

## Environmental and Social Data Sheet

### Overview

Project Name:	TAP – Trans Adriatic Pipeline
Project Number:	20140596
Country:	<i>Greece, Albania, Italy</i>
Project Description:	The Project concerns the construction and operation of the Trans Adriatic Pipeline (TAP), representing the part of the Southern Gas Corridor, which starts at the Greek/Turkish border and extends across Albania to Italy over a total length of some 870km.
EIA required:	yes
Project included in Carbon Footprint Exercise <sup>1</sup> :	yes

(details for projects included are provided in section: “EIB Carbon Footprint Exercise”)

### Environmental and Social Assessment

The Project entails the construction and operation of the Trans Adriatic Natural Gas Pipeline Project (TAP) from the Turkish-Greek border to Southern Italy via Greece, Albania and the Adriatic Sea. TAP is part of the Southern Gas Corridor<sup>2</sup> development, linking Azerbaijan’s Shah Deniz 2 gas field to Turkey and Europe.

The TAP section consists of the construction of a gas pipeline of 878km, connecting with the Trans Anatolian Pipeline (TANAP) at the Greek-Turkish border near Kipoi - Greece, then crossing Northern Greece, Albania and the Adriatic Sea before coming ashore in Southern Italy to connect to the Italian gas network. The pipeline is buried along its entire length; however, the pipeline system requires a number of above-ground installations of varying types:

- Two compressor stations, one near Kipoi in Greece and one close to Fier on the Albanian Coast;
- A pigging station near Serres in Greece;
- A metering and pigging station near Bilisht in Albania;
- Onshore block valve stations in Greece and Albania and on either side of the Adriatic Sea;
- A pipeline receiving terminal (PRT) near Lecce in Italy;

<sup>1</sup> Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO<sub>2</sub>e/year absolute (gross) or 20,000 tons CO<sub>2</sub>e/year relative (net) – both increases and savings.

<sup>2</sup> The Southern Gas Corridor comprises the following components : i) the Shah Deniz 2 gas field, ii) the South Caucasus Pipeline and its expansion through Azerbaijan and Georgia to Turkey, iii) the construction of TANAP through Turkey to Greece and iv) the construction of the Trans-Adriatic Pipeline (TAP) through Greece, Albania and the Adriatic Sea to Southern Italy.

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Given the scale and multitude of environmental and social aspects of the Project, it has faced a variety of complex environmental and social challenges. The promoter is committed to achieving sustainable outcomes and striving to ensure that the Project is constructed and operated to international good practice and Lenders' Environmental and Social Standards and requirements.

The pipeline route passes through a wide range of land-use types impacting around 21, 000 parcels of land utilised by local households. Social and environmental issues encountered, which are typical of this large and complex infrastructure, included: limited regional routing options due to complex environmental, social, geo-hazard and geo-political constraints; potential significant impact on sensitive flora and fauna habitats terrestrial and marine as well as on surface and groundwater resources; temporary land acquisition under complex land tenure systems; disturbance to local livelihoods and activities affecting a large number of people; community safety; local employment; potential impacts to marginalised and vulnerable groups (including ethnic minorities, women and the elderly); and the implementation of a major public consultation and engagement including disclosure programme.

The Project has attracted intense scrutiny by stakeholders, press, and civil society including international NGOs. The Project has also been subject to a large number of complaints from Project-affected communities and NGOs, including to the EIB, and opposition to the Project notably in Greece and Italy.

## **Environmental Assessment**

An ESIA for each of the three countries was prepared during 2012-2014, as required by the respective national legislation and EU requirements and the development consents were issued in January 2013 (Albania) and September 2014 (Greece and Italy). Further ESIA amendments have been submitted and approved to support Project changes notably with regards to changes in the right-of-way (ROW). The scope of the impact assessments includes the pipeline route defined as a 50m (for cultural heritage), 500m (for the environmental baseline) and 2 km (for the socio-economic baseline) wide corridors, all related infrastructure, and an alternative route analysis.

Even though the level of the ESIA's go beyond national requirements in the three host countries, their scope did not fully address the Lenders' (which include the EIB) requirements, including the requirements with respect to cumulative impacts, biodiversity (marine and terrestrial) and critical habitat assessments, erosion and geo-hazards, stakeholder engagement and Environmental, Social, Health and Safety (ESHS) management systems and contractor management. Therefore, supplemental impact studies, reports and management plans were required. Substantial coordination amongst Lenders was necessary to establish the scope of each of the supplemental information, to take into consideration the ESHS and labour policies of each financial institution. Given the timing of the due diligence and the Project schedule, the supplemental information focused mainly on the impacts from construction, including environmental and health and safety impacts, biodiversity, labour conditions, and security, as well as social impacts (e.g. compensation for the easement and ancillary facilities), engagement with the communities and social license to operate of the Project. In addition, the EIB due diligence considered the input of various stakeholders both locally and internationally.

