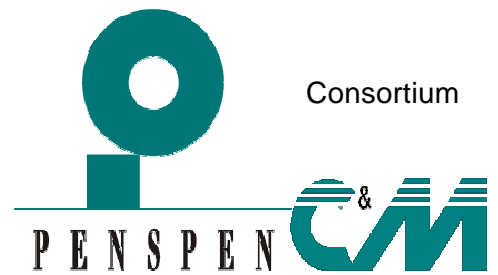


# **“ICGB” AD**

## ***FEED & EIA for Natural Gas Interconnector Greece – Bulgaria (IGB) Project***

### ***ICGB AD Contract No.C –17–2011***

#### ***Environmental Impact Assessment Study - Greek Part***



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**REVISION AND AUTHORISATION RECORD**

Rev	Date	Description	By	Chkd	PM
A	08/08/2012	DRAFT Issue to Client for Review	A.K.	J.P.	M.K.
0	10/09/2012	Issue to Client for Review	A.K.	I.Π.	M.K.



## 1. INTRODUCTION

### 1.1 Context of the Project

ICGB AD is a company incorporated with the scope of financing, developing, building, owning and operating on a long-term basis the gas interconnector between Greece and Bulgaria (the "Gas Interconnector Greece-Bulgaria" or "IGB Project").

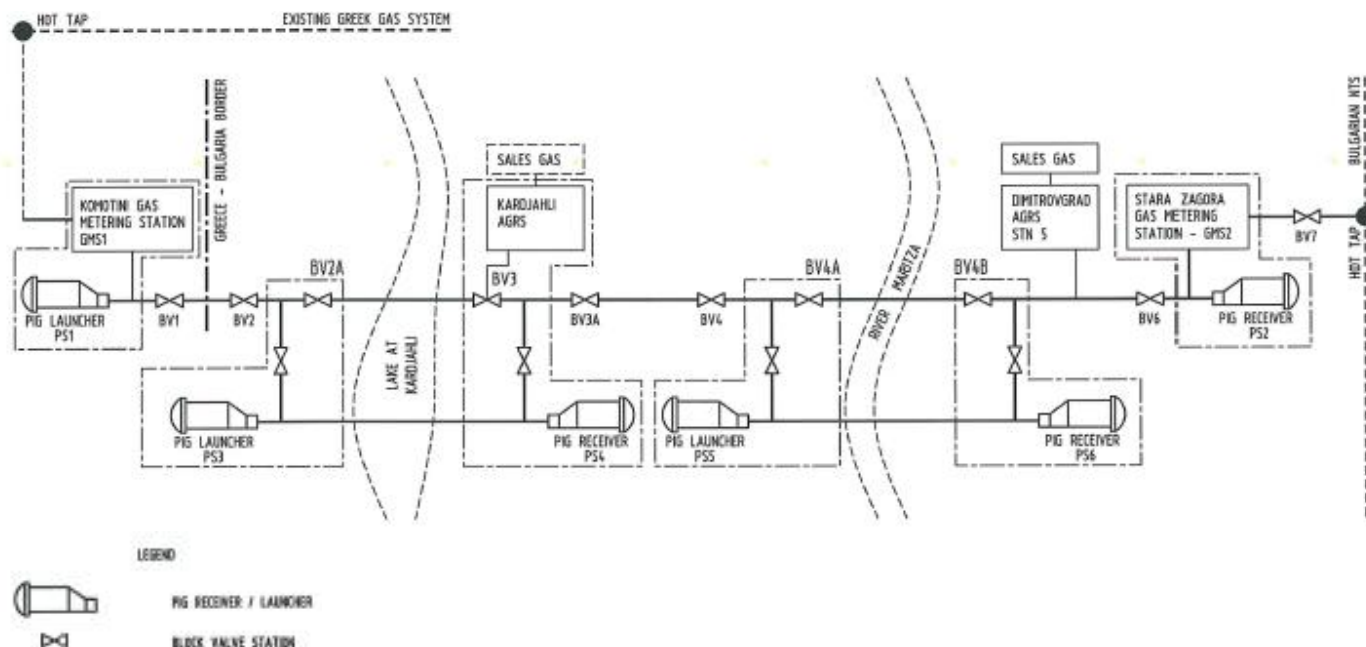
The IGB buried pipeline will transport natural gas over the border between Greece and Bulgaria, connecting the existing Komotini Compressor Station in Greece with an existing gas pipeline near the Bulgarian town of Stara Zagora. The proposed pipeline will measure a total distance of approximately **182 Km**, (about **31.5 Km in Greece** and **150.5 Km in Bulgaria**).

The design of this bi-directional pipeline system shall be in accordance with the internationally recognized codes of practice: EN1594 and ASME B31.8, with the recent Hellenic No. Δ3/A/OIK. 4303 ΠΕ 26510 (ΦΕΚ 603Β' 5-3-2012) Technical Regulation "Natural Gas Transmission Systems with Maximum Operating Pressure over 19 bar" and also in conjunction with Bulgarian Ordinances, for the safe transportation of **3bcm/yr** of gas initially, with the provision for the future expansion up to a maximum technical capacity of **5bcm/yr**.

The following is a summary of the main components of the project:

- High pressure gas transmission pipeline of nominal OD 32" (812,8 mm) between Komotini and Stara Zagora in Bulgaria; Greek part about 31.5 Km and Bulgarian Part about 150.5 Km.
- Ten (10) Block Valve Stations (BVs) along the route of the pipeline, in compliance with applicable norms, one (1) in Greece and nine (9) in Bulgaria.
- Gas Metering Station (GMS) Komotini and Pigging Launcher Station (PS) in Komotini
- Metering and Pressure Reducing Station in Kardjali, Bulgaria ;
- Gas pipeline connection along with metering and Pressure Regulating Station in Dimitrovgrad Bulgaria;
- Gas Metering Station (GMS) and Pigging Receiver Station (PS) in Stara Zagora Bulgaria;
- Integrated Control and telecommunication systems.
- Dispatch Center and operation and maintenance base (O&M Base) in Haskovo, Bulgaria.
- Provision for future compressor facilities in Bulgaria.
- Various ancillary facilities to support the abovementioned infrastructure.

Figure 1.1 Schematic Drawing of the IGB Project



This Project refers to the construction and Operation of a **Work of National Importance, Public Benefit and in General Public Interest**, as it is explicitly stated in Chapter Δ', Article 176, paragraphs 1 & 2 of Law 4001 - official journal of the Hellenic republic 179A' of 22-08-2011.

For the above project a Preliminary Assessment of Environmental Requirements Procedure (ΠΠΠΑ in Greek) was conducted, according to the latest Greek Law (Law 4014/2011 ΦΕΚ 209/Α'). This procedure concluded to a **Positive Pronouncement** on the PEIA Study after taking into account all the opinions of the involved authorities. (ΑΠ οικ 200504 12-07-2012 included in APPENDIX A)

## 1.2

### Project Owner

The project owner is ICGB AD, a company, entered into the Commercial Registry of the Registry Agency of Bulgaria, under unified identification code 201383265, having a registered office and address of management at 66 Pancho Vladigerov Blvd., District Lyulin 2, Sofia, Bulgaria.

ICGB is duly represented by the Executive Officers Mr. Konstantinos Karayiannakos and Mr. Vanyo Slaveikov.

## 1.3

### Contact Information

The contact person for the Environmental Impact Assessment Study, regarding the Greek Section, in ICGB AD is Mr. Konstantinos Tyroyiannis.

The present Environmental Impact (EIA) Study has been elaborated by the consortium of PENSPEN Ltd – C&M Engineering S.A. in the context of contract C-17-2011 awarded by ICGB AD to the consortium of PENSPEN Ltd – C&M Engineering S.A.

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Project Responsible of the current study is Mr. Emmanuel Kaliorakis who is the contact person.

## 1.4

### Project Design Philosophy

The IGB buried pipeline will transport natural gas over the border between Greece and Bulgaria, connecting the existing Komotini Station in Greece with an existing gas pipeline near the Bulgarian town of Stara Zagora. The proposed pipeline will measure a total distance of approximately **182 Km**, (about **31.5 Km in Greece** and **150.5 Km in Bulgaria**).

The design of this bi-directional pipeline system shall be in accordance with the internationally recognized codes of practice: EN1594 and ASME B31.8, and also in conjunction with Bulgarian Ordinances, for the safe transportation of 3bcm/yr of gas initially, with the provision for the future expansion up to a maximum technical capacity of **5bcm/yr**. The project also includes the construction of the following Above Ground Installations (AGIs):

- 2 off Gas Metering Stations (GMS) and 2 off Pigging Stations (PS), one at Komotini and the other one near Stara Zagora;
- Four (4) intermediate Pigging Stations (PS), on either side of lake Kardjali and river Maritza in Bulgaria.
- Ten (10) off Block Valve Stations (BVs), one (1) in Greece and nine (9) within Bulgaria;
- 2 off Offtakes and Automated Gas Regulation Stations (AGRSs) at locations close to the Bulgarian towns of Kardjali and Dimitrovgrad.
- 1 off Dispatch / Operational and Maintenance Base in Haskovo, Bulgaria.

## 1.5

### EIA Study Methodology.

#### 1.5.1

#### Project Classification according to the Greek Legislation

The initial classification of project in the categories established by Law 3010/02 was introduced in Joint Ministerial Decision 15393/02, according to which, natural gas pipelines operating at a pressure of more than 25 bar and the related installations (M/R, etc) are classified in category AI – with the most potentially significant expected impacts. This classification did not change with the latest Ministerial Decision 1958 ΥΠΕΚΑ (ΦΕΚ 21Β' 2012)

with which the Gaseous Fuel Transmission Pipelines and all their supporting facilities (metering and regulation stations etc.) with total length of  $\geq 20\text{Km}$  or Operating Pressure  $\geq 19$  bar are classified as Sub-Category A1 projects.

Group 11<sup>th</sup> : Energy, Fuel and Chemicals Transport

Sub-category: **A1**

$\alpha/\alpha$  3 : Gaseous Fuel Transmission Pipelines and all their supporting facilities (metering and regulation stations etc.) with total length of  $\geq 20\text{Km}$  or Operating Pressure  $\geq 19$  bar.

