Integrated ESIA Greece
Document guide
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1 INTRODUCTION

This document presents the following ancillary materials to guide and assist in the reading of the Environmental and Social Impact Assessment (ESIA) for the Greek section of the Trans Adriatic Pipeline (TAP):

- A **document map** providing a visual representation of the ESIA documentation structure (including document references);
- A list of **acronyms** used throughout the ESIA documentation;
- A **glossary** of technical terms used throughout the ESIA documentation;
- A full list of literature, data sources and websites used as **references** or background information during the ESIA process; and
- An **overview of the ESIA team**.
2 DOCUMENT MAP

TAP Integrated ESIA Greece – Document Map including Document References

Environmental and Social Impact Assessment

Section 0 Non-Technical Summary – GPL00-ASP-642-Y-TAE-0047

Section 1 Introduction
GPL00-ASP-642-Y-TAE-0049

Section 2 Project Justification
GPL00-ASP-642-Y-TAE-0050

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GPL00-ASP-642-Y-TAE-0054_at01

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- East – Health Services
  - GPL00-ASP-642-Y-TAE-0054_at06
- West – Health Services
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- East – Land Use and Socioeconomic Environment
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Supporting Materials Socioeconomic Baseline
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and Monitoring
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3 ACRONYMS

°C  Degree Celcius
AA  Appropriate Assessment
AC  Alternative Current
ACI  Area of Conservation Interest
AHAP  Area of High Archaeological Potential
AHLV  Areas of High Landscape Value
ALARP  As Low As Reasonably Practicable
API  American Petroleum Institute
asl  above sea level

BACI  Before – After – Control – Impact
BAP  Biodiversity Action Plan
Barg  Unit of gauge pressure
BAT  Best Available Technology
bcm  Billion Cubic Meters
bcm/year  Billion Cubic Meters per year
BMP  Biodiversity Management Plan
BREF  Best Available Techniques Reference Document
BV(S)  Block Valve (Station)

CBO  Community Based Organization
CCC  Central Control Centre
CCW  Counter Clockwise
CH  Cultural Heritage
CHMP  Cultural Heritage Management Plan
CLO  Community Liaison Officer
cm  Centimeters
CO  Carbon Monoxide
CO₂  Carbon Dioxide
CORINE  Coordination of Information on the Environment (European Programme under the European Commision)
CORD  Chronic Obstructive Pulmonary Disease
CR  Critically Endangered
CS  Compressor Station
CSMP  Chemical Substances Management Plan
CSR  Coorporate Social Responsibility
dB  Decibel
dB(A)  A-Weighted Decibel
DC  Direct Current
DCVG  Direct Current Voltage Gradient
DESF  A  Hellenic Gas Transmission System Operator
DIN  German Institute for Standardisation
DO  Dissolved Oxygen
DSTU  Dominant Soil Typological Unit

EASEE  European Association for the Streamlining of Energy Exchange
EBRD  European Bank for Reconstruction and Development
EC  European Community
ECoW  Ecological Clerk of Works
EEA  European Environmental Agency
EEC  European Economic Community
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>EEMUA</td>
<td>Engineering Equipment &amp; Materials Users’ Association</td>
</tr>
<tr>
<td>EHS</td>
<td>Environmental, Health and Safety</td>
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<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<td>EIS</td>
<td>Environmental Impact Statement</td>
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<td>ENT</td>
<td>E.ON New Build &amp; Technology GmbH</td>
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<td>Engineering, Procurement and Construction</td>
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<td>Emergency Response Plan</td>
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<td>E&amp;S</td>
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<td>Erosion and Sediments Control Plan</td>
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<td>EU LCPD</td>
<td>European Union Large Combustion Plant Directive</td>
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<td>EYPE/YPEKA</td>
<td>Special Environmental Authority within the Ministry of Environment, Energy and Climate Change</td>
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<td>FYROM</td>
<td>Former Yugoslav Republic of Macedonia</td>
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<td>GCS00</td>
<td>Greece Compressor Station 00</td>
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<td>Greece Compressor Station 01</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>Greenhouse Gases</td>
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<td>Guidance Leaflet on Acquisition and Compensation</td>
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<td>GNP</td>
<td>Gross National Product</td>
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<td>GOLR</td>
<td>General Organisation of Land Reclamation</td>
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<td>GPS</td>
<td>Global Positioning System</td>
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<tr>
<td>GRP</td>
<td>Gross Regional Product</td>
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<td>GWB</td>
<td>Ground Water Body</td>
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<tr>
<td>ha</td>
<td>hectares</td>
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<td>HDD</td>
<td>Horizontal Directional Drilling</td>
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<td>Hellenic National Meteorological Service</td>
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<td>IBA</td>
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<td>ICH</td>
<td>Intangible Cultural Heritage</td>
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<td>ICP</td>
<td>Irrigation Continuity Plan</td>
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<td>Vocational Training Institutes</td>
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<td>Institute of Environmental Management and Assessment</td>
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<td>IFC</td>
<td>International Finance Corporation</td>
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IFI International Financial Institutions
IGA Inter Governmental Agreement
IGME Institute of Geology and Mineral Exploration
ILO International Labour Organisation
IMF International Monetary Fund
IPPC Integrated Pollution Prevention and Control
IUCN International Union for the Conservation of Nature