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**Compliance with Lenders' Requirements:** Each of the EIB E&S Standards was analysed and the aspects that were not fully addressed with the original documents were covered by the supplemental information in the Supplemental Lenders Information Package (SLIP). Areas of high interest and which were critical for EIB included: (i) environmental, social health and safety and security management systems of the Promoter and its EPC contractors and subcontractors and which include the capacity of the Promoter to manage the Project; (ii) community engagement to be conducted in an appropriate manner so as to resolve some of the opposition to the Project and rebuild trust in a number of communities; (iii) land acquisition and livelihood restoration plan along the pipeline route which provides for procedures to conduct consultations, negotiations and compensation for the acquisition of the easement of the ROW by the Promoter taking into account country-specific social structures; (iv) marine and terrestrial biodiversity protection in line with the mitigation hierarchy; (v) cultural heritage; (vi) monitoring programmes established by the Lenders' group through the E&S advisors for the sections that were under construction at the time of due diligence; and (vii) continuous stakeholder engagement and disclosure of information.

**Project Environmental and Social Standards:** The Project Environmental and Social Standards summarise the national and international standards and guidelines that will be applied to the Project including (i) numeric standards that apply nationally and internationally for air emissions, ambient air quality, surface water (both fresh and marine), noise, soil remediation, etc. indicating those adopted for the Project; (ii) comprehensive description of the minimum requirements necessary to comply with the intent of the relevant International Conventions to which the three countries are party to, all Lenders' Standards and guidelines in place, and (iii) a selection of international practices in those areas where no national standards or Lenders' standards exist.

**Route selection:** The pipeline route selection has been an iterative process based on several analyses using physical, technical, biological, archaeological and social and criteria along with the availability of space for pipeline construction. Upon selection of the preferred route, a route verification process started with the aim of assessing local re-routing through sections that presented greater technical, environmental, social, economic, safety and cultural heritage challenges as well as conflict with other infrastructure in the area. Even though comprehensive consultation was carried out on the selected option, there has not been sufficient feedback to local communities about the pipeline route selection or the alternatives selected in Greece and with respect to the landfalls in Italy and Albania. This has sparked criticism specifically from affected local communities in Greece and Italy.

**Cumulative Impacts:** Upon Lenders' request, the Project prepared a cumulative impact assessment (CIA) within an area of influence (AI) that extended 20km to each side of the pipeline onshore and 50km to the pipeline offshore. This AI included activities and facilities owned, operated and managed by TAP, supporting or enabling activities, assets or facilities owned or managed by others but linked to the Project, unplanned but predictable developments, third party planned developments, indirect and induced impacts and Project associated facilities. The methodology was based on the concept of valued environmental and social components (VECs) and involved a methodical process of identification and assessment of all potential cumulative impacts on the VECs. The CIA followed IFC's Good Practice Handbook on CIA (2013). The cumulative impacts were assessed without additional mitigation. The CIA concluded that overall no significant cumulative effects would arise from interactions with other activities and developments with the exception to the following VECs in (i) the Agios-Timotheos-Kioupia protected area, (ii) the South Evros forest, (iii) the Loutros tributary river corridor, (iv) the Strymonas river, (v) the Vithkuq-Oshovice area and the Osumi Valley, and (vi) the Semani-Pishë-Pro area. Here, further detailed assessments would be

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required to better understand the impacts and to inform the Biorestitution, Ecological Management plans as well as the Offset Strategy. Limited public consultation took place on the CIA and was limited to government entities.

**Associated infrastructure and Facilities:** Taking a risk-based approach, the EIB has evaluated the environmental and social risks of key upstream and downstream projects associated with TAP (Shah Deniz 2 Gas Field, the South Caucasus Pipeline and its expansion through Azerbaijan and Georgia to Turkey, TANAP, SNAM Rete Gas) based on the residual potential impacts, after implementation of the existing or proposed management strategies, systems and plans. All publicly available E&S documentation was reviewed as well as additional information made available to the Bank by respective shareholders and IFIs supporting the associated projects. The ESIA's for the associated projects were prepared, in accordance with good international practice by local and international consultants in consultation with local authorities and appropriate engagement of stakeholders. Specifically with respect to the Shah Deniz 2 Gas Field, an environmental and social compliance audit was carried out in line with EBRD Performance Requirements and ADB Safeguard Policies and a corresponding Environmental and Social Action Plan was developed. No non-compliance to their respective E&S policies and standards were identified. With regards to the TANAP project, the project was appraised by the World Bank in line with World Bank Operational Policies, the EBRD in line with its Performance Requirements and the EIB in line with its E&S Standards. Any identified gaps were filled and a corresponding environmental and social action plan was developed and formed part of the contractual documentation.