### 1.5.2

#### EIA Study Methodology

For the above project a Preliminary Assessment of Environmental Requirements Procedure (ΠΠΠΑ in Greek) was conducted, according to the latest Greek Law (Law 4014/2011 ΦΕΚ 209/Α'). This procedure concluded to a **Positive Pronouncement** on the PEIA Study after taking into account all the opinions of the involved authorities. (ΑΠ οικ 200504 12-07-2012)

The contents of the current study are based on the ministerial decree (ΚΥΑ) ΗΠ 11014/703/Φ104 ΦΕΚ 332/Β' 20-3-2003 «Preliminary Environmental Assessment (Π.Π.Ε.Α.) and Issuance of Environmental Terms (Ε.Π.Ο.) according to Article 4 of law 1650/1986 (ΦΕΚ Α'160) as replaced by Article 2 of Law 3010/2002 "Harmonization of Law 1650/1986 with Directives 97/11 E.U. and 96/61 E.U., etc" (Article 3) and amended by the recent Law 4014/2011 ΦΕΚ 209/Α' (Articles 2 & 11) and includes information on (Appendix II of Law 1014/2011) :

- a) The allowed Land Uses in the project area.
- b) A description of the project location, its design and technical characteristics during construction and operation. A description of the main construction methods, the nature and quantities of the materials used as well as the expected types and quantities of emissions to water, atmosphere, noise, vibrations, radiation during the construction and operation of the proposed project.
- c) A description and assessment of the alternative solutions (including the "no project" solution) that have been examined by the project owner. A comparison of the above solutions considering the location, size & technology as well as a presentation of the main reasons for the selection of the proposed solution must also be included taking into account the environmental impacts.
- d) A description of the physical and man-made environmental aspects that could be affected from the proposed project including population, flora & fauna, habitats, soil, water, air, climate, the architectural, cultural and historical heritage, the landscape and the interaction between them.

- e) A description, estimation and assessment of the possible significant impacts that the proposed project may cause to the environment from : the use of physical resources, the emission of pollutants, and waste disposal. The data and methods for the prediction and estimation of the environmental impacts with reference to their validity should be included as well as a reference to possible problems in the required data collection.
- f) A detailed description of the measures that will be taken to avoid, decrease, restore and compensate the significant adverse environmental impacts of the project.
- g) A Plan for Environmental Management and Monitoring that will be implemented in order to assure the effective protection of the environment and implementation of the proposed measures which will also include the monitoring program.
- h) A non technical abstract of the information included in the EIA study.
- i) Any studies that may have been elaborated during the Preliminary Assessment of Environmental Requirements Procedure (if followed) which are included as EIA study appendices.

The text and drawings of this Environmental Impact Assessment Study are also submitted in electronic form in the DVD disc attached to the study.

### 1.5.3 Level of coverage of environmental data

The data used in EIA studies are collected from validated resources (Ministries, State Agencies and Local Authorities) or site inspections and refer to a corridor of about 1 Km of either side of the proposed (and alternative) route(s).

### 1.5.4 EIA Study Team

This study was elaborated by the consortium Penspen Ltd- C&M Engineering S.A in co-operation with the Environmental Consultants Company SYBILLA Ltd. The study team consisted of the following scientists :

- Panagiotis Kappos, Mech. Engineer, Project Director.
- Emmanuel Kaliorakis, Mech. Engineer, Deputy Project Manager, Project Responsible for this Study.
- John K. Panagopoulos, Chem. Engineer MSc (Registered under the Ministry Of Environment, Energy & Climatic Change) who signs this study as required by the Greek Law.
- Thanasis N. Karayannis, Chem. Engineer (Registered under the Ministry Of Environment, Energy & Climatic Change) who co-signs this study as required by the Greek Law.
- Martha Diasakou, Chem. Engineer, Process Mech/ Dpt. Head
- Theodora Kondodima, Civil Engineer, Permitting

- Petros Karayannis, Senior Pipeline Routing Designer
- Professor G. Migiros, Geologist, Head of the Geology & Mineralogy Laboratory of the Agricultural University of Athens.
- Dr. Ioannis Papanikolaou, Geologist, Elected Senior Lecturer, Laboratory of Mineralogy-Geology, Department of Earth and Atmospheric Sciences, Agricultural University of Athens
- Professor K. Makropoulos, Professor of Seismology – University of Athens, Director of the Geodynamic Institute of the National Observatory of Athens
- Eleni Gaki, Environmental Engineer.



## 2. **Executive Summary**

### 2.1 **General Considerations**

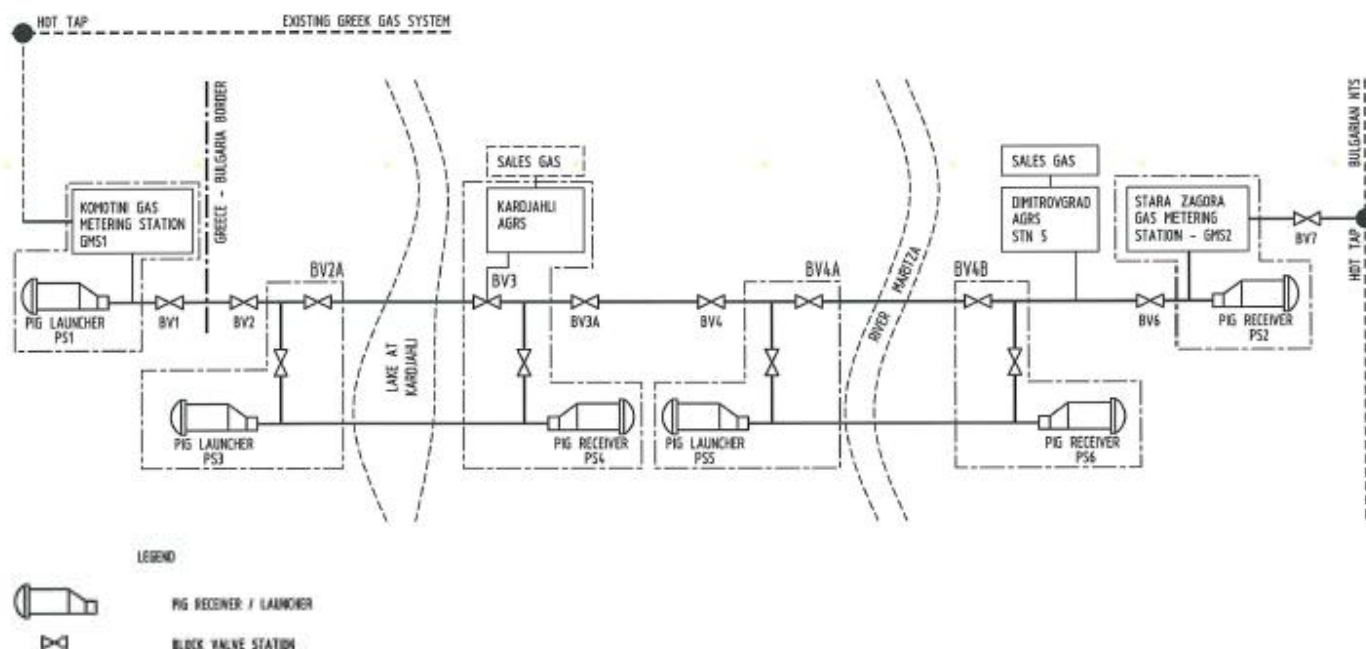
ICGB AD is a company incorporated with the scope of financing, developing, building, owning and operating on a long-term basis the gas interconnector between Greece and Bulgaria (the "Gas Interconnector Greece-Bulgaria" or "IGB Project"). The shareholders of ICGB are the Bulgarian company BEH 50% and IGI Posidon 50% (i.e DEPA 25% and Italian EDISON SpA 25% since they are equal shareholders of IGI Posidon).

The IGB buried pipeline will transport natural gas over the border between Greece and Bulgaria, connecting the existing Komotini Compressor Station in Greece with an existing gas pipeline near the Bulgarian town of Stara Zagora. The proposed pipeline will measure a total distance of approximately **182 Km**, (about **31.5 Km in Greece** and **150.5 Km in Bulgaria**).

The following is a summary of the main components of the project:

- High pressure gas transmission pipeline of nominal OD 32" (812,8 mm) between Komotini and Stara Zagora in Bulgaria; Greek part about 31.5 Km and Bulgarian Part about 150.5 Km.
- Ten (10) Block Valve Stations (BVs) along the route of the pipeline, in compliance with applicable norms, one (1) in Greece and nine (9) in Bulgaria.
- Gas Metering Station (GMS) Komotini and Pigging Launcher Station (PS) in Komotini
- Metering and Pressure Reducing Station in Kardjali, Bulgaria ;
- Gas pipeline connection along with metering and Pressure Regulating Station in Dimitrovgrad Bulgaria;
- Gas Metering Station (GMS) and Pigging Receiver Station (PS) in Stara Zagora Bulgaria;
- Integrated Control and telecommunication systems.
- Dispatch Center and operation and maintenance base (O&M Base) in Haskovo, Bulgaria.
- Provision for future compressor facilities in Bulgaria.
- Various ancillary facilities to support the abovementioned infrastructure.

Figure 2.1 Schematic Drawing of the IGB Project



The present document comprises the Environmental Impact Assessment (PEIA) Study regarding the Greek Part of the IGB Project. In specific, the study covers the part of the pipeline from Komotini to the Greek-Bulgarian border, including the Gas Metering Station (GMS) Komotini and Pigging Station (PS) Komotini along with all the necessary auxiliary equipment and the first Block Valve Station (BVs) that will be installed in the Greek Territory.

For the above project a Preliminary Assessment of Environmental Requirements Procedure (ΠΠΠΑ in Greek) was conducted, according to the latest Greek Law (Law 4014/2011 ΦΕΚ 209/Α'). This procedure concluded to a **Positive Pronouncement** on the PEIA Study after taking into account all the opinions of the involved authorities. (ΑΠ οικ 200504 12-07-2012)

The present Environmental Impact Assessment Study has a two-fold aim, and this is reflected in the structure and the content of this document:

- To identify any contentious issues related to the proposed routing, from the environment point of view, so that they could be corrected by design alterations and/or prevention and restoration measures.
- To provide the basis for the Determination of the Environmental Terms Document (ΑΕΠΟ in Greek), which is the Final part of the Environmental Permitting Procedure according to the latest Greek Law (Law 4014/2011 ΦΕΚ 209/Α').

