The Trans-Adriatic Pipeline Permitting Procedure

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Identifying Asprofos

34 Years Engineering Solutions – A workforce of 198 persons

- The largest engineering consultancy company in Greece
- Established in 1983 as a JV between the Hellenic Aspropyrgos Refinery and Foster Wheeler Italiana
- Member of the Hellenic Petroleum Group of Companies
- Provides engineering and consultancy services predominantly in the Oil & Gas Sectors
- Provides technical and economic solutions that cover clients' project needs

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Fields of Expertise

Oil, Gas & Power Plant Sectors

REFINERIES

NATURAL GAS

STORAGE TERMINALS

POWER PLANTS

Services

- Feasibility Studies
- Technology / Licensor Selection
- Basic Design
- Front End Engineering Design (FEED)
- Detailed Engineering
- Permitting
- Review of Basic & Detailed Engineering
- Project Management Consulting
- Procurement Services
- Construction Supervision and Management
- Planning & Cost Control
- Commissioning, Start-up & Training Support
- Owner's Engineer
- EPC Bid Support
- Dynamic Simulation

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The Trans-Adriatic Pipeline: Concept and features

- TAP is part of a gas pipeline system transporting gas from Azerbaijan to Western Europe
- Conceived to link the Caspian Sea gas fields with Italy and the European gas market
- Characterized as a Project of Common Interest due to its role of opening up the European Southern Gas Corridor
- Begins at Greece-Turkey border
- Crosses Greece and Albania and reaches Italy after a section under the Adriatic Sea

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The Trans-Adriatic Pipeline: Concept and features

- Flexibility and adaptability to market needs is built into the TAP design
- Total length: 878 km
- Initial capacity: 10 bcm/y
- Maximum capacity: 20 bcm/y
- Reverse flow from Italy to the Balkans foreseen
- Pipeline facilities capable of handling future modifications and operation profiles

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TAP Route Map

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The Southern Gas Corridor

- TAP forms the crucial link for the delivery of Caspian Gas to Europe
- But is SE Europe to remain a simple link?

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The TAP Permitting Procedure for Asprofos

- Experience of all major NG Projects in Greece
- Experience of previous stages of the TAP project
- Knowledge of TAP policies and requirements
- Knowledge of EBRD's Performance Requirements
- Knowledge of the regulatory framework / Resolution of Regulatory issues
- Permitting activities
- Results

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Asprofos Experience in TAP Project

TAP ESIA

(Integrated ESIA for the Greek section of the project – 540 kms)

TAP FEED

(Local Consultant for Greek Section – 360 kms)

TAP PERMITTING & ENGINEERING

(Permits for Onshore Project Implementation in Greece & Albania – 780 kms)

TAP DETAIL DESIGN

(Detail Engineering of TAP Greece – 187 kms)

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Permits / Approvals / Agreements for TAP in Greece & Albania

Approval of Environmental Terms & Additional Amendments of ESIA

Update Forest Characterization Acts (several rounds)

Preferred Project Area Permit (Base case ESIA Amend. 1)

Installation Acts & Amendments

Safety & Risk Assessment Study Approvals
- For Pipeline
- For GCS00 Compressor Station

Installation Permit & Amendments

Forest Permits for Construction in Forest Areas
- Logging Permit
- Protocol of Installation in Forest Areas

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Permits / Approvals / Agreements for TAP in Greece & Albania

- Agreement with IOs for Easement Zone Implications
- Crossing Permits
- Permits for Geotechnical Program
- Fire – fighting Design
- Building Construction Approval, Permit & Prerequisites for GCS00, ACS02 and ACS03 Compressor Stations
- Building Construction Approval, Permit & Prerequisites for BVSs in both countries
- Construction Licensing

These activities necessitated both detailed study and intensive field work.

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Regulatory issues

- The Trans-Adriatic Pipeline crosses national borders three times:
  - Turkey – Greece
  - Greece – Albania
  - Albania – Italy

- These border crossings are also crossings in and out of the EU
- Reverse flow potential also to be taken into consideration

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Regulatory issues

- Technical standards differing among the countries crossed by TAP
- Market-related regulation harmonized for Italy and Greece by the EU Third Energy Package
- First ever natural gas pipeline to be built in Albania, causing need to enact regulation
- Italian and Greek codes, themselves compatible with European norms, were adopted in Albania, incorporating the Third Energy Package

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Points of discussion - Permitting activities