Where the ESIA's have been undertaken, these have been generally found to be in line with EIB requirements. In all these projects there is little to no physical displacement and most of the expropriation is temporary for the duration of the construction period. Permanent land acquisition is limited to above-ground installations. In all cases land acquisition and livelihood compensation plans have been developed and are publicly disclosed on the respective websites. Public disclosure and consultation plans have been developed which describe the stakeholder consultation procedures as part of the different ESIA processes and throughout construction and operation of the projects. All projects have internal grievance mechanisms in place.

**Construction impacts:** During the construction of the pipeline, most of the environmental impacts will be temporary and can be mitigated with standard environmental management procedures for construction complemented by specific construction methods for river crossings, restoration of sensitive ecological areas, and other specific procedures for the protection for endangered and vulnerable species. Adequate management plans following international standards for these activities have been developed and are in the process of being finalised. These plans are a requirement for the Project and are included in the overarching Environmental and Social Management Plan.

The EPC contractors' environmental and social implementation plans as well as the contractor management plans must comply with the above mentioned plans. As the plans are being finalised while construction is on-going, a gap in implementation has been identified.

The risk of slope instability, erosion and sedimentation are also potential impacts from pipeline construction. These impacts are typical of this type of construction and may be significant if not properly managed. A specific Erosion Control and Reinstatement Plan has been developed for the Project which includes the necessary preventative and mitigation measures to ensure that impacts are temporary and minimised. There are potential natural hazards associated with the geological active conditions of the Project area, notably in

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Greece and Albania. These have been assessed and all structures have been designed to be in line with the required international seismic standards.

**Ambient air quality:** is expected to be affected by dust emissions from construction activities. The major sources of dust emissions during construction are: excavation, blasting and earthworks; loading/unloading, handling, storage and transport of materials or wastes; and vehicle movements. Emissions from vehicle exhausts used for transport of workers, construction material, vehicles and equipment will be minimised through good practices e.g. proper maintenance, restriction on idling and running of vehicle engines only when required.

Dust suppression measures will be implemented, as identified in the ESIA, including: mist spraying on dusty areas, suspending earthworks in high winds, covering payloads, appropriate storage of loose/friable materials, covering excavated piles and watering using collected rainwater and construction wastewater.

With regards to operations of the PRT and compressor stations, air emission modelling has been carried out to ensure that air quality limits are within the EU and national requirements at the emission source and receptor locations.

**Water quality and usage:** Surface water quality may be affected by sedimentation due to river crossing activities and the release of sewage and wastewater. Construction activities at the river crossings will be limited to periods of low flow and mitigation measures set forth in the ESIA will be implemented, including pumping operations to avoid destruction of the river bed. In addition, 115 watercourses will be crossed using trenchless methods so as to minimise the impacts on water quality. Sewage and wastewater will be treated in wastewater treatment plants established in the Construction Camp Sites.

The Project's largest freshwater needs will be related to pipeline hydro-testing. The water will be drawn from local watercourses. Guiding principles as well as contractual requirements for the contractors have been put in place to limit water abstraction and discharge to surface water sources with larger flows, to ensure consideration of seasonal changes, to re-use hydro-test water and to monitor discharge quality. Measures will also be put in place to prevent the introduction of invasive species between different watercourses.

**Noise:** The main sources of ambient noise during construction will be ground improvement activities, rock blasting, horizontal directional drilling, hydro-testing and pipeline pigging and drying. In areas where there is a risk of noise nuisance, TAP will conduct noise and vibration monitoring during construction and apply mitigation measures such as the restriction of construction activities to daytime. TAP is requiring contractors to report on noise and vibration prediction and associated control activities.

During operation, the only regular sources of noise are the compressor stations and the pipeline receiving terminal (PRT). A noise control programme supported by noise modelling has shown that noise levels will be within the prescribed national limits. Pre-operational and operational monitoring will be carried out to confirm the noise modelling predictions.

Piling works and the installation of the cofferdam in nearshore and intertidal areas will produce underwater noise which has the potential to impact fish, marine mammals and turtles. Assessment modelling of underwater impact has been undertaken by TAP to inform its assessments and mitigation measures. TAP will produce a Marine Mammal Mitigation Protocol to manage underwater noise, amongst other things.