J&B Jack and Bore
JMD Joint Ministerial Decision
K Kelvin (unit of measurement for temperature)
km kilometer
km$^2$ square kilometer
KP Kilometer Point

LCC Local Control Centres
LCD Local Content Development
LCDT Local Content Development Team
LDS Leak Detection System
LEA Land Easement and Acquisition
LMP Landscape Management Plan
LNG Liquefied Natural Gas
LOLR Local Organisation of Land Reclamation
LPD Large Projects Department (Ministry of Culture)
LRF Livelihood Restoration Framework
LRP Livelihood Restoration Plan
LTC Long Term Contract

m meter
masl Meter Above Sea Level
m.b.g.l. Meter Below Ground Level
mm millimeter
m$^2$ square meter
m$^3$/sec cubic meter per second
mg/l milligram/litre
mg/Nm$^3$ milligram per normal cubic meter
μg/m$^3$ microgram per cubic meter
MEECC Ministry of Environment, Energy and Climate Change
MEPPPW Hellenic Ministry for the Environment, Physical Planning and Public Works
MV Medium Voltage
MW Megawatt
MOH Ministry of Health and Social Solidarity

Natura 2000 Network of Protected Areas under the European Commission
NCESD National Centre for the Environment and Sustainable Development
NDT Non-Destructive Testing
NG Natural Gas
NGO Nongovernmental Organisations
NO$_2$ Nitrogen Dioxide
NO$_x$ Nitrogen Oxides
NSRF National Strategic Reference Framework
NSSD Greek National Strategy for Sustainable Development

OAED Manpower Employment Organisation
OECD Organization for Economic Co-operation and Development
OHSMP Operation Health and Safety Management Plan
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OOPEC Office for Official Publications of the European Communities
OSE Hellenic Railways Organisation
PAP Pipeline Abandonment Plan
PD Presidential Decree
PDER Preliminary Determination of Environmental Requirements
PE Polyethylene
PEIA Preliminary Environmental Impact Assessment
PIER Preliminary Identification of Environmental Requirements
PIMS Pipeline Integrity Management System
PM Particulate Matter
PPC Public Power Corporation of Greece
PPE Personal Protection Equipment
PPP Pollution Prevention Plan
PPS Pipeline Protection Strip
PR Performance Principles
PRT Pipeline Receiving Terminal
PS Performance Standards
QRA Quantitative Risk Assessment
RAE Regulatory Authority for Energy
RDF Resource Selection Function
RHA Regional Health Authority
ROP Regional Operational Programme
RoW Right of Way
RSF Resource Selection Function
SBR Sequence Batch Reactor
SCADA Supervisory Control and Data Acquisition System
SCD Stakeholder and Consultation Database
SCI Site of Community Interest
SCS Station Control System
SEA Special Environmental Authority
SEI Social and Environmental Investment Programme
SEP Stakeholder Engagement Plan
Sm³/h Standard cubic meters per hour
SO₂ Sulphur Dioxide
SO₅ Sulphur Oxides
SPA Special Protection Area
SPRP Spill Prevention and Response Plan
SRP Site Reinstatement Plan
STDs Sexually Transmitted Diseases

\[ t \quad \text{tonne} \]
\[ t/yr \quad \text{tonnes per year} \]
TAP Trans Adriatic Pipeline
TAP AG Trans Adriatic Pipeline Joint Venture Company
TMP Traffic Management Plan
TSP Technical Service Providers
TSS Total Suspended Solids
VIPE Industrial Area
UMP Utilities Management Plan
UN United Nations
UNECE United Nations Economic Commission for Europe
### Project Title:
**Trans Adriatic Pipeline – TAP**

### Document Title:
**Integrated ESIA Greece Document Guide**

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<th>Acronym</th>
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<tr>
<td>UNECE</td>
<td>United Nations Economic Commission for Europe</td>
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<tr>
<td>UNEP</td>
<td>United Nations Environment Programme</td>
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<tr>
<td>WBG</td>
<td>World Bank Group</td>
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<td>WFD</td>
<td>European Water Framework Directive</td>
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<td>WHO</td>
<td>World Health Organisation</td>
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<td>WMP</td>
<td>Waste Management Plan</td>
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<td>WTO</td>
<td>World Trade Organisation</td>
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<td>ZVI</td>
<td>Zone of Visual Influence</td>
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4 GLOSSARY

Aggregate: Broad category of coarse particulate material used in construction, including sand, gravel, crushed stone, slag, recycled concrete and geosynthetic aggregates. Aggregates are a component of composite materials such as concrete and asphalt concrete; the aggregate serves as reinforcement to add strength to the overall composite material.