- Co-ordination of activities for Greece and Albania was of crucial importance
- A technical solution approved in one country being rejected in the other would mean sizeable redesign and procurement costs
- Time is Money! Management of multidisciplinary and cross-border project teams became the essence of successful permitting procedure

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Points of discussion - Field activities

- Field studies and surveys were performed throughout the length of TAP
- Many lessons learned – many of them anecdotal
- Having the permit did not necessarily mean construction could begin!
- Convincing people in remote communities about the necessity of a project not directly benefiting them was very difficult
  - Especially if their property were to be affected by the routing

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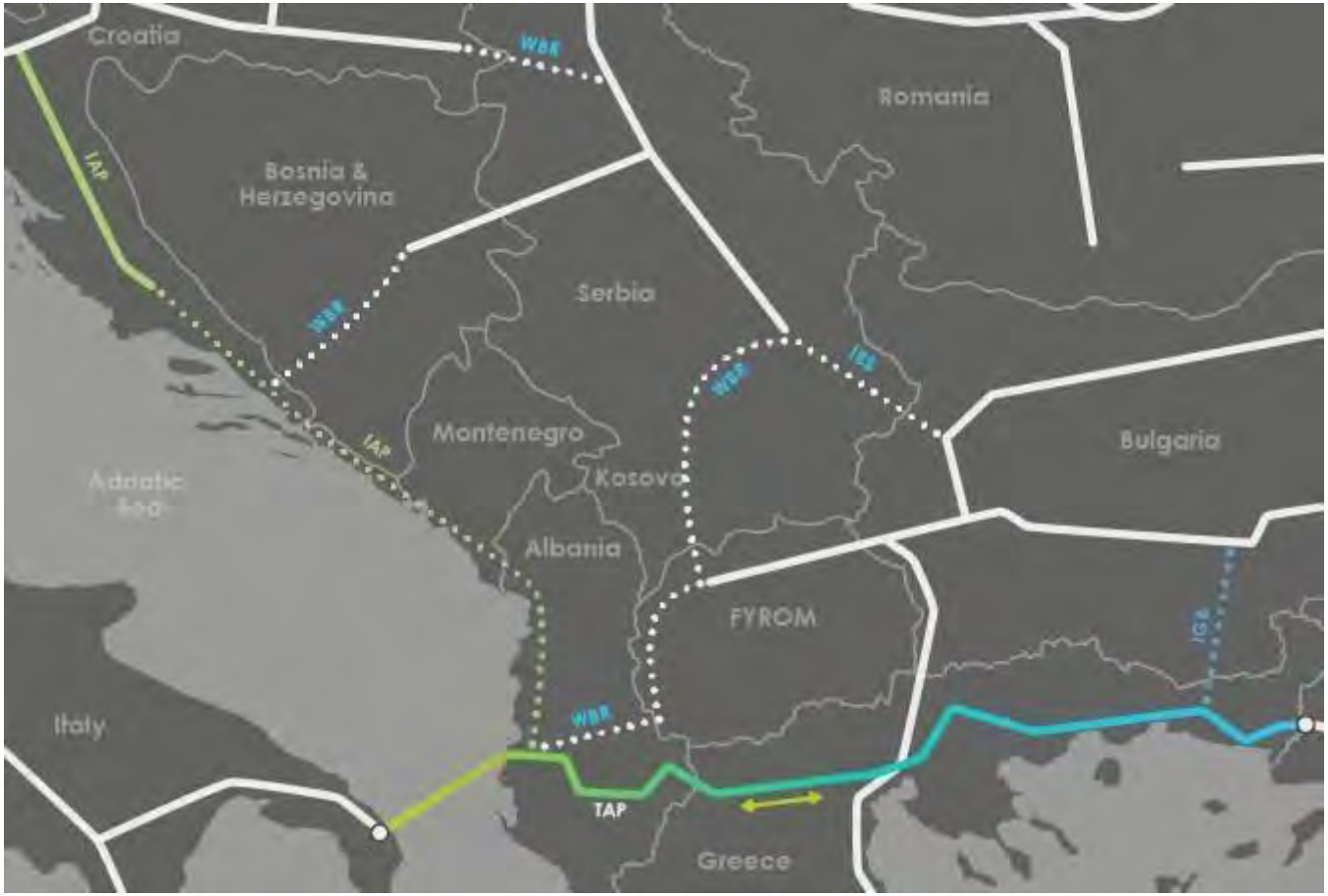
TAP Route Map
with proposed future interconnections



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Thank you for your attention!

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