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**Biodiversity:** TAP will pass through areas of natural, semi-natural and modified habitats with several features of biodiversity value, both onshore and offshore. Gaps were identified in the biodiversity studies carried out under the respective ESIA's notably with respect to the assessment of critical habitats. Several additional biodiversity field studies have been undertaken in all three countries. These studies provided additional data on flora, large carnivores, avifauna, aquatic and marine ecology as well as reptiles and amphibians. The Project is not expected to result in permanent adverse impacts on the critical habitat, on the biodiversity values or species of special concern (SCC) and will not significantly convert or degrade critical natural habitats or natural habitats over the long term. With regards to impacts on identified Natura 2000 sites in Greece and Italy, the respective competent authorities, through the application of the Habitats Directive and as part of the development consent process, have concluded that there would not be any significant effects on the sites.

A conservative approach to critical habitat identification was adopted. The pipeline routing exercise was carried out to avoid critical natural habitat as much as possible, although, given the linear nature of the Project, some areas were unavoidable. According to the studies, potential impacts on these habitats and the identified SCC are primarily limited to temporary impacts during construction (i.e. land and vegetation clearance, noise and vibration, presence of workforce, etc.). With regards to sensitive species, although the studies surveys identified a number of flora and fauna species listed as CR, EN, VU, and NT species, none of them has a distribution restricted to the pipeline RoW or its area of influence.

However the Supplementary Ecological Management plan (SEA) in its present form falls short of being fully in line with EIB's Standard on Biodiversity. Residual impacts on critical habitats have not been adequately quantified and the viable offsets to compensate for these impacts to achieve No Net Loss of natural habitats and a net gain for critical habitats. TAP will complete further studies to ensure that NNL/Net gains are achieved following completion of works and reinstatement. The Ecological management plan, the SEA, the Critical Habitat Assessment and the Bio restoration Plan have been finalised.

Protection of all habitats identified as medium and high sensitivity according to Lenders Standards during construction and its appropriate restoration by TAP and the contractors are provided for in the CMPs, Erosion Control and Reinstatement Plans, the bio-restoration plans and the overarching ecological management plans.

The Project will develop together with national and local stakeholders and experts country-specific Biodiversity Action Plans including for the offshore section. These plans will provide a detailed roadmap for the long-term management and monitoring of each of the priority biodiversity features in the Biodiversity Offsets Management Plan.

**TAP's off-shore section:** TAP has completed the initial environmental baseline surveys, sampling sediment, water and benthos. The environmental surveys show a deep bathymetry, comprised of muds and sands. The environmental baseline surveys found no critically sensitive seabed features, with macro-fauna species richness and diversity to be low. The impacts to the plankton and benthic invertebrate and fish communities and their habitats from dredging are rated as moderate during the actual dredging activities. Because the sediments in the area predominantly are sand material instead of fine sediments, the impacts of dredging (namely turbidity) are likely to be limited and of short duration. Marine mammal and turtles including sea birds were observed during the surveys and will be incorporated into a monitoring programme and the contractors' management plans. Water and sediment quality was found to be generally good. Sediment modelling has been completed and a robust Marine Monitoring Programme is in place. TAP will complete the surveys of the marine environmental seabed and water column and develop a marine ecological management plan with the associated critical habitat assessment. In addition TAP will finalise the Marine

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Mammal Mitigation Protocol which aims to identify and mitigate any significant changes in the marine environment.

Other potential risks during construction of the off-shore section include water contamination by accidental hydrocarbon spills (e.g. fuel, grease and oils) or other substances from work barges and ships, equipment and machinery used. These impacts can be generally avoided by standard operating procedures such as using biodegradable fuels and water quality monitoring during the construction phase.

**Cultural Heritage:** Cultural heritage baseline surveys and assessments were conducted as part of the ESIA process, and culturally sensitive areas were avoided to the extent possible for the route selection. TAP has engaged with in-country archaeological experts throughout this process. The establishment of chance find procedures for any unforeseen finds has been developed in line with host country national laws and applicable Lenders' Standards.

## Social Assessment

**Land acquisition and livelihood restoration:** A key principle in land acquisition is to try to avoid and minimise the physical displacement of households to the greatest degree possible. TAP successfully achieved this objective through careful initial planning that avoided all villages and towns or by making subsequent route changes (some of which required an addendum to the EIA) to avoid any homesteads or farms that were encountered in finalising the pipeline ROW.