The Environmental Terms Document (ΑΕΠΟ in Greek) imposes conditions, terms, constraints and sometimes alterations in the proposed project considering its location, size, type and technology as well as its technical characteristics. It also institutes the necessary prevention and

restoration measures along with monitoring and compensative actions. The environmental terms first aim is the avoidance or minimization of the environmental impacts while the restoration of the environment is a secondary goal.

The study follows the general structure required by the Greek authorities for the EIA Study. This structure provides for a description of the affected environment, a description of the proposed project including the alternative solutions, an evaluation of the possible environmental impacts caused by the development and the proposition of mitigation measures for those impacts including the proposed Environmental Management and Monitoring System (EMS).

## 2.2

### Pipeline Routing – Alternative Routing Solutions

The routing of the High Pressure gas pipeline was chosen based on criteria as the safety of the population, the protection of ecosystems and the terrain structure. These criteria are the same as those observed in other high pressure gas pipelines designs of the existing Hellenic Gas Transmission System, which was recently relocated from DEPA and transferred to DESFA S.A.

### 2.2.1

#### Short Recommended Route Description

The routing of the pipeline has a total length 31479.87m. (K0-K109), beginning at point K0 (Metering station and Pigging Station), which is located at the south-western edge of Industrial Area of Komotini and ending at the connection point K109 of the Greek section pipeline with the rest (Bulgarian) section of the pipeline at the border of Greece – Bulgaria.

With direction from south to north, the routing is located consecutively as follows:

Segment K0-K20 (0–11km): The routing of the pipeline has north western direction at first and northern afterwards, it starts south-western from the Industrial Area of Komotini, passes from Metering Station (GMS1) and Pigging Station (PS1) “KOMOTINI” (K1+363.56) that are going to be installed in a common land plot northern from the settlement Fylakas, continues southern at first and western afterwards from the settlement Thrylorio, eastern from the settlement Roditis and the city of Komotini and ends between the settlements Karydia and Kalchas, passing through extended cultivated areas of cotton and wheat.

It crosses mostly with the asphalt road Fylakas – Thrylorio (K3+71.89m), the under study DESFA’s Greece – Italy (IGI) natural gas pipeline and the existing Komotini - Thessaloniki natural gas pipeline of DESFA (K4+209.36m. & K4+221.72m), the Old National Road Alexandroupoli – Komotini (K8+88.56m), the stream “Trelochimaros” (K18+225.50m) and at the end, the Regional road Karydia – Kalchas (K19+989.66m).

Segment K20-K36 (11-16km): With north western direction the routing of the pipeline passes south-western from the settlement Tychiro, passing through hilly area of gentle slopes with cultivations, trees and heath parts

and crosses mostly the asphalt road to Tychiro (K25+21.68m), the under construction (construction works haven't started yet) New National Road “Komotini – Nimfea – Greek-Bulgarian Borders – Axis 75” (K32A+100.36m) and the asphalt road to Pandrosos (K33+24.43m). In this segment the following rerouting that the local Forest Inspection Authority demanded during the Preliminary Assessment of Environmental Requirements Procedure was realized :

- In the area between the points K32 - K33 (of the initial routing REC), where a pine forest exists (from reforestation in order to protect the settlements below it as well as the city of Komotini from severe floods) it was required to bypass the abovementioned forest by relocating the pipeline to the east (Part K29-K30-K31-K32-K32A-K32B-K32C-K33 of Final Routing REC).

Segment K36-K109 (16-31.5km): The routing of the pipeline has northern direction, passing western at first and northern afterwards from the settlement Pandrosos, western from the settlement Nimfea, from the Block Valve Station (BV1) “Nimfea” (K84+72.66m), which is located 4km about western from the settlement Mytikas, it continues western from the settlement Ano Mytikas and ends to the Greek – Bulgarian borders, passing through mountainous area with trees and heath parts. It crosses mostly with the ravine Karydorema (K36+30.27m. & K46+63.13m) and the New National Road “Komotini – Nimfea – Greek-Bulgarian Borders – Axis 75” (K92+55.36m) above a tunnel that has already constructed. In this segment the following rerouting that the local Forest Inspection Authority demanded during the Preliminary Assessment of Environmental Requirements Procedure was realized :

- In the area between the points K37 - K39 (of the initial routing REC), where the pipeline is near the “Nimfea” forest, it has been relocated for about 15m to the east for fire protection reasons. (Part K37-K38-K39 of Final Routing REC).

The local Forest Inspection Authority was informed on the abovementioned reroutings and stated their agreement with its initial demands (see document with No. 15052/27-8-2012 attached in Appendix A).

Concerning the administrative structure of the routing, the pipeline is located at the Region of East Macedonia – Thrace, at the Prefecture of Rodopi and at the Municipality of Komotini.

## 2.2.2 Short description of alternative routes

### 2.2.2.1 Alternative Routing 1 (ALT-1)

The Alternative routing 1 of the pipeline has a total length of 28588.82m., beginning at the existing Natural Gas Station of DESFA, which is in the south western edge of the Industrial Area of Komotini and ending at the connection point of the Greek section of the pipeline with the rest (Bulgarian) section of the pipeline at the border of Greece – Bulgaria.

With north western direction, the Alternative routing 1 is located consecutively as follows:

Segment 0-11.1km: The routing of the pipeline has north western direction, begins from the existing Natural Gas Station of DESFA, which is in the south western edge of the Industrial Area of Komotini, continues south at first and west afterwards from the settlement Thrylorio, eastern from the settlement Roditis and the city of Komotini and ends south eastern from the settlement Karydia, passing through extended cultivated areas of cotton and wheat. The main crossings are with the asphalt road Fylakas – Thrylorio (1km), the Old National Road Alexandroupoli – Komotini (4.4km), a stream (9.4km), the under construction (construction works haven't started yet) New National Road “Komotini – Nimfea – Greek-Bulgarian Borders – Axis 75” (10.2km) and at the end the asphalt road Ifaistos – Stylario (11km).

Segment 11.1-15km: With north western direction the routing of the pipeline passes eastern at first and northern afterwards from the settlement Karydia, south western at first and western afterwards from the settlement Tychiro and ends south eastern from the settlement Pandrosos, passing through hilly area of gentle slopes with cultivations, trees and heath parts. It crosses mostly the asphalt road Karydia – Pandrosos (14.4km) and at the end a stream (14.7km).

Segment 15–28.6km: The routing of the pipeline has northern direction, passing western from the settlement Pandrosos, continues eastern from the ancient Byzantine castle at the area of Pandrosos, western from the settlement Ano Mytikas and ends to the Greek – Bulgarian borders, about 400m western from the end of the Recommended routing. It is passing through mountainous area with trees and heath parts and crosses the asphalt road to the army camp of Nimfea at many points and the New National Road “Komotini – Nimfea – Greek-Bulgarian Border – Axis 75” (26.1km) above a tunnel that has already been constructed.

#### 2.2.2.2 Alternative Routing 2 (ALT-2)

The Alternative routing 2 of the pipeline has a total length of 30262.13m., beginning at the Metering Station and Pigging Station (PS1), that are going to be installed in a common land plot near the existing Natural Gas Station of DESFA, which is in the Industrial Area of Komotini and ending at the connection point of the Greek section of the pipeline with the rest (Bulgarian) section of the pipeline at the border of Greece – Bulgaria.

With direction from south to north, the Alternative routing 2 is located consecutively as follows:

Segment 0–12.2km: With north western direction, the routing of the pipeline starts south western of the Industrial Area of Komotini, it continues south at first and west afterwards from the settlement Thrylorio, eastern from the settlement Roditis and the city of Komotini and ends western from the settlement Karydia, passing through extended cultivated areas of cotton and wheat.

The main crossings are with the under study DESFA Greece – Italy (IGI) natural gas pipeline and the existing Komotini - Thessaloniki natural gas pipeline of DESFA (1.4km), the asphalt road Fylakas – Thrylorio (1.9km),

the Old National Road Alexandroupoli – Komotini (5.6km), a stream (10.6km), the under construction (construction works haven't started yet) New National Road “Komotini – Nimfea – Greek-Bulgarian Border – Axis 75” (11.2km) and at the end the asphalt road Ifaistos – Stylario (12.2km).

Segment 12.2-18km: The routing of the pipeline has northern direction, passes north eastern from the settlement Karydia, western at first and northern afterwards from the settlement Pandrosos, passing through hilly area of gentle slopes with cultivations, trees and heath parts. It crosses mostly the asphalt road Karydia – Pandrosos (15.9km) and at the end a stream at many points.

Segment 18–30.3km: The routing of the pipeline has northern direction, passing western from the settlements Nimfea and Ano Mytikas and ends to the Greek – Bulgarian borders, 900m about eastern from the point that the Recommended routing ends. It is passing through mountainous area with trees and heath parts and crosses mostly the New National Road “Komotini – Nimfea – Greek-Bulgarian Border – Axis 75” (28.4km) above a tunnel that has already constructed.

## 2.3

### Works Area – Routing Philosophy

The routing of the High Pressure gas pipeline was chosen based on criteria as the safety of the population, the protection of ecosystems and the terrain structure. The construction works are carried out over a Working Width (ROW) of 26 m total for the 32” pipeline.

The works consist of the reception trench opening, performing welding of pipeline, the lowering, inspection and testing of the pipeline and finally its cover. Especially for woodland and perennial crops, the work zone will be reduced to 16 m total for the 32” pipeline.

## 2.4

### Environmental Aspects & Impacts

The Environmental Aspects and Impacts of the project are mainly connected with its design and construction phases.

During the design (mainly the routing selection) the best solution should be selected in order NOT to create problems in environmentally sensitive areas, maintaining in the same time the engineering and financial viability of the whole project.

The limited environmental impacts of the project occur during the construction phase and are presented in Chapter 7. During its operational phase the project shall not pose any significant environmental threat.

It is concluded that with the implementation of careful initial routing design in close co-operation with the state and local authorities and the provision of all the measures dictated by the International Standards, there shall not be any significant adverse effects from the construction works. The guidelines & recommendations of the local authorities are taken into consideration in order to minimize the environmental impacts.