Auger Boring: Auger boring is a technique for forming a horizontal bore hole through the ground, from a drive shaft to a reception shaft, by means of a rotating cutting head. As the bore progresses the ground is cut and the spoil material is transported back to the drive shaft by the rotation of helical-wound auger flights within the steel casing pipe. The common practice is to simultaneously jack the steel casing with the boring operation. If uncased auger boring is permitted, it should be limited to soil conditions with sufficient stand-up time and when short, small diameter bores are used. Auger boring provides a safe method of installing pipes and cable ducts while supporting the ground during the bore.

Block Valve Station: Valve for isolating the pipeline into distinct sections. Block Valve Stations are the first line of protection for pipelines. With these valves the operator can isolate any segment of the line for maintenance work or isolate a rupture or leak. In the TAP Project, block valve stations are located approximately every 24 km and occupy an area of approximately 600 m².

Bucket Ladder Excavators: A mechanical excavator with a digging mechanism, that consists of a series of buckets moving in a continuous chain.

Bundling Principle: It is common practice to bundle new linear infrastructure (such as pipelines) with existing linear infrastructure, to the extent possible. The aim is to reduce environmental and social impacts and impacts on cultural heritage by minimizing the area where land use restrictions needs to be applied and by avoiding fragmentation of land uses and habitats.

Centreline A line that divides something into two equal parts. Currently, all centrelines mentioned in the document are preliminary.

Cleaning pigs: Pigs are used to perform various maintenance operations on a pipeline such as remove dust or fluids and drying. This can be done without stopping the flow of the product in the pipeline. The pig is inserted into a ‘pig launcher’ (or ‘launching station’) - a funnel shaped Y section in the pipeline. The launcher / launching station is then closed and the pressure driven flow of the product in the pipeline is used to push it along down the pipe until it reaches the receiving trap - the ‘pig catcher’ (or receiving station). There are several types depending on the device built-in to perform the cleaning tasks: Foam or Brush pigs. The pipe cleaning process by means of pigs is usually known as pigging or swabbing.

Cesspit: A cesspit or cesspool, is a pit, conservancy tank, or covered cistern, which can be used to dispose of urine and faeces, and more generally of all sewage and refuse. Traditionally, it was a deep cylindrical chamber dug into the earth.

Code of Conduct: Code designed by TAP that provides a broad range of guidelines for proper business conduct and for preserving integrity.
Commissioning Phase: Is the process of assuring that all systems and components of a building or industrial plant are designed, installed, tested, operated, and maintained according to the operational requirements of the owner or final client.

Compressor Station: A Compressor Station (CS) is a facility which helps the transportation of natural gas from one location to another, by maintaining or increasing pressure. A compressor station mainly includes facilities for gas treatment (filter separators), metering, compression and cooling.

Decommissioning Phase: Decommissioning phase is the demolition process of project structures and buildings and the reinstatement of the area affected by the project.

Dewatering: Dewatering is the removal of ground or surface water from a construction site (in this case the trench) to allow construction to be done “in the dry” (as opposed to under wet conditions). Water is usually removed using well points and power driven pumps or, if feasible, by trench drains or siphons which conduct the water to lower ground. A well consists of a pump, hose and a vertical well casing. The pump intake is at the bottom of the well casing. The water is pumped up the hose, out of the well casing, and to a suitable discharge location.

Environmental and Social Impact Assessment (ESIA): An analytical process with the aim of identifying, describing and assessing in an appropriate manner the direct and indirect effects of a project on: (a) human beings, fauna and flora; (b) soil, water, air, climate and the landscape; (c) material assets and the cultural heritage; and (d) the interaction between the above mentioned factors. The purpose of the assessment is to ensure that decision makers consider the ensuing environmental and social impacts when deciding whether to proceed with a project. Its objectives include: (i) to help decide if the impacts are acceptable; (ii) to design/ implement appropriate monitoring, mitigation and management measures, (iii) propose acceptable alternatives; and (iv) present the findings in a comprehensive report.

Espoo Convention: As a cross-border project, the TAP is subject to international conventions and national legislation in each of the countries through which it passes. Before construction starts, Environmental Impact and Social Impact Assessments (ESIAs) will be completed covering the entire pipeline route. On the international level, the Espoo Convention stipulates the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also outlines the general obligation of states to notify and consult each other on all major projects under consideration that are likely to have a significant transnational environmental impact.

Flysch: Thick and extensive deposit largely of sandstone that is formed in a geosyncline. A geosyncline is essentially a large linear deepening basin along a continental margin, which becomes deformed and then uplifted in parts as a mountainous region.

Forest Gallery: Forest gallery is a forest formation in corridor shape and is present into landscapes that otherwise have sparse tree coverage, such as grasslands or agricultural areas, or along rivers and wetlands.

Gauge plate: Gauge plate is a special tool of carbon steel, manufactured to exact dimensions, installed in the PIGs to clean and monitor the internal pipeline.