The Project will affect approximately 45,000 landowners and land users living along the pipeline corridor. The land easement and acquisition (LEA) process was conducted in accordance with national laws and regulations and with international standards including those of the EIB. TAP will ensure that affected persons are all treated with respect, assisted through the legal process, and compensated fairly. Much of the LEA programme has now been completed, with additional LEA work currently being conducted on account of re-routings and additional land required. Overall, it involves approximately 21,000 plots of land: 10,200 in Greece, 10,300 in Albania and about 200 in Italy. The land acquisition and compensation was not an easy process as it required TAP to address mostly temporary impacts to the livelihoods and activities of a very large number of household complicated by complex land tenure systems and social structures, notably in Albania. A relatively small proportion of land was required permanently for above-ground installations such as compressor stations, pipeline receiving terminal and block valve stations and access roads. Most of the land acquisition required is temporary for construction purposes and will be returned to the original land-right owners following the implementation of reinstatement measures.

The vast majority of adverse livelihood impacts of the Project's land acquisition activities will be short term and derive primarily from disturbance caused by construction. Impacts include temporary loss of and reduced access to agricultural land, loss of standing crops, and impacts on community assets and infrastructure, including irrigation systems.

TAP has developed a Livelihood Restoration Plan (LRP) which addressed livelihood impacts caused by the project LEA process. Apart from the cash compensation already made for impacts on land, the livelihoods (through its Livelihood Assistance & Transitional Support (LATS) programme) will be restored to pre-project levels and, where possible, improved through a variety of additional benefits, such as employment opportunities, skills training, agricultural input support packages, support to alternative enterprises to diversify livelihood

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income sources, access to services such as health and education, support to women's groups and fisheries etc.

TAP is also implementing a programme for investing in community development to add value beyond the mitigation of impacts or the creation of Project-specific jobs in the Project's area of influence through the promotion of sustainable social and economic development through linkages with SMEs in the region. The amounts for these programmes have been agreed in the respective Inter-Governmental Agreements for each of the three countries. The programmes will be implemented during the construction phase. It is however recommended that this budget be spread into the operations phase.

**Vulnerable groups:** An assessment of vulnerable groups has been carried out, with the main groups identified being households with reported income below the national poverty line, whose land is highly impacted, aged (widowed/living alone) with no other land holdings, limited assets, poor access to basic infrastructure/services, households with a member having health problems, landowners with unviable lands. Specific measures to address gender dynamics and the needs of the poor have been put in place through stakeholder consultation and communication, livelihood restoration and land acquisition. Landowners temporarily left with unviable lands (such as too small parcels, or inability to access lands during the construction period), have had their compensation reviewed on a case-by-case basis, and guidance criteria have been developed to identify cases where additional compensation should be paid out.

**Grievance management:** An effective and well-functioning grievance mechanism is an essential part of managing community relations. TAP developed a separate grievance process for each country to manage complaints arising from the Project related to land acquisition, livelihood restoration, and other environment and social-related matters. In addition, a parallel grievance process was developed by TAP construction contractors.

The grievance mechanism was introduced to the Project affected persons during the ESIA consultations. Grievance filing methods include a hotline number, local Project office contacts, e-mail, website complaint form, speaking to a community liaison coordination or social field monitor etc. Grievances can also be reported during various consultations and periodic visits by community liaison officers to affected communities. Both TAP and construction contractor staff have been trained on public consultation and using the grievance system. The temporal scope of the Grievance Procedures includes construction and operation stages of the Project.

To ensure that the grievances are adequately addressed and responded to in a timely manner, TAP has established and integrated into its ESHS System a comprehensive online stakeholder interaction database to maintain lists of stakeholders, record communication with stakeholders, and register, track and report on grievances.

TAP has received and processed grievances in all three countries, however where there is significant opposition to the Project, it is interesting to note that many of the complainants opted not to use the TAP's general grievance procedure nor the grievance procedure under the LEA programme. TAP was therefore requested to review its specific procedures and KPIs for participation, effectiveness, resolution, recurrence, reduction and influence and provision of trend monitoring. In order to render the mechanism more effective the focus was specifically on review and resolution of complaints. TAP will be required to commission an independent review of the implementation of its grievance management procedure.

**Occupational Health and Safety:** The OHS policies and procedures to manage construction have been reviewed and are considered to be comprehensive and in line with EIB

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requirements. TAP will nevertheless inform the Bank on any significant event including the corrective measures taken or planned to remedy the situation. OHS procedures for operations will be updated as part of the update and review of the ESMP for operations.

**Community health and safety:** Potential risks to community health and safety include traffic accidents, construction and operations accidents such as explosions and communicable diseases and other health and safety issues related to influx of workers during construction phase.

For the construction phase, Environmental, Health and Safety Plans are in place for each construction contractor, with the purpose of reducing risks and impacts on local communities from land preparation and construction activities. Protection zones have been enforced along the RoW, where no other construction will be permitted to minimise the risk of accidents. Further management practices and requirements have been described in the Waste Management and Environmental Health and Safety Plans. The plans clearly identify roles and responsibilities, relevant regulatory requirements, training and procedures including training on interaction with the communities and cultural awareness to comply with the commitments related to community health and safety in the ESIA.