The positive consequences of the construction and operation of the proposed pipeline for both the environment and the local and national economy should be noted with emphasis.

## **2.5 Protection & Reinstatement Measures**

After completion of construction work, the work area will be restored to its original state. The restorations, beyond the horizontal area of restoration work, concern the restoration of the natural intersections / artificial barriers, the protection of slopes, the relocation of any plant systems and finally the restoration of the beauty and unity of the landscape area along the project route. Details on the abovementioned protection & reinstatement measures are presented in Chapter 8.

## **2.6 Environmental Management and Monitoring System**

During the construction and operation phases of the project an Environmental Management and Monitoring – EMMS will be developed and implemented. The main components of the above system (Policy, Organization Chart, Monitoring Program etc.) will be submitted to the Permitting authority after the selection of the Construction contractor and prior to the start of works. The system will be based on the key elements of the ISO 14001:2004 standard and is presented in Chapter 9.

## **2.7 Conclusions**

The Proposed Routing is the best both technically and environmentally, compared with two (2) other options that were examined. The present Environmental Impact Assessment report has examined any impacts that may arise from this and proposes the necessary measures of protection. Special emphasis has been given in the identification of areas that may create problems in the development of the project.

It is concluded that the project, during its construction and operation phases, does not cause any significant, long-lasting and irreversible impacts both to the physical and the man-made environment.

The benefits generated by the project are mainly related to the reduction of air pollution that arises from burning natural gas instead of liquid and solid fuels that are currently consumed in the region and the gradual replacement of the fuel in central heating and industries at the cities that will be serviced by the pipeline.

Finally, the project is associated with social and economic benefits generated by reducing energy costs, increasing jobs during the implementation / operation of the project and general development activities carried out in the region of Thrace.

The pipeline design work was done in close cooperation with local authorities and utilized all the suggestions that emerged during the Preliminary Assessment of Environmental Requirements Procedure to achieve an optimum environmental design.

For all these reasons, the Proposed Routing of the IGB Gas Pipeline, is environmentally acceptable and **the issuance of a decision approving the environmental terms document is proposed.**

## 2.8

### Summary of Project Data

<b>PROJECT</b>	
NAME	Interconnector Greece-Bulgaria (IGB) Project - Greek Part
TYPE	High Pressure (>25bar) Natural Gas Pipeline
PROJECT SIZE	Pipeline Diameter : 32" Pipeline Length : 31.5 Km (Proposed routing) Design Pressure : 80 barg
LOCATION	Regional Department of Rodopi Region of Eastern Macedonia & Thrace
<b>PROJECT OWNER</b>	ICGB AD
ADDRESS	66 Pancho Vladigerov Blvd., District Lyulin 2, Sofia, Bulgaria.
REPRESENTATIVE	
	Project Manager: Mr. Vanyo Slaveikov Telephone: +359 888 567 180 e-mail: <a href="mailto:v.slaveikov@gmail.com">v.slaveikov@gmail.com</a>  Deputy Project Manager: George Kostopoulos Telephone: +30 210 2701144 e-mail: <a href="mailto:g.kostopoulos@depa.gr">g.kostopoulos@depa.gr</a>
<b>EIA STUDY TEAM</b>	
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TELEPHONE	+30-210-7220014
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E-MAIL	<a href="mailto:mail@cmengineering.gr">mail@cmengineering.gr</a>
PROJECT RESPONSIBLE	Emmanuel Kaliorakis



### **3. Legislative Framework**

#### **3.1 General Remarks**

Some general remarks outlining the Government Structure and the major Environmental Organizations are presented below:

Greek Government Structure

- National Parliament
- Central Government Ministries
- Regions (13)
- Municipalities (325)

The laws are set by the National Parliament.

The Key Government Environmental Organization is the Ministry of Environment, Energy & Climate Change (MEECC). The MEECC in its current form was created in 2009 and is responsible for all the Environmental policy in Greece. Before that, the environment policy was part of the “Ministry of Environment, Physical Planning and Public Works” which was created during the decade of 1980.

Other National Ministries Involved in Environmental Issues

- Ministry of Agricultural Development & Food Products.
- Ministry of the Interior, Public Administration & Decentralization.
- Ministry of Education, Religion, Culture and Sports.
- Ministry of Development, Competitiveness, Transport, Infrastructure & Networks.

#### **3.2 Environmental Permitting Procedure**

The requirement for an environmental impact assessment in projects likely to have an impact on the environment is defined in Law 1650/86, the Greek law on the protection of the environment.

A review and update of Law 1650/86 is provided by Law 3010/02, which establishes categories of projects according to the anticipated impacts to the environment, and defines the procedure for environmental permitting.

The classification of project in the categories established by Law 3010/02 is introduced in Joint Ministerial Decision 15393/02, according to which, natural gas pipelines operating at a pressure of more than 25 bar and the related installations (M/R, etc) are classified in category AI. This classification did not change with the latest Ministerial Decision 1958 ΥΠΕΚΑ (ΦΕΚ 21Β' 2012) with which the Gaseous Fuel Transmission Pipelines and all their supporting facilities (metering and regulation stations etc.) with total length of  $\geq 20\text{Km}$  or Operating Pressure  $\geq 19$  bar are classified as Sub-Category A1 projects.

A number of other Laws, Joint Ministerial Decisions or Presidential Decrees are relevant to specific issues of the project in question. Specific reference needs to be made to Presidential Decree 1180/81, which introduces acceptable limits for a number of environmental impacts of industrial developments, as well as limits for noise emissions depending on the type of the receiving environment.

The compliance of the proposed development with the provisions of the existing legislative framework is ensured by the issuing of Environmental Terms by the competent Authority.

The realization of the Preliminary Assessment of Environmental Requirements Procedure - PAER (ΠΠΠΑ in Greek), is the first part of the Environmental Permitting Procedure according to the latest Greek Law (Law 4014/2011). After the positive conclusion of the Preliminary Assessment of Environmental Requirements Procedure with the Decision ΑΠ 200504/12-07-2012 ΕΥΠΕ/ΥΠΕΚΑ, the Present Environmental Impact Assessment (EIA) Study is submitted.

The issuing of Environmental Terms document is the second part of the environmental permitting process and is realized after the opinions of all involved authorities are received and assessed.

### 3.3

#### **Applicable Legislation**

A compilation of the most significant Environmental Legislation relative to the project is presented in APPENDIX D.

The latest Greek Law (Law 4014 issued 21 Sep. 2011) which defines the updated Environmental Permitting procedures and, among others, replaces all the environment related permits with a single Environmental Terms Document, is noted.

Special emphasis should be given to the Law 4001/2011 where the present IGB project is explicitly mentioned in chapter Γ' (articles 165 – 177). The abovementioned law :

- Obliges the owners of urban, rural or forested areas to allow the necessary works for the installation of the pipeline (with the appropriate compensation)
- Declares a zone of **5 m** (instead of 4 until now) on either side of the pipeline axis where other works or planting of trees (with roots deeper than 60cm is prohibited.
- Specifies that an additional temporary ROW zone of **22 m** (total 10+22m) max can be declared (if needed) by a decision of the Minister of Environment, Energy and Climatic Change.
- Declares a zone of **20m** on either side of the pipeline axis where any kind of building is prohibited (outside urban plans areas)
- Specifies that the IGB owner company can use areas owned by municipalities to construct buildings and installations required by the pipeline (with the appropriate compensation).

- Specifies that forests and forest areas owned by the Greek State are given without compensation for use / construction of the project.

Finally the very recent decision ΥΠΕΚΑ 15277 (ΦΕΚ 1077Β' 09-04-2012) with which **the required by the forest laws intervention approval is now incorporated in the environmental terms document** is mentioned.

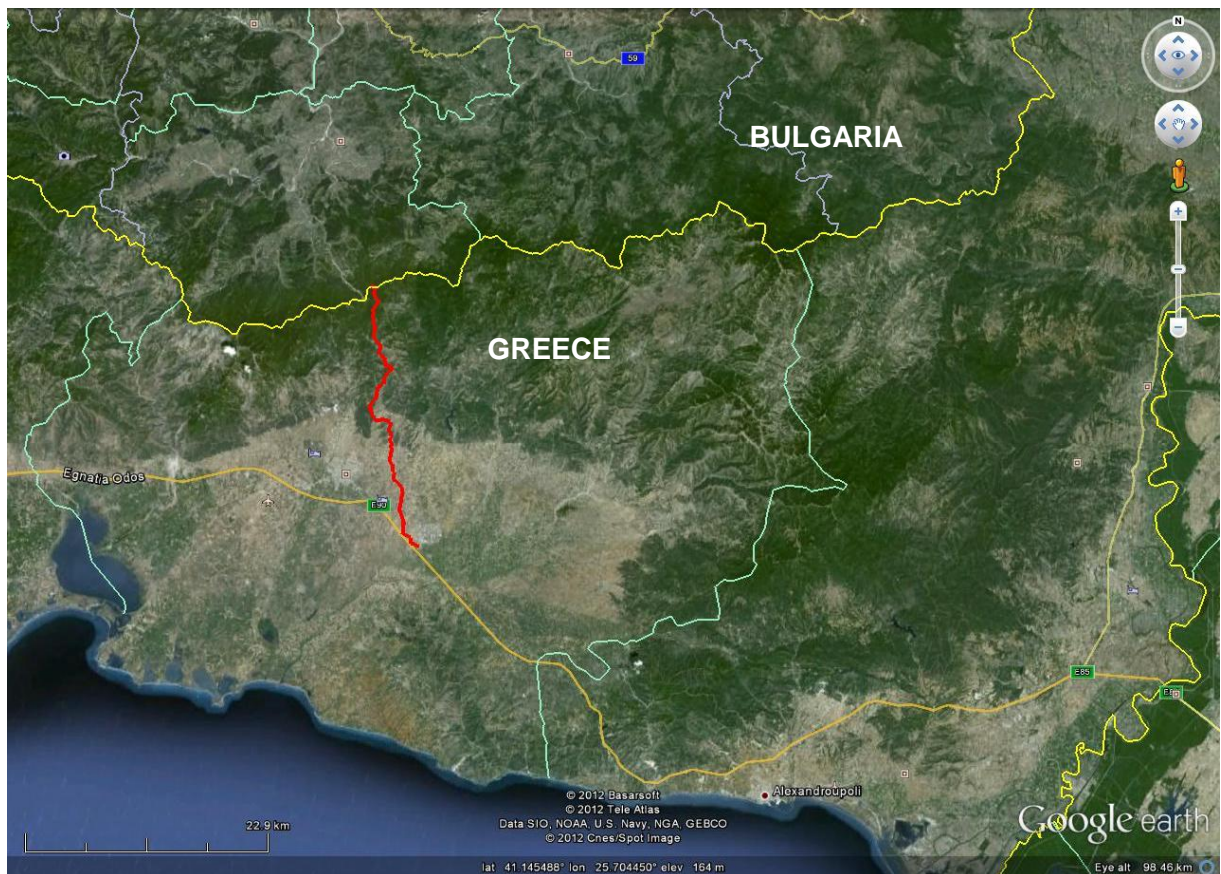


#### 4. Geographical Location, Area and Administration Responsible

##### 4.1 Project Geographical Location

The project area for the Greek part stretches from Komotini to the Greek-Bulgarian border in northern Greece, as shown in Figure 4.1. The alternative routes examined are presented in Figure 4.2. and Maps 10760/PL/P1/02/402 and 10760/PL/P1/02/402A in APPENDIX H. The whole length of the pipeline lies in the Municipality of Komotini, as shown in Figure 4.3.