Grievance Mechanism: TAP mechanism to address stakeholder concerns promptly and effectively, using an understandable and transparent process that is culturally appropriate and readily accessible to all segments of the affected parties, at no cost and without retribution.
Horizontal directional drilling (HDD):

Directional boring, commonly called horizontal directional drilling or HDD, is a steerable trenchless method of installing underground pipes, conduits and cables in a shallow arc along a prescribed bore path by using a surface launched drilling rig, with minimal impact on the surrounding area. The drilling rig is formed by a continuous string of steel drilling rod. Directional boring is used when trenching or excavating is not practical. It is suitable for a variety of soil conditions and jobs including road, landscape and river crossings. Installation lengths up to 6,500' (2,000 m) have been completed, and diameters up to 56" (1,200 mm) have been installed in shorter runs. Pipes can be made of materials such as PVC, polyethylene, polypropylene, ductile iron, and steel if the pipes can be pulled through the drilled hole. Directional boring is not practical if there are voids in the rock or incomplete layers of rock. The best material is solid rock or sedimentary material. Soils with cobble stone are not recommended.

Hydraulic excavators:

Hydraulic excavators are high-performance excavators especially useful for work areas that are more confined and less amenable to conventional equipment. They are used in applications ranging from the construction of roads and pipelines to mining and the excavation of rocks containing diamonds and gold. All movement and functions of a hydraulic excavator are accomplished through the use of hydraulic fluid (usually oil), with hydraulic cylinders and hydraulic motors (in comparison to cable-operated excavators).

Hydro-testing:

Hydrotesting (or hydrostatic testing) is the most common method for testing the integrity of the pipeline and checking for any potential leaks (e.g. from faulty welds or cracked pipe work) prior to commissioning. The test involves placing water inside the pipeline at a certain pressure to check that the pipeline is not damaged and will not leak during operation.

Jack and bore

Jack and Bore (J&B) is a method for installing a pipe. It is a multi-stage process consisting of constructing a temporary horizontal jacking platform and a starting alignment track in an entrance pit at a desired elevation. The pipe is then jacked by manual control along the starting alignment track with simultaneous excavation of the soil being accomplished by a rotating cutting head in the leading edge of the product's annular space. The ground up soil (spoil) is transported back to the entrance pit by helical wound auger flights rotating inside the pipe. J&B typically provides limited tracking and steering as well as limited support to the excavation face.

masl:

Meters Above Sea Level, in contrast to m AGL which applies to meters above groundwater level.

Micro-tunnelling:

Micro-tunneling is a digging technique used to construct small tunnels by means of a microtunnel boring machine (MTBM) operated remotely. In most microtunneling operations the pipe is inserted from the entrance and pushed behind the machine. This is a process often called ‘pipe jacking’. As the machine advances, more tunnel liner is pushed from the entrance. Thus, the speed of the advancing machine is controlled by the speed at which the pipe is inserted into the entrance. In order to minimize friction generated around the pipe, over-cutting is used to give a slight gap between the inner edge of the tunnel and the outer edge of the liner together with the injection of a drilling fluid, often bentonite slurry.

Non-destructive Testing (NDT):

Non-destructive testing (NDT) is a wide group of analysis techniques used in science and industry to evaluate the properties of a material, component or system without causing damage to it. NDT does not permanently alter the article being inspected. Common NDT methods include ultrasonic, magnetic particle, liquid penetrant, radiographic, and eddy-current testing.
**Natura 2000:**
Ecological network of protected areas in the territory of the European Union.

**Pig:**
Pipeline Inspection Gauge (PIG) is a piece of equipment that is sent down a pipeline and propelled by the pressure of air or the product in the pipeline itself, used for Internal cleaning of pipelines and monitoring the condition of pipelines.

**Pipeline Protection Strip (PPS):**
A permanent *Pipeline Protection Strip* (PPS) with a width of 8 m will be established (i.e. 4 meters either side of the centreline). Farming of annual crops and associated shallow ploughing down to a maximum depth of 30 cm will be allowed, but cultivation of deep routing system plants such as vineyards, fruit trees, or any other bushes or trees will be restricted. Similarly, no houses and no construction will be allowed. The PPS will also ensure that access is available for inspection of the pipeline and for pipeline maintenance at any time.

**Pipestack:**
Pipestack is a set of pipes that are piled up or stacked together. A pipestack becomes “one unit” where the round pipes are transformed into one solid block that can be easily picked up and moved with the help of a forklift or other lifting machine, avoiding moving each pipe one by one, improving maneuverability and reducing the space needed for storage.

**Pipeyard:**
The area used for the temporary storage of pipes prior to spread.

**Primary Contractors:**
An individual or entity that has a direct contractual relationship with the client or owner of the project. The primary contractor is responsible for providing, either by itself, or through subcontract arrangements with other individuals or entities, all of the design of services and activities required for the project.