A key potential impact of the operational phase is linked to the safety risks to communities living or working along the RoW. Potential failure of the pipeline during the operational phase may result in unsafe conditions (blast, vapour cloud, among others). These risks are highly unlikely to materialise, given the safety features of the pipeline design (natural gas, 100% buried, SCADA system, cathodic protection) and are adequately addressed in the Emergency Preparedness and Response Plans. Despite the limited nature of the actual risk present during operation of a natural gas pipeline, if communities are not well informed about the true characteristics of operations and associated risks, they may have unrealistic fears regarding contamination of soil and water, and potential accidents linked to the pipeline. The Stakeholder Engagement Plans should be a key tool for the management of these issues.

**Security Risk Management:** During the construction period, work areas are fenced or cordoned off and with appropriate warning signs and security personnel are deployed based on a Security Risk Assessment and according to service agreements with contractors. Information campaigns to the local population have been carried out as well as safety awareness campaigns in schools.

TAP's security operations have been outsourced to private third party contractors through the EPC Contractors and are led by TAP security staff. Following a security risk assessment, TAP security personnel are not armed. A comprehensive Security Policy and Security Plan, which includes roles and responsibilities, a code of conduct, procedures on engagement with public security and law enforcement forces, training (including interaction with surrounding communities) and response protocols in the event of security incidents has been developed for the construction phase. TAP's Security philosophy is based on the Voluntary Principles on Security and Human Rights (VPSHR) and the International Code of Conduct for Private Security Service Providers. TAP is also working closely with International Alert for its implementation of the VPSHR. To date, security incidents have been limited to low consequence incidents. Nevertheless, these are reported to the local law enforcement authorities who investigate the incidents.

In the operations phase, the pipeline route will be signed in order to make communities aware of the pipeline route. The above ground installations will be fenced with access control and surveillance to mitigate the risk of unauthorised entry. Additional security measures for the operations phase will be developed as part of the ESMP for operations.

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## Public Consultation and Stakeholder Engagement

TAP has been engaging stakeholders since 2008 through structured, ongoing dialogue, both proactively and as required by law. A wide variety of channels have been used to communicate with stakeholders, including (i) Project offices (information spots, community liaison offices), (ii) information points and public display processes, (iii) one-to-one and small group meetings, in particular with government officials, (iv) community/public meetings, (v) brochures and posters, (vi) TAP website, (vii) social media (viii) electronic media (radio & TV), and (ix) print media (newspapers and publications).

As part of the ESIA process, TAP carried out extensive stakeholder engagement in each country. However, due to logistic and personnel demands of consulting in all three countries along the pipeline route, TAP sub-contracted the consultation and as a result the quality of the consultation in some locations has been weaker. In addition, given the amount of information that had to be provided in a short time, there were inevitably significant information gaps. Overall, across all of the three countries, TAP conducted more than 160 meetings with national, regional and local stakeholders between October 2012 and July 2013.

TAP has developed a Stakeholder Engagement Strategy (SES) which defines the scope and direction of engagement activities during the construction and commissioning phases. Its specific objectives are to (i) describe planned stakeholder engagement (SE) during TAP's construction phase and (ii) ensure regular, accessible and transparent consultation with stakeholders. It provides a framework for the development of constructive long-term relationships based on a two-way dialogue and communication as well as ongoing stakeholder identification, analysis, mapping and prioritisation, consultation and engagement, risk and issue identification, information sharing. The engagement and required follow-up actions are documented. Even with this Strategy in place, the majority of the meetings were with local and technical institutions and engagement with local communities during the ESIA process was limited to socio-economic surveys, focus groups and letters.

Though TAP has carried out considerable amount of stakeholder consultation, specifically related to the land easement process, it has not engaged enough in meaningful consultation resulting in the opposition to the Project in Greece and Italy on environmental matters in particular. The weakness in TAP's engagement process was the inadequate feedback to stakeholders and the transparency in decision-making. It was often not clear to stakeholder how they would be informed about Project decisions and how their views and inputs have been incorporated. As a result, and in order to engage more effectively with opposition in Greece, TAP has had to review its engagement process and is currently implementing the new approach which contains more participatory techniques and methodologies into the process in order to create more opportunities for meaningful interaction between the Project and affected stakeholders. The Bank will require TAP to undertake additional improvements to said approach, including measures stressed upon by Lenders, so as to effectively reduce the risk of an escalation of conflict and improve its social licence in the localities concerned. Regular reporting back to the Bank on progress made will be required of TAP.