**Figure 4.1** Project Overview Map (Greek Part).



## 4.2 **Regions, Regional Departments & Municipalities along the pipeline route. Authorities Involved.**

Due to the scale and nature of the Project, a number of administrations and authorities will be involved in the permitting process. A detailed reference to the authorities involved, is presented below.

In brief, the competent authority for issuing the Environmental Terms for the project is the Ministry of Environment, Energy and Climate Change (MEECC), Specific Department of Environment (EYPE).

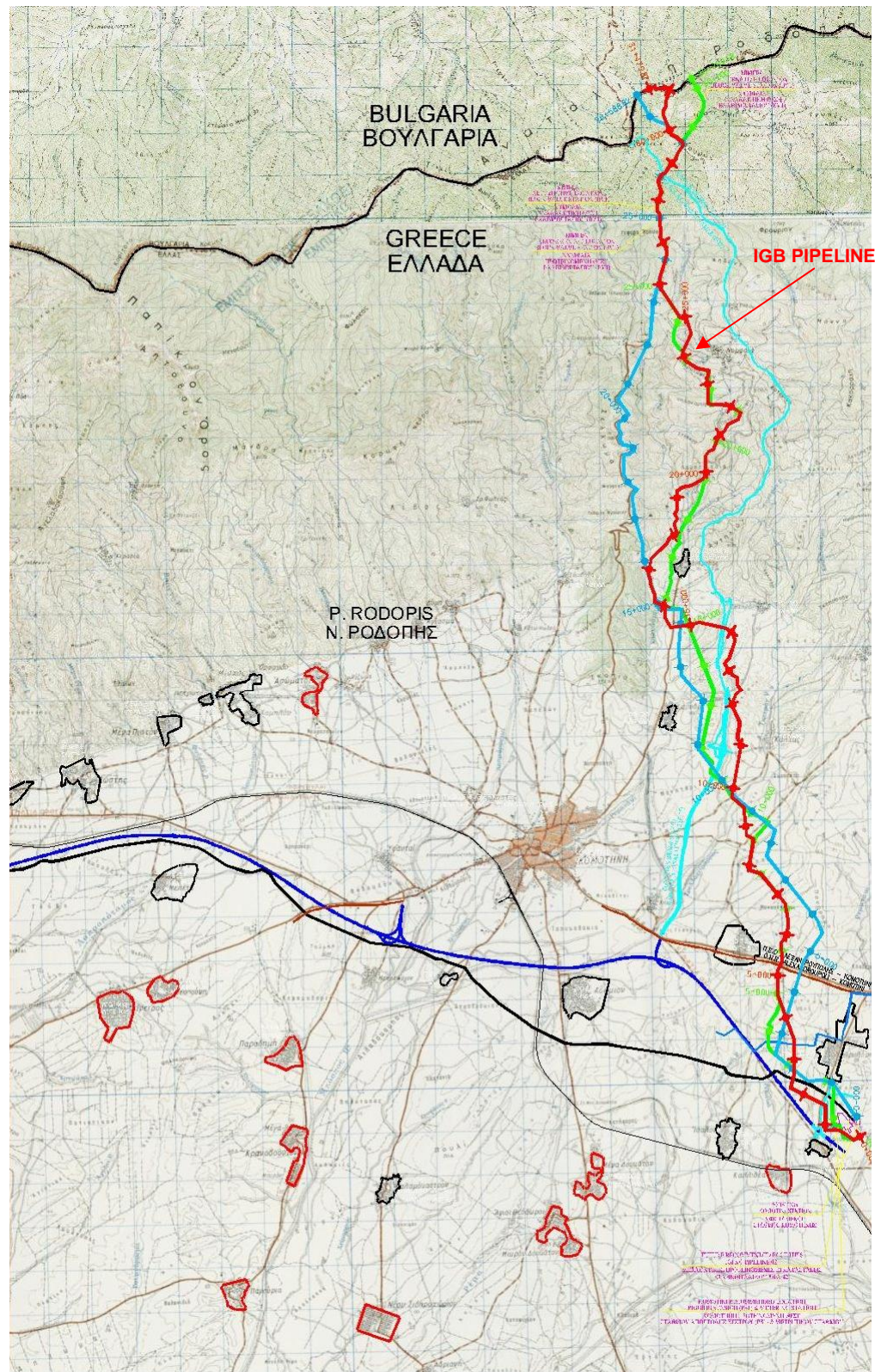
Other Ministry departments, Ministries and authorities that need to provide their consent or comment the Environmental Terms Document (ΑΕΠΟ in Greek) :

- The Ministry of Agriculture Development & Food products.
- The Ministry of Education, Religion, Culture & Sports.
- MEECC / Natural Environment Management Department.
- MEECC / Department of Planning.
- Ministry of Development, Competitiveness, Transport, Infrastructure & Networks.
- Ministry of Defence, and
- The Regional Council of Eastern Macedonia & Thrace.

In addition, several other authorities which are not DIRECTLY involved in the permitting process but are involved during the routing design phase due to the constraints posed by existing infrastructure and land use planning need to provide their opinions. All these authorities have been contacted and their opinions for the recommended route are documented. A detailed reference to the authorities involved, is presented in paragraph 4.3 and a comprehensive list in APPENDIX E.



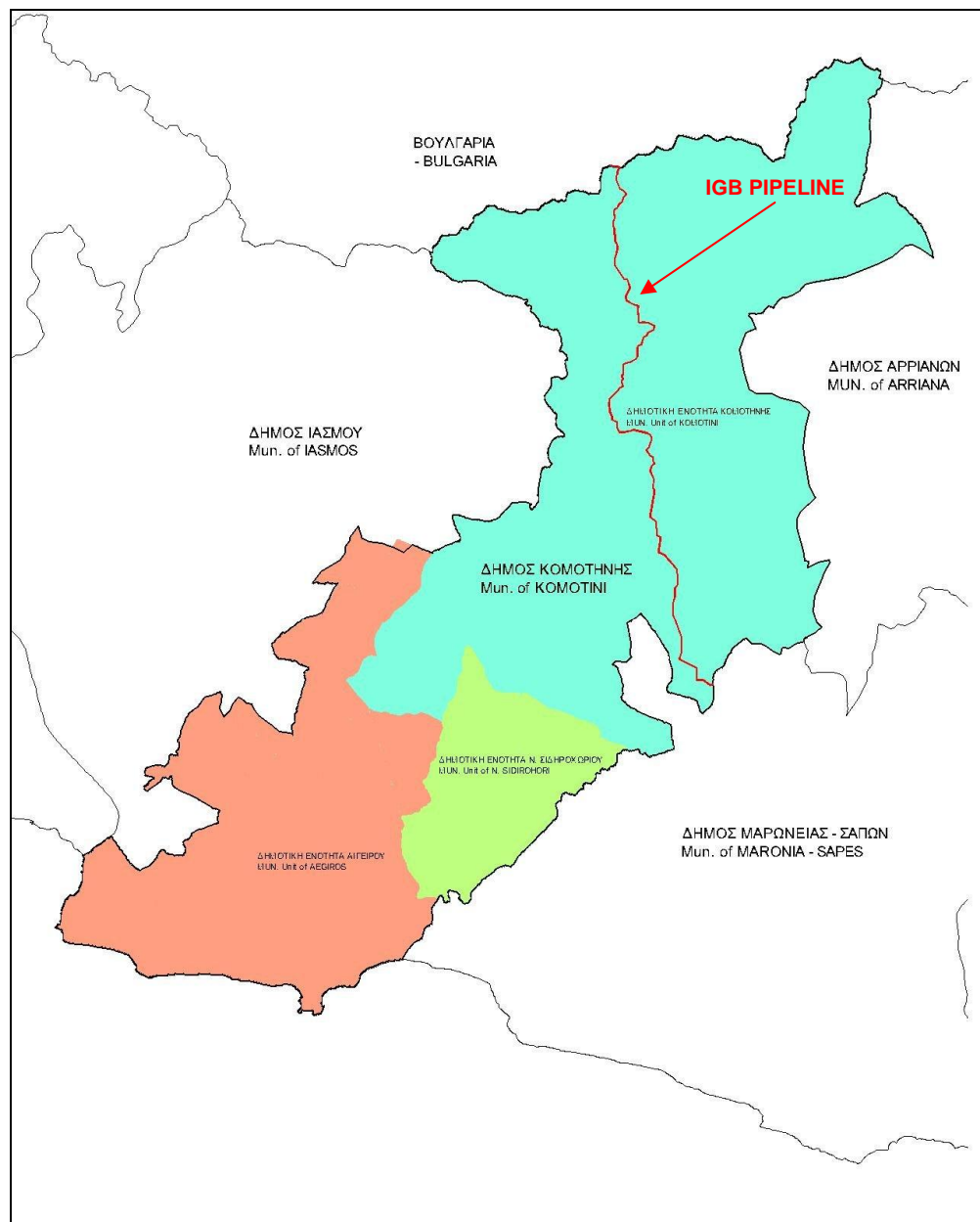
Figure 4.2 Project Geographical Area.