**Public Participation:**
It involves the activity of members of the public working in partnership with public authorities to reach an optimal result in decision-making and policy-making.

**Receiving Facility:**
The Pipeline Receiving Terminal (PRT) and terminal point of the TAP, constituting the connection with the Italian national grid. The main function of the PRT will be to control the pressure and temperature of the gas to meet the grid requirements and measure the flow for fiscal requirements.

**Right of Way (RoW):**
A narrow, un-obstructed strip or corridor of land of a specific width directly above the pipeline and around the supporting facilities, where some of the property owner’s legal rights have been granted to a pipeline company. A right-of-way agreement between the pipeline company and the property owner is also called an easement. Rights-of-ways and easements provide a permanent, limited interest in the land that enables the pipeline company to operate, test, inspect, repair, maintain, replace, and protect one or more pipelines on property owned by others. It can be distinguished into: (i) Temporary working strip which is a strip normally 38 meters wide to enable the construction of the pipeline. Additional space is usually required at road or river crossings or when required by terrain or soil; and (ii) Permanent pipeline protection strip which is usually a narrower strip (of 8 m in the TAP Project) to enable access for inspection, maintenance, repair and protection of the pipeline. The pipeline company shall have the right to access the strip at any time.

**Route Refinement:**
The process of finding and examining a possible pipeline route and possible alternatives.

**Safety Zone (Inner):**
The construction of new third party structures will be restricted to an ‘inner’ safety zone of 40 m (i.e. 20 m from each side of the centreline) along the pipeline route. However, it will be possible to re-build greenhouses or irrigation pump houses in
this zone following pipeline construction.

<table>
<thead>
<tr>
<th>Safety Zone (Enlarged):</th>
<th>Regulates the establishment of new cluster of houses and/or industrial infrastructure within a corridor of 400 m (i.e. 200 m to both sides of the centre line) according No Δ3/A/οικ. 4303 ΠΕ 26010 5/3/2012 “Technical Regulation: Natural Gas supply systems - Pipelines for maximum operating pressure over 16 bar”</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCADA:</td>
<td>System, Control and Data Acquisition (SCADA) is a computer system monitoring and controlling a process. The process can be industrial, infrastructure or facility-based.</td>
</tr>
<tr>
<td>Scarring and nicking:</td>
<td>Potential damages in the pipeline generated by the friction and abrasion that occurs when the pipe is introduced and advances through a bore drilled in trenchless construction methods. These damages can be avoided by the generation of a small gap between the pipe and the inner edge of the tunnel with the help of the cuttings generated during the drilling process and the injection of a drilling fluid.</td>
</tr>
<tr>
<td>Scoping Report:</td>
<td>Scoping is the process of determining the content and extent of the matters which should be covered in the environmental information to be submitted to a competent authority for projects which are subject to ESIA. Also called ‘Preliminary Determination of Environmental Requirements’ report according to the new Greek Law 4014/2011.</td>
</tr>
<tr>
<td>Southern Gas Corridor:</td>
<td>A European Commission initiative to supply natural gas to Europe from the Caspian and Middle Eastern regions.</td>
</tr>
<tr>
<td>Stacking:</td>
<td>The process of piling pipes to create a pipestack. The maximum height of the pipestack has to be carefully calculated to avoid damages on pipe coatings due to the weight. Stacking for pipes is commonly used as a logistic strategy when storing large quantities of pipes in order to reduce the space needed and the maneuverability of the pipes.</td>
</tr>
<tr>
<td>Stakeholder:</td>
<td>A person, group, organization, member or system who affects or can be affected by the project</td>
</tr>
<tr>
<td>Stakeholder Engagement:</td>
<td>Stakeholder Engagement (SE) is a process of sharing information and knowledge, seeking to understand the concerns of others and building relationships based on collaboration.</td>
</tr>
<tr>
<td>Stakeholder Engagement Plan:</td>
<td>Stakeholder Engagement Plan (SEP) is a living document describing the approach to SE and ensuring that a consistent, comprehensive, coordinated and culturally appropriate approach is taken for consultation and project disclosure.</td>
</tr>
<tr>
<td>Stringing pipe:</td>
<td>Placing joints of pipe end to end along a pipeline right of way in preparation for laying, i.e., screwing or welding the joints together to form a pipeline.</td>
</tr>
<tr>
<td>Stringing trucks:</td>
<td>Stringing trucks are steerable pole trailers that enable long loads to be transported (e.g. pipes into storage yards and pipeline right of way). The steerable pole trailers are equipped with large blocks that are adjusted so the pipe is held precisely in place while being transported over uneven terrain. The trailers are engineered so the rear tandem axel steers near the same tracks as the tractor by using cables that alternate from one side of the tractor to the opposite sides of the trailer.</td>
</tr>
</tbody>
</table>
Study Area: A general 2 km wide corridor (1 km either side of the proposed centreline) along the entire length of the preferred route (also referred to as the ‘base case’ route).