This new approach may need to be applied as well to the Italian context where tensions have prevented TAP from carrying out their pre-construction activities and where physical opposition to the Project has already taken place.

## Other Environmental and Social Aspects

**Environmental, Social, Health and Safety Management Systems:** One of the principal requirements for the EIB is the establishment of an ESHS Management System to be followed by the Project at all times, including by the EPC contractors and subcontractors during the construction phase and operation phase. TAP has developed a comprehensive ESHS management system, including management plans, organisational systems and implementing documentation, which constitute the operational backbone of the whole ESMS as required by EIB policies. TAP will be fully responsible for all aspects of the implementation of these plans regardless of the arrangements it may have with its contractors, with respect to performance, supervision and legal liability.

TAP operates an integrated management system which is organised to comply with a number of ISO standards including ISO 29001 (quality management system for product and service supply organisations for the petroleum, petrochemical and natural gas industries); ISO 14001 (environmental); OHSAS 18001 (occupational health and safety) and ISO 9001 (quality). The system and its components will be updated on a continuous basis to reflect new information, and once construction has been completed to reflect the specific requirements of Project operations.

Each construction contractor engaged in TAP is also required to develop an ESHS management system that is designed to manage the ESHS aspects of their activities and implement the Environmental and Social Implementation Plans (ESIPs). The contractor management systems must include the necessary and adequate human and operational resources to implement the ESIPs and to record and report compliance with their requirements, particularly with respect to the applicable key performance indicators established in the corporate documents.

TAP's Management System includes corporate policies for Health and Safety, Environment and Community Relations, as well as a Code of Conduct providing the basic guidelines to assist company employees make legal and ethical decisions in relation to the Project.

**Environmental and Social Route Impact Register:** The ESIA and the SLIP documents provide a wealth of baseline information and impact analysis along with numerous management and mitigation measures that the client has committed to implement. These commitments are scattered across various sections of the documentation and duplicated. Initially TAP experienced difficulty in organising these commitments into action so that the environmental and social management programme could be developed. To overcome this, a comprehensive list of all the commitments has been developed into an Environmental and Social Route Impact Register, clearly laying out each commitment, its original source, clear responsibility for implementation and where in the management plan the commitment would be covered. This is a valuable tool, serving as a link between the ESIA and SLIP documentation and the Management System. It provides a mechanism whereby the commitments made can be followed through to action on the ground by passing down detailed and site specific mitigation controls to the contractors.

**Contractor Management:** The construction phase of the Project carries the highest risk of potential environmental and social impact and unforeseen events. Performance not in line with international good practice by the construction contractors involved in the Project can lead to adverse E&S impacts. Active management by TAP of the contractor performance on

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E&S issues is therefore critically important to ensure the successful outcomes and to prevent expensive corrective action. The amount of time and level of effort required by TAP for effective contractor management was underestimated at the outset of the Project as the contractors did not have a full understanding of all their commitments with respect to E&S management. The contractors did not necessarily appreciate what the E&S requirements entailed in terms of implementation and lacked the capacity to implement the type of management plans required by TAP. As a result, and at the request of Lenders, TAP significantly increased its number of E&S staff on the ground in all three countries and optimised the organisational structure of its ESHS System.

Contractor Control Plans (CCPs) were developed which translated the commitments made in the ESIA documentation into specific actions and responsibilities. Although the CCP mechanism of contractor control is considered a useful tool, these CCPs were not revised taking into account the additional commitments contained in the SLIP documentation. Furthermore, the construction programme was well underway.

As a result TAP was required to put in place effective management controls as well as oversight and assurance processes of the EPC contractors. Notification of changes and reporting processes of E&S and Cultural Heritage (ESCH) changes to the Lenders will be covenanted. These processes have been included in the ESMP.

**Crisis and Emergency Response Plan:** A crisis and emergency response system is in place, including a Project overall Crisis and Emergency Response Plan which defines roles and responsibilities for all crisis and emergency response teams, defines the interfaces and communication between all teams at TAP HQ, country offices, Project offices and contractor organisations and defines the regular training of duty managers and team members. TAP requires that its contractor's crisis and emergency response strategies are aligned with TAP and that these are defined within the contractor's documentation. The procedures are an integral part of the ESMS and OHSAS, and also include specific plans for medical emergencies, and environmental emergencies which have been developed in consultation with national emergency providers and local healthcare facilities. These plans cover all EPC contractors as well as sub-contractors.

The ESMS for operations will include the crisis and emergency response plan for operations.

