated by the COMPANY during the reinstatement phase of the Project.

4 Training

The training requirements relating to ecological management can be found in the Onshore Employment, Training and Worksite Management CCP (IAL00-RSK-601-Y-TTM-0012).

5 Monitoring and inspection

The monitoring and inspection requirements relating to ecological management can be found in the Onshore Compliance Monitoring CCP (IAL00-RSK-601-Y-TTM-0006).

6 Related documents

The following is a list of documents that, amongst others, have content relevant to this CCP:

- Contractor's ESMS Framework Document (CAL00-RSK-601-Y-TTM-0001)
- Onshore Resource Management CCP (IAL00-RSK-601-Y-TTM-0001)
- Onshore Pollution Prevention CCP (IAL00-RSK-601-Y-TTM-0002)
- Onshore Erosion Control and Reinstatement CCP (IAL00-RSK-601-Y-TTM-0003)
- Onshore Additional Land Take CCP (IAL00-RSK-601-Y-TTM-0005)
- Onshore Compliance Monitoring CCP (IAL00-RSK-601-Y-TTM-0006)
- Onshore Watercourse Crossing CCP (IAL00-RSK-601-Y-TTM-0007)
- Onshore Community Safety and Security CCP (IAL00-RSK-601-Y-TTM-0009)
- Onshore Employment, Training and Worksite Management CCP (IAL00-RSK-601-Y-TTM-0012)

- Erosion Control and Reinstatement Plan
- Ecological Management Plan
- Compliance Assurance Plan
- Stakeholder Engagement Strategy (TAP-HSE-ST-0009)
- Specification for Reinstatement (IAL00-SPF-000-C-TRH-0004)
- Italy Biorestoration Guidance and Preliminary Specification (IAL00-RSK-601-Y-TSP-0001)
- Specification for Working Strip Preparation and Maintenance (IAL00-SPF-000-C-TRH-0005)
- IPIECA. 2010. Alien invasive species and the oil and gas industry. Guidance for prevention and management. (www.ipieca.org/publication/alien-invasive-species-and-oil-and-gas-industry)
- Council Directive 92/43/EEC. 1992. On the Conservation of Natural Habitats and of Wild Fauna and Flora.