Supporting Facilities: Additional infrastructure required to operate the pipeline, including: Compressor Stations to maintain pressure in the pipeline and help the transportation of gas from one location to another; and Block Valve Stations installed approximately every 30 km of the pipeline to enable the interruption of gas flow and isolate specific segments of the line if maintenance is required or in case of an emergency.

Swabbing: It is the method of cleaning the inside of a pipeline by insertion of bullet shaped poly pigs or swabs into the pipeline system. Hydraulic or pneumatic pressure pushes the pig through the pipeline while it cleans the pipe and removes debris.

TAP AG: A joint venture company established by Germany’s E.ON Ruhrgas, Norwegian energy company Statoil and Swiss Axpo to develop and operate the Trans Adriatic Pipeline.

The Trans Adriatic Pipeline (TAP): A natural gas pipeline that will start in Greece close to the Turkish border, cross Albania and the Adriatic Sea and come ashore in southern Italy, allowing gas to flow directly from the Caspian region to European markets.

Thermal Input: The rate at which fuel can be burned, at maximum continuous rating, multiplied by the net calorific value of the fuel and expressed as megawatts thermal (MWth).

Thrust-boring: Thrust boring is a ‘jack and bore’ drilling method typically used for installing steel pipe casing beneath an existing surface where the risk of hole collapse whilst installing larger diameter pipes has been identified or where the grade is critical. The thrust boring machine is capable of drilling through a variety of ground conditions from sand to reasonably hard rock. This boring method generally utilizes an auger that is placed inside a section of steel pipe. A large rectangular pit is usually dug on each side of the work area to accommodate the steel pipe and machinery used in this procedure. The pipe casing is jacked into place as the drilling is performed with any excess soil transferred out of the pipe by the auger’s blades. Thrust boring generally works best in soils that are located above the groundwater table. When groundwater is present during a boring operation, special dewatering measures must be taken to prevent the steel pipe casing from being flooded with water. After finishing installation any remaining space is usually filled with a high flow grout. Once the installed pipe work is connected to existing or new infrastructure both the entry and exit pits can be backfilled.

Waste Management Hierarchy: The waste management hierarchy refers to the three (or four) ‘R’s of reduce, reuse, recycle, (and recover) which classify waste management strategies according to their desirability. It has taken many forms over the past decade but the basic concept has remained the cornerstone of most waste minimization strategies. The aim of the waste hierarchy is to extract the maximum practical benefits from products and to generate the minimum amount of waste.

Weld End Valves: In this type, the ends of a valve are socketed to receive plain-end pipe. A circumferential weld is made on the outside of the pipe so that ‘icles’ and weld spatter are unable to enter the pipeline. Socket-weld ends are used only on steel valves, and as a rule they are limited to sizes of 50 mm and smaller for higher pressure/temperature applications in pipelines not requiring frequent dismantling.

Weighting: Protection system for pipelines designed to provide negative buoyancy and together with the coating, mechanical protection for pipelines in submarine and wet environments. This is achieved by the use of concretes of different weight.
Working Strip: The width of the regular construction *working strip* for the TAP Project is 38 m, and can be reduced to 28 m where physical constraints require. In areas of potential ridge modification the width will be further reduced to a minimum 18 m corridor where physical, environmental, social or cultural heritage constraints require.
5 REFERENCES

5.1 Integrated ESIA Greece Section 1 Introduction

5.2 Integrated ESIA Greece Section 2 Project Justification


5.3 Integrated ESIA Greece Section 3 Legislative and Policy Framework


5.4 Integrated ESIA Greece Section 4 Project Description


[4.3] ENT (2013) Logistic Study Greece East (01-02-2013) – Ref. GPL00-ENT-100-F-TRP-0003_0B


5.5 Integrated ESIA Greece Section 5 ESIA Approach and Methodology


5.6 **ESIA Greece East Section 6 Environmental, Socioeconomic and Cultural Heritage Baseline**


IGME (1978) Geological Map Scale 1:50000 Sheet Thessaloniki

IGME (1985) Geological Map Scale 1:50000 Sheet Alexandria

IGME (1982) Geological Map Scale 1:50000 Sheet Veroia


IGME (1986) Geological Map Scale 1:50000 Sheet Plati

IGME (1990) Geological Map Scale 1:50000 Sheet Koritsa-Mesopotamia

IGME (1990) Geological Map Scale 1:50000 Sheet Kastoria

IGME (1997) Geological Map Scale 1:50000 Sheet Ptolemaida


IUCN (2001): Important Plant Areas of South and East Mediterranean Region – Priority sites for conservations.