Under the new “Kallikrates Legislation”, most of the municipalities of Greece (also known as “Kapodistrias” municipalities) merged to create new larger municipalities.

The regional and municipal authorities of the project area are presented in the figures to follow :

**Figure 4.3** Municipalities and Municipal Units along the pipeline route.



Only the Municipality of Komotini lies in the proposed (and alternative) pipeline routing(s)



### 4.3 Involved Authorities – Correspondence – Recommendations

The sources from which the data was collected include:

#### **Regional Authorities - Region of Eastern Macedonia & Thrace**

##### Development Planning, Environment and Infrastructure

- General Directorate for Development Planning, Environment And Infrastructures / Environmental Dpt.
- General Directorate for Development Planning, Environment And Infrastructures / Environment & Water resources Dpt. - Reg. Sect. of Rodopi
- General Directorate for Development Planning, Environment And Infrastructures - Development Planning Division
- General Directorate for Development Planning, Environment And Infrastructures / Technical Projects Division
- General Directorate for Development Planning, Environment And Infrastructures / Technical Projects Division of Rodopi Regional Section

##### Agricultural Economy & Veterinary

- Agricultural Economy Directorate Region of Eastern Macedonia & Thrace
- Agricultural Economy & Veterinary Directorate - Region. Sect. of Rodopi
- General Directorate for Agricultural Economy & Veterinary - Directorate of Land Policy

##### Development

- General Directorate for Development
- Intermediate Management Authority - Region. of Eastern Macedonia & Thrace

#### **Decentralized Administration Authorities**

##### Environmental Authorities

- General Directorate of Planning & Environmental Policy
- General Directorate of Planning & Environmental Policy - Division of Environment and Spatial Planning - Department of Environment & Spatial Planning - Department of Urban Planning
- General Directorate of Planning & Environmental Policy - Division of Water EM-TH

##### Agricultural Authorities

- Agricultural Development Directorate

##### Forest Authorities

- Directorate for forest Co-ordination & Inspection
- General Directorate of Forest and Agricultural affairs.
- Forest Inspection Directorate of Rodopi

**Local Archaeological Authorities**

- 15th Byzantine Antiquities Inspection Authority
- IO' Classical Antiquities Inspection Authority
- Newer Antiquities Inspection Authority

**Municipal Services**

- Municipality of Komotini / City Planning Division Technical Services Division
- Komotini Municipal Water Supply - Sewage Corporation

**Central Authorities – Ministries**

- GENERAL SECRETARIAT OF PUBLIC WORKS
- Inspection of Mines of North Greece - MEECC
- Agricultural Engineering Directorate - Ministry of Transport Infrastructure and Networks
- Agricultural Engineering Projects & Design Directorate – Ministry of Agricultural development and food production.
- Dpt. Of Natural Environment Management - Ministry of Environment, Energy & Climatic Change
- General Development and Protection of Forests & Natural Environment
- Directorate of Aesthetic Forests - MEECC
- Byzantine Antiquities Inspection Directorate - Ministry of Culture & Tourism
- Classical Antiquities Inspection Directorate - Ministry of Culture & Tourism
- EGNATIA ODOS S.A.
- Greek Railway Organization / Infrastructure General Division, Studies Division & Production Division
- Projects Railway Company S.A.
- GEAOSE S.A.
- Greek Telecommunication Organization / Regions General Division
- Greek Telecommunication Organization / Region of North Greece
- Public Power Corporation (P.P.C.) - Department of Transmission System
- Public Power Corporation (P.P.C.) - Department of Transmission System New Projects
- Public Power Corporation (P.P.C.) - General Division of Mines
- Public Power Corporation (P.P.C.) - Department of Hydro-Electrical Projects
- Public Power Corporation (P.P.C.) - Department of Renewable Sources
- Civil Aviation Authority / Technical Services Division
- Industrial Development Bank
- Ministry of National Defense / National Defense General Staff
- Army General Staff Xanthi Dpt
- HMGS (ΓΥΣ) Authority

## NGOs

- Greek Ornithological Society

The comments and recommendations of the above authorities, as presented in their official responses during the Preliminary Assessment of Environmental Requirements Procedure, were all taken into account during the design phase of the design, so that the final proposed routing is the best solution.

The pronouncements of the authorities involved in the licensing process are summarized below and are presented in full in APPENDIX A together with the positive pronouncement of the Ministry of Environment.

1. The document No 56/11.01.12 of the IO' Classical Antiquities Inspection Authority in which no objections are raised (pronouncement under terms) for the proposed project.
2. The document No 825/19.01.12 of the Planning and Urban Environment Directorate of the MEECC in which no objections are raised for the proposed project.
3. The document No 20/24.01.12 of the 15th Byzantine Antiquities Inspection Authority, in which no objections are raised (pronouncement under terms) for the proposed project.
4. The document No 38/3552/03.02.12 of the Planning and Environment Protection Directorate of the Ministry of Agricultural development and food production in which it agrees on the proposed routing.
5. The document No Δ3/A/437/9.02.12 of the Petroleum Products Installations Directorate of the MEECC in which no objections are raised for the proposed project.
6. The document No 151/13.02.12 of the Agricultural Economy & Veterinary Directorate - Region. Sect. of Rodopi (with the No 5/2012 ΝΕΧΩΠ Minutes attached) with a positive pronouncement for the project.
7. The document No 10751/1.03.12 of the Forest Inspection and Coordination of the Decentralized Administration of Macedonia & Thrace (with the No. 311/3.02.12 document of the Forest Inspection Authority of Rodopi) in which no objections are raised (pronouncement under terms) for the proposed project. In the abovementioned document the following terms are imposed :
  - In the area between the points K32 - K33 (of the initial routing REC), where a pine forest exists (from reforestation in order to protect the settlements below it as well as the city of Komotini from severe floods) it is required to bypass the abovementioned forest by relocating the pipeline to the east.
  - In the area between the points K37 - K39 (of the initial routing REC), where the pipeline is near the “Nimfea” forest, it is proposed to be relocated for about 15m from the forest end to the east for fire protection reasons.
  - In the area between the points K101 to K105 (of the initial routing REC), where a reforested area is affected, it is proposed to reforest five times the affected area in a point that will be indicated by the local forest authority.

- In the context of taking fire protection measures it is proposed that the project owner constructs two (2) water tanks (with the additional capability of helicopter filling) one in the “Nymfea” forest and one in the “Frouros” military post in specific points that will be indicated by the local forest authority.
- 8. The document No 165250/750/7.03.12 of the Aesthetic Forests, National Parks and Hunting Directorate of MEECC, in which no objections are raised for the proposed project.
- 9. The document No APX/A1/Φ40/4029/225/20.02.12 Classical Antiquities Inspection Directorate - Ministry of Culture & Tourism, which no objections are raised (pronouncement under terms) for the proposed project.
- 10. The document No Φ.916.74/78/412092/Σ926/30.04.12 of the Infrastructure Directorate of the Hellenic Army General Staff which no objections are raised (pronouncement under terms) for the proposed project.
- 11. The document No Φ.550/ΑΔ 635097/Σ772/25.04.12 of the Infrastructure Directorate of the Hellenic Air Force General Staff, in which no objections are raised for the proposed project.

From the abovementioned pronouncements, only the local forest inspection authority of Rodopi imposed specific terms, which indeed led to routing alterations and supplementary works (reforestation and water tanks) as proposed. Some measures are also proposed from the archaeological authorities. Details for all the above are presented in Chapter 8.

## 5. Description of the Current State of the Environment

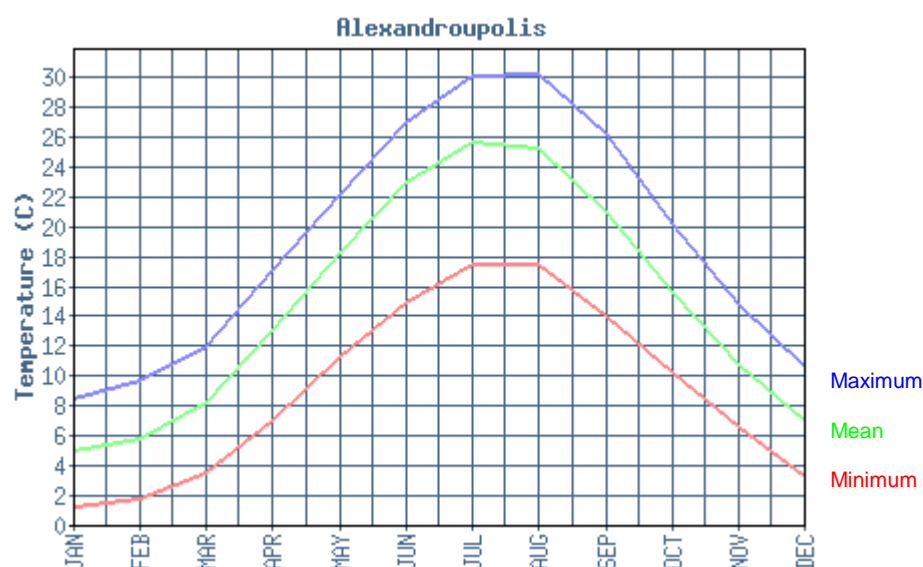
### 5.1 Natural Environment

#### 5.1.1 Atmospheric Environment – Climate

The meteorological data of the nearest Operating National Meteorological Service Station (Alexandroupolis) that characterize the proposed pipeline route are presented in the figures and tables below :