### **EIB Carbon Footprint Exercise**

When fully operational and running at full capacity, TAP will transport 10 Gm<sup>3</sup> of natural gas per annum. Absolute CO<sub>2</sub> emissions as a result of this Project are estimated at 476 kt CO<sub>2</sub>eq/yr, this is made up of 425 kt CO<sub>2</sub>/yr from combustion of natural gas in the compressor stations and 51 kt CO<sub>2</sub>eq/yr from leakages. The emission factor for combustion of natural gas used for calculation is 56.1 tCO<sub>2</sub>/TJ.

Since domestic natural gas production in the EU is declining faster than demand, imports are expected to increase. For meeting the incremental imports, the baseline alternative to the Southern gas corridor is to increase Russian imports and USA LNG.

Additional Russian imports can be delivered either via the existing transit route via Ukraine, or through the planned pipeline Nord Stream 2. Emissions from the Ukraine transit option are higher compared to TAP (due to the age and design of Ukraine's transmission system). Data for fuel use of future Nord Stream 2 pipeline is not available. However, the per unit fuel use for compression of Nord Steam 2 should be higher than TAP's because of the significantly

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higher design pressure. Thus, for both alternative options of Russian exports (Ukraine transit and Nord Stream 2), TAP's fuel use and relative emissions will be lower. Since exact fuel use of Nord Stream 2 is not known, the conservative assumption taken here is that its relative emissions are at least equal to TAP's, and therefore the most conservative estimate of the relative emissions of the Project compared to the baseline is assumed to be zero (rather than negative).

USA LNG as an alternative incremental import might be more likely given the political decisions to diversify away from Russian imports. However, emissions from importing the same amount of gas via LNG are by some estimates triple those of the Project. Since there are uncertainties as to what the real baseline alternative to imports via TAP would be, the LNG option is omitted here. However, taking the LNG option as the baseline would result in a very high relative emission savings for the Project.

## Conclusions and Recommendations

With the following conditions in place, the Project is acceptable for financing in environmental and social terms.

Prior to Signature:

- TAP provide confirmation from the relevant Greek and Albanian national competent authorities that no protected areas nor sites of conservation importance have been significantly impacted by the Project;
- TAP shall develop and finalise the Environmental and Social Action Plan to reflect agreed internal and external monitoring obligations;
- Shall submit a finalised Offset Strategy acceptable to the EIB for achieving No Net Loss and Net Gain for residual impacts on critical habitats as well as the associated ecological plans;
- Mobilise all efforts and resources towards resolving community trust and social licence issues in Greece, including establishing an Independent Technical Committee and engaging conflict management and alternative dispute resolution expertise;

TAP undertakes to:

- Maintain during construction and operation of the Project an Integrated Project Management Structure consisting of TAP and relevant external and local international experts;
- Ensure that the Project (including all works performed by the contractors) is carried out in accordance with the provisions contained in the ESIA documents, the ESMP and associated management and action plans and the ESAP;
- Finalise the Biodiversity Offset Management Plan associated with the Biodiversity Offset Strategy;
- Develop the in-country Biodiversity Action Plans as well as the Biodiversity Action Plan for the offshore section.

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- Develop a marine ecological management plan with the associated critical habitat assessment, the Marine Monitoring Programme including the Marine Mammal Mitigation Protocol;
- Maintain independent third-party monitoring firms, with staffing and terms of reference satisfactory to the Bank, to independently monitor the Project's implementation progress and compliance with the terms of the ESIA package, and to report regularly to the Bank;
- Shall appoint an external independent third-party monitoring firm, with staffing and terms of reference satisfactory to the Bank, to monitor the implementation of the Ecological Management Plan, Reinstatement Strategy, the Offset Strategy and all outstanding activities from construction and related to operations included in the ESIA package;
- Notify the Bank, within 2 days after its occurrence, of any significant environmental, occupational health and safety relevant event; and within 30 days provide to Bank with a summary report that includes a description of such significant event, and the measures that TAP is taking or plans to take to address the event and prevent any future similar events;
- Maintain a grievance redress mechanism and include an independent Appeal Grievance Redress Committee for addressing complaints not resolved by TAP's grievance mechanism related to the implementation of the ESIA package including LALRPs;
- Carry out an independent review on the implementation of the Grievance mechanism
- Establish an Independent Technical Committee in all three countries to address community concerns related to the Project E&S matters;
- Update the ESMS, ESMP and relevant plans, policies and procedures for the operations phase satisfactory to the Bank – no later than 3 months prior to commencement of the operation phase;
- Provide to the Bank an impact evaluation study on the outcome of the LALRP activities carried out by TAP no later than one year following completion of all resettlement and compensation activities;
- TAP to develop ToRs agreed with the Lenders for an expert advisory panel to monitor the Project in all three countries focusing on compliance with international standards.

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