JMD 50910/2727/2003, National Plan for the Management of Non-Hazardous Waste

JMD 8668/2007, National Plan for the Management of Hazardous Waste


[6.94] OECD (2000), Environmental Performance Reviews


[8.97] OECD Health Ministerial (2010). Health System Priorities When Money is Tight (session 1). 7–8 October 2010. Available at: http://www.oecd.org/document/0/0,3746,en_21571361_44701414_46141632_1_1_1_1,00.html (retrieved 14.2.2010


[6.120] Thessaloniki Port Authority (2011): http://www.thpa.gr


5.7 Integrated ESIA Greece Section 7 Stakeholder Engagement


5.8 Integrated ESIA Greece Section 8 Assessment of Impacts and Mitigation


[8.10] ELKETHE –Institute of Freshwater Research (2007): Freshwater fish fauna study and conservation recommendations within the Ilarion hydroelectric dam area, 1st interim technical report (in Greek)

[8.11] ENT (2012) Greece Crossings List , Doc. Ref. GPL00-ENT-100-F-TLX-0001, Rev.0A


[8.14] ENT (2013) Greece list of Crossings TAP East, Doc. Ref. GPL00-ENT-100-F-TRP-0004 Rev 0A


[8.29] WGP (2013) Noise Control Study GCS00, Doc. Ref. GCS00-WGP-000-S-TRS-0001

6 PROJECT ESIA TEAM

The development of the ESIA for the East Section, as well as the eventual integration of the ESIA was led by ASPROFOS S.A., on behalf of TAP AG.

ASPROFOS’ team contributing to the ESIA included:

- Leonidas Zambas, Project Director
- Philip Spanidis, Project Manager
- Irini Protopappa, Permits and Environmental Head
- Dimitris Hourmouziadis, ESIA Coordinator
- Melina Georgopoulou, Project Coordinator
- Dimitris Bekos, Project Engineer – Contract Administrator
- Theodosis Thoma, Authorities – Permits and SCD Team Leader
- Dimitra Noukou, Stakeholder Engagement Expert
- Irini Nikiforaki, Environmental Expert
- Maria Chanioti, Landscape – Visual Amenity Expert
- Evaggelia Gioti, GIS and Mapping Leader
- Koutsoukos Stamatios, Chemical Engineer - Environmental Expert.
- Solon Filopoulos, Subcontractors Coordinator
- Costas Stavrinos, Forestrics Expert
- Lampros Kotsonis, Technical Team Leader
- Ilias Georgoutzos, Technical Coordinator
- Nikos Karamichalis, Environmental Geologist
- Eftathios Stasinoulas, Geological Coordinator
- George Anagnostidis, Hydrogeological Expert
- Paraskevi Kapella, Socio and Stakeholder Engagement Expert
- Spyros Lattas, Risk and Safety Expert
- Manos Papantonakis, Logistics

For the final integration of the ESIA, ASPROFOS was also assisted by a number of ERM staff, including:

- Ferran Climent and Jorge Sánchez, providing specialist support for the biological environment assessment; and
• Margarete Langer and Katie Thompson, providing specialist support for the socioeconomic environment assessment.

For the development of the ESIA Section Kipi – Komotini, ASPROFOS was assisted by EXERGIA, an energy and environmental consultant. EXERGIA’s ESIA coordination and leadership team included:
• Kostas Batos, Project Manager;
• Flora Konstantopoulou, ESIA Coordinator and Physical Environment Team Leader;
• Kelly Papapavlou, Ecology Team Leader; and
• Eva Kallivoka, Socioeconomic Team Leader.

The development of the ESIA for the West Section was led by ERM, on behalf of TAP AG. ERM’s Project team included:
• Klaus Kaiser, Project Partner;
• Ben Pizzi, Project Manager;
• Achim Broenner, Technical Director;
• Alberto Sambartolome, Programme Director;
• Emma Bright, Programme Coordinator/Manager; and
• Stefania Mazzoli, Project Assistant.

ERM technical leads contributing to the ESIA included:
• Physical and biological environment analysis and impact assessment led by Jorge Sánchez;
• Socioeconomic analysis and impact assessment led by Emily Cooper and Claudia Eckhardt, supported by Natasha Ezekiel;
• Cultural Heritage analysis and impact assessment led by Doug Park and Michelle Young; and
• GIS and mapping by Simone Poli and Marco Ruffoni.

Additional ERM technical leads who provided senior overview included Vicky Copeman for the socioeconomic assessment and Emlen Myers for cultural heritage assessment.
With respect to environmental, socioeconomic and cultural heritage baseline data collection and impact assessment, ERM was assisted by EXERGIA with support from ECOMED (a team of local subcontracted specialists and support services).

EXERGIA staff contributing to the ESIA included:

- Kostas Batos, ESIA Coordinator;
- Flora Konstantopoulou, Project Manager;
- Thomas Kollias, Team Leader (Physical Environment);
- Kelly Papapavlou, Team Leader (Biological Environment); and
- Eva Kallivoka, Team Leader (Socioeconomic Environment).