##### 5.1.1.1 Temperature

**Fig 5.1** Temperature Data for Alexandroupolis.



**Table 5.1.** Monthly Temperature Data for Alexandroupolis.

1 <sup>st</sup> Semester	JAN	FEB	MAR	APR	MAY	JUN	1ο Εξάμηνο
Monthly Min Temperature	1.3	1.8	3.5	7.0	11.3	15.0	Ελάχιστη Μηνιαία Θερμοκρασία
Monthly Average Temperature	5.0	5.9	8.3	13.1	18.3	23.1	Μέση Μηνιαία Θερμοκρασία
Monthly Max Temperature	8.6	9.7	12.1	17.1	22.3	27.1	Μέγιστη Μηνιαία Θερμοκρασία
2 <sup>nd</sup> Semester	JUL	AUG	SEP	OCT	NOV	DEC	2ο Εξάμηνο
Monthly Min Temperature	17.6	17.5	14.1	10.3	6.6	3.3	Ελάχιστη Μηνιαία Θερμοκρασία
Monthly Average Temperature	25.8	25.4	21.1	15.6	10.8	7.1	Μέση Μηνιαία Θερμοκρασία
Monthly Max Temperature	30.2	30.3	26.3	20.3	14.8	10.7	Μέγιστη Μηνιαία Θερμοκρασία

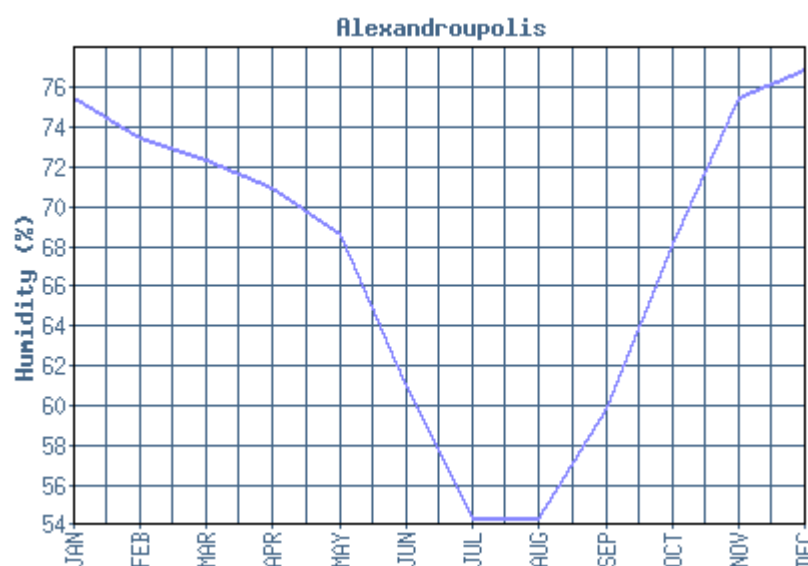
Air temperature constitutes one of the most important meteorological / climatic quantities, describing of climate of place of region. The

temperature of air in the region during winter ranges between -1 °C and 7 °C. The lower temperatures are observed during the winter (December up to February) in the mountains and the highest in the regions that are found in low altitudes in the plains and near the sea. In spring (March up to May) the temperatures vary between 9 °C and 18 °C. The lower temperatures are observed on tops of mountains in the North. The summertime (June up to August) the medium temperatures are between 18 °C and 24°C. To autumn (September up to November) the temperatures range mainly between 9°C and 11°C.

#### 5.1.1.2

#### Humidity

**Fig 5.2** Humidity Data for Alexandroupolis.



**Table 5.2.** Monthly Humidity Data for Alexandroupolis.

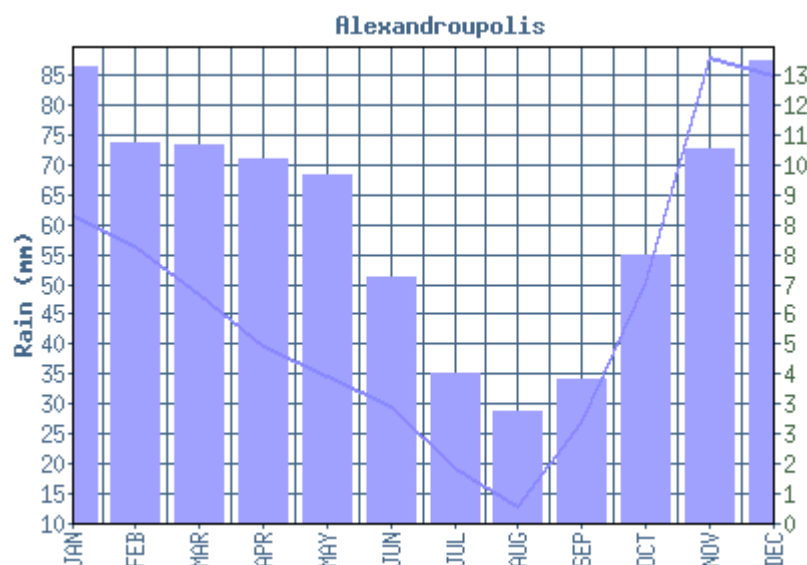
1 <sup>st</sup> Semester	JAN	FEB	MAR	APR	MAY	JUN	1 <sup>ο</sup> Εξάμηνο
Monthly Average Humidity	75.5	73.5	72.4	71.0	68.7	61.0	Μέση Μηνιαία Υγρασία
2 <sup>nd</sup> Semester	JUL	AUG	SEP	OCT	NOV	DEC	2 <sup>ο</sup> Εξάμηνο
Monthly Average Humidity	54.4	54.4	59.9	68.2	75.5	76.9	Μέση Μηνιαία Υγρασία

Humidity also constitutes a very important meteorological parameter that is related with the well-being of the residents of a region. Various expressions of humidity exist. The most used is relative humidity.

Relative humidity of air is reported in percentage (%) and describes how much the air is saturated with water vapours. The relative humidity of air in the region ranges between 75% and 80% during winter and does not show territorial changes and differences. During winter the relative humidity is highest in the annual time course. In spring the humidity ranges between 60% and 70%, and during the summertime between 50% and 60% and is thus the lowest.

5.1.1.3 Precipitation

**Fig 5.3** Rainfall Data for Alexandroupolis.



**Table 5.3.** Monthly Rainfall Data for Alexandroupolis.

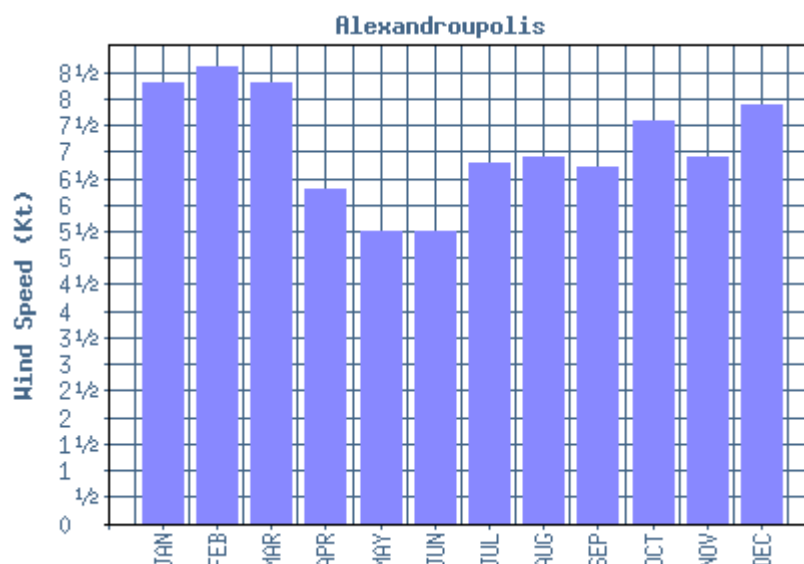
1 <sup>st</sup> Semester	JAN	FEB	MAR	APR	MAY	JUN	1 <sup>ο</sup> Εξάμηνο
Monthly Average Rainfall	61.6	56.5	48.6	39.6	34.7	29.5	Μέση Μηνιαία Βροχόπτωση
Total days of Rain	12.8	10.7	10.6	10.2	9.8	6.9	Συνολικές Μέρες Βροχής
2 <sup>nd</sup> Semester	JUL	AUG	SEP	OCT	NOV	DEC	2 <sup>ο</sup> Εξάμηνο
Monthly Average Rainfall	19.3	13.0	26.9	50.5	88.0	85.0	Μέση Μηνιαία Βροχόπτωση
Total days of Rain	4.2	3.1	4.0	7.5	10.5	13.0	Συνολικές Μέρες Βροχής

Precipitation contains each form of water of atmosphere that falls on the surface. The units are mm. 1 mm of precipitation corresponds in 1 litre per square meter. The higher values are observed during winter (about 85mm) and the lower in August (13mm).

5.1.1.4

Wind

**Fig 5.4** Wind Speed Data for Alexandroupolis.

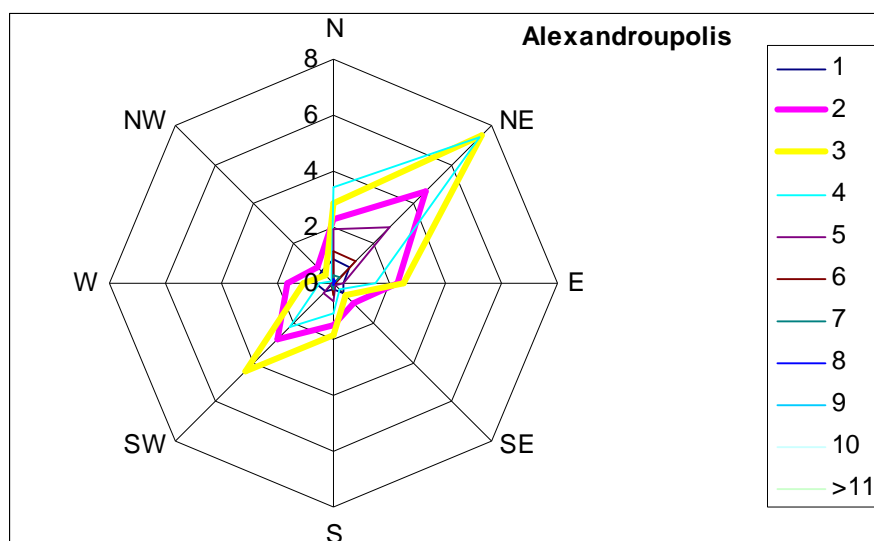


**Table 5.4.** Monthly Wind Speed & Direction Data for Alexandroupolis.

1 <sup>st</sup> Semester	JAN	FEB	MAR	APR	MAY	JUN	1 <sup>ο</sup> Εξάμηνο
Monthly Average Wind Direction	NE	NE	NE	NE	NE	NE	Μέση Μηνιαία Διεύθυνση Ανέμων
Monthly Average Wind Speed	8.3	8.6	8.3	6.3	5.5	5.5	Μέση Μηνιαία Ένταση Ανέμων
2 <sup>nd</sup> Semester	JUL	AUG	SEP	OCT	NOV	DEC	2 <sup>ο</sup> Εξάμηνο
Monthly Average Wind Direction	NE	NE	NE	NE	NE	NE	Μέση Μηνιαία Διεύθυνση Ανέμων
Monthly Average Wind Speed	6.8	6.9	6.7	7.6	6.9	7.9	Μέση Μηνιαία Ένταση Ανέμων