With respect to environmental, socioeconomic and cultural heritage baseline data collection and impact assessment write-up, the core ESIA team was assisted by a number of specialists:

**Environmental Baseline and Impact Assessment**

- Elias Dimitriou, Physical Environment Team Leader (Soil, Surface and Groundwater);
- Stamatis Zogaris, Hydrobiologist – River Ecology Team Leader;
- Ioannis Karaouzas, Biologist – River Ecology Expert;
- Anastasios Papadopoulos, Physicist – Laboratory Researcher;
- Ioannis Hatzianestis, Chemist – Laboratory Researcher;
- Christina Zeri, Chemist – Laboratory Researcher;
- Christos Nikolaidis, Chemist – Laboratory Researcher;
- Evagelia Colobari, Ichthyologist;
- Vasso Markogianni, Environmental Expert;
- Aggeliki Mentzafou, Geology Expert;
- Panagiotis Arvanitis, Ichthyologist;
- Giorgos Hatzinikolaou, Fish specialist, Macroinvertebrates;
- Athina Patsia, Water Quality Expert, Sediment Quality;
- Sotiris Valkaniotis, Groundwater Expert;
- George Zacharioudakis, Hydrogeologist;
- Eleni Gadolou, Landscape Expert;
- Panagiotis Stratakis, Landscape Expert;
- Stamatis Kavasilis, Soil and landscape Expert;
- Stamatis Sekliziotis, Soil and landscape Expert;
• Tasos Dimalexis, Biological Environmental Team Leader;
• Jacob Fric, Fauna Expert (Avifauna);
• Margarita Tzali, Biological Environmental Impact Assessment Expert;
• Alexandra Kontou, Biological Environmental Impact Assessment Expert;
• Basilis Goritsas, Fauna Expert;
• Jenny Galani, Flora Expert;
• Nikos Probonas, Fauna Expert (Avifauna);
• Rika Bisa, Fauna Expert (Reptiles – Amphibians, Mammals);
• George Fotiadis, Flora and Habitats Expert;
• Stefan Donth, Avian Ecology / Ornithology;
• Charalampos Alivizatos, Avian Ecology / Ornithology;
• Anastasia Stefanaki, Flora and Habitats Expert;
• Stavroula Stamellou, Flora and Habitats Expert;
• Christina Adamidou, Flora and Habitats Expert;
• Panagiota Maragou, Fauna Expert (Reptiles and Amphibians);
• Panagiotis Pafilis, Fauna Expert (Reptiles and Amphibians);
• Konstantinos Sagonas, Fauna Expert (Reptiles and Amphibians);
• George Iliopoulos, Large Carnivores (wolf);
• Dimitris Tsaparis, Large Carnivores (bear);
• Despina Mertzanidou, Fauna Expert (*Spermophilus Citellus*);
• Despina Migli, Large Carnivores (jackal);
• Xenofon Pasoulas, GIS Expert;
• Konstantina Skandali, Quality Control;
• Thomas Maggos, Air Sampling;
• Dikaia Saraga, Air Sampling;
• Antigoni Katsanaki, Air Sampling;
• Heinz Scherer, Noise Expert;
• Alexandra Sotiropoulou, Noise Expert; and
• George Kampourakis, Noise Expert.

**Socioeconomic Baseline and Impact Assessment**

• Sophia Triantafyllidou, Socio Expert and Team Leader
• Eirini Tsakona, Socio Expert
• Konstantina Psalida, Socio Expert
Project Title: **Trans Adriatic Pipeline – TAP**
Document Title: **Integrated ESIA Greece Document Guide**

- Michail Vakyris, Socio Expert
- Mirto Tsonoglou, Socio Expert
- Sevasti Tsourdalaki, Socio Expert
- Evangelia Chavele, Socio Expert
- Anastasios Palaiologos, Socio Surveyor
- Grigorios Dovinos, Socio Surveyor
- Dionysia Pastra, Socio Surveyor
- Korina Pastra, Socio Surveyor
- Nancy Antoniadou, HH Surveyor
- Theodoros Theodoroglou, HH Surveyor
- Crysostomos Rizomiliotis, Traffic Expert
- Konstantina Kamposi, Health
- Agoritza Baka, Health Expert
- Eleytheria Akoumianaki, Socio Data Entry Manager
- Eleni Mpeazi, Socio Data Entry Manager
- Christos Tsamadies, Socio Data Entry Manager
- Stefanos Tsiritas, HH Surveyor

**Cultural Heritage Baseline and Impact Assessment**
- Elena Ainali, Cultural Heritage Expert
- Sotiria Dandou, Cultural Heritage Expert

**GIS and Mapping**
- Christos Koubetsos, GIS and Mapping Team Expert
- Kiki Kyriakidi, GIS and Mapping Expert
- Stelios Zontos, GIS Expert
- Mary Charisi, GIS Expert

The team coordination of activities was led by Hourmouziadis Dimitris, BSc Forestry and Natural Environment, MSc Environment and Development and Koutsoukos Stamatios, Chemical Engineer, Environmentalist, MBA.

**Project Manager:** Spanidis Philip-Mark, PhD, MSc, Survey Engineer