**Fig 5.5** Annual Wind Rose Data for Alexandroupolis.



**Table 5.5.** Annual Wind Speed & Direction Data

BEAUF	N	NE	E	SE	S	SW	W	NW	CALM	SUM
0									30.076	30.076
1	0.833	0.855	0.362	0.493	0.186	0.394	0.636	0.57		4.329
2	2.29	4.635	2.29	0.975	1.534	2.86	1.611	0.877		17.072
3	2.86	7.506	2.531	0.657	1.83	4.405	1.052	0.394		21.235
4	3.441	7.364	1.49	0.307	1.063	2.213	0.526	0.153		16.557
5	1.907	2.816	0.373	0.099	0.625	0.482	0.088	0.033		6.423
6	1.129	1.107	0.044	0.033	0.394	0.153	0.022	0.011		2.893
7	0.307	0.274	0.011	0.011	0.208	0.055	0.011	0.011		0.888
8	0.142	0.121	0.011	0.011	0.088	0.022	0.011	0.011		0.417
9	0.011	0.011	0	0	0.022	0.011	0.011	0		0.066
10	0.011	0.011	0	0	0.011	0	0	0.011		0.044
>11	0	0	0	0	0	0	0	0		0
<b>SUM</b>	<b>12.931</b>	<b>24.7</b>	<b>7.112</b>	<b>2.586</b>	<b>5.961</b>	<b>10.595</b>	<b>3.968</b>	<b>2.071</b>	<b>30.076</b>	<b>100</b>

The climate is differentiated in two distinct areas in the Regional Dpt. of Rodopi. The mountain range of Rodopi constitutes the climatic limit between the Mediterranean climate and continental. The southern parts are characterized by the Mediterranean climate. The fluctuations of annual temperature range are large and the rainfall presents non-uniform distribution as the 2/3 of total rain falls the first and last quarter of the year, while only the 1/3 of it occurs during spring and summer. N-NE winds prevail which, during winter, cause intense fall of temperature and frosts.

#### 5.1.1.5 Bioclimatic parameters

Bioclimatic parameters describe the effect of thermal environment to the individual. One such parameter is the physiologic equivalent temperature (PET). A PET roughly 20 °C means thermal comfort. Increasing values mean thermal stress from heat and decreased values stress from cold. The values over 30°C mean large stress with likely consequences to the human health. In the region of interest values of PET range between -3 °C and + 4 °C for the winter. In spring the PET ranges between 13 °C and 22 °C and conditions of thermic comfort exist in entire the region. The same distribution is observed and in the fall only that the values are lower than those of spring. The summertime high values are observed in the interior of region and the better bioclimatic conditions are met in the coasts and in the mountainous areas.

#### Emberger Index, Q2

Another index widely used for climatic characterization is the Emberger Index., which for the Mediterranean areas can be defined as :

$$Q_2 = \frac{1000 \times P}{\left(\frac{M + m}{2}\right) \times (M - m)}$$

with:

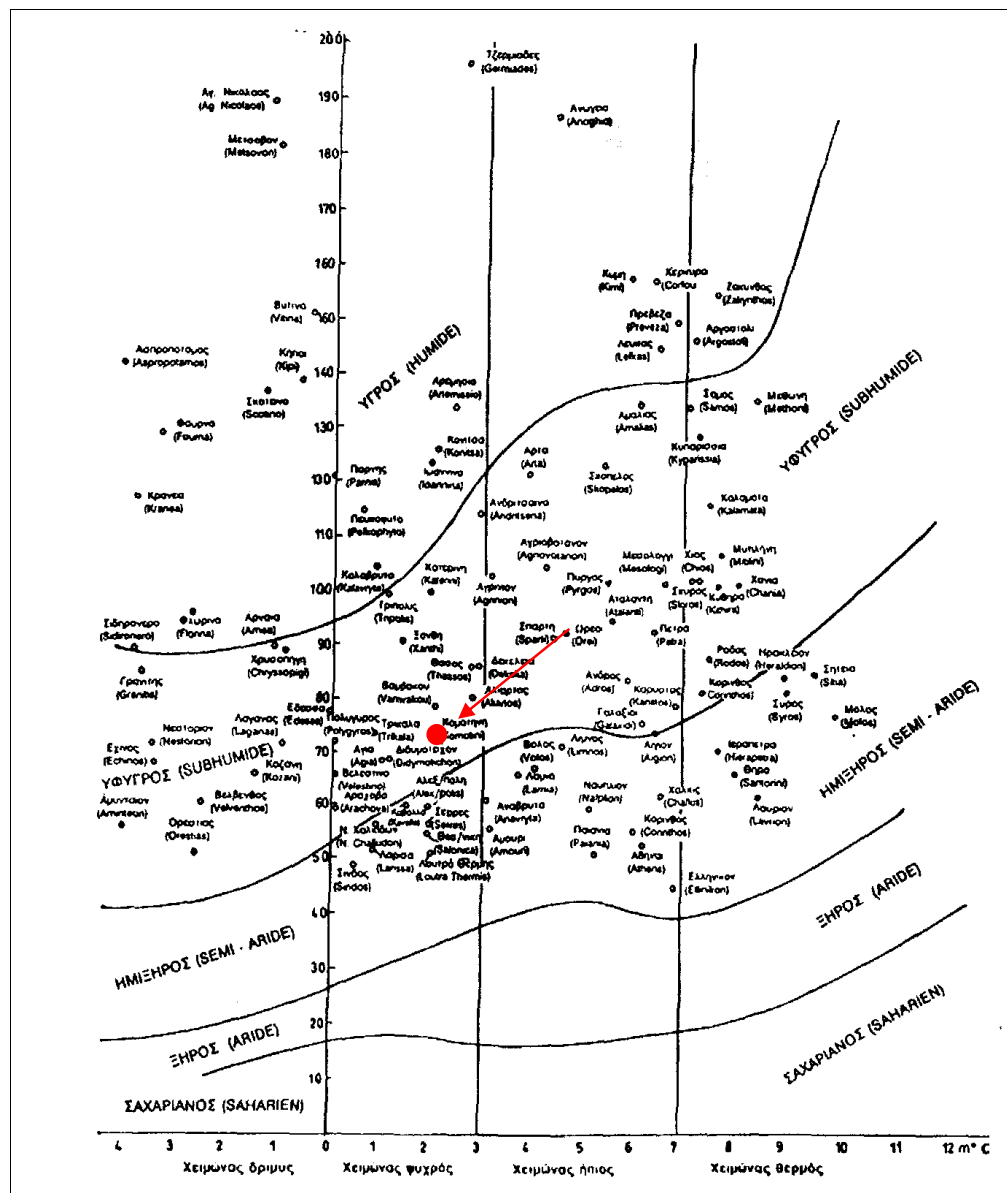
P = annual precipitation in mm,

M = mean of max temperatures of the hotter month in °K

m = mean of min temperatures of the colder month in °K.

The lower the index, the drier the climate is. Using this index Emberger crated climatic diagrams like the one presented below for the Komotini area.

FIGURE 5.6 : Emberger index for Greece (according to Mavromatis)



### *Ombrothermic Index (Bagnouls-Gaussen)*

Ombrothermic index summarizes hydrological stress on plant development and biomass formation

$$BGI = \sum_{i=1}^{12} (2T_i - P_i) * k$$

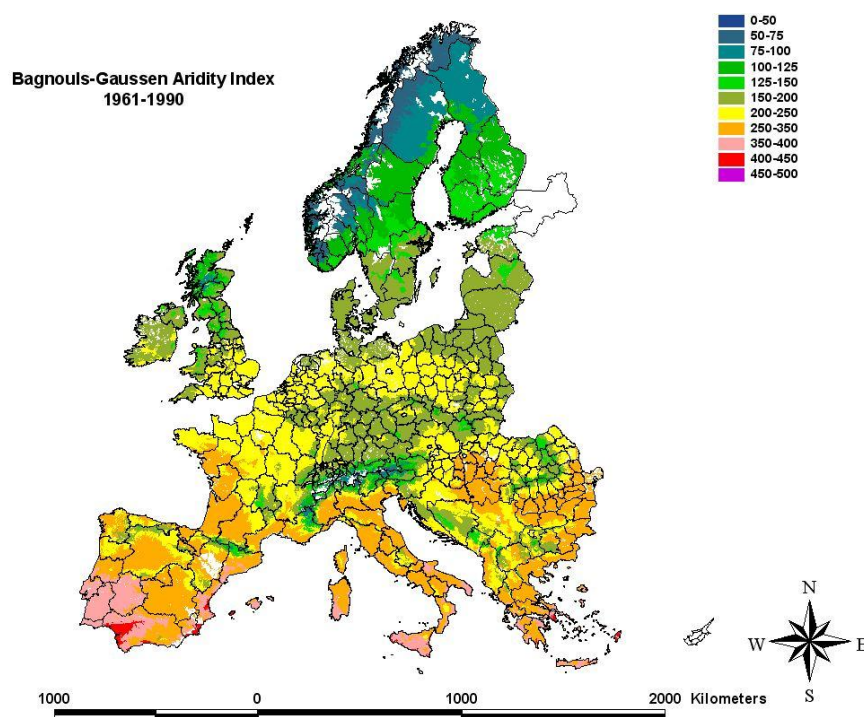
$T_i$  is the mean air temperature for the month  $i$  in °C;

$P_i$  is the total precipitation for month  $i$  in mm;

$k$  represents the proportion of month during which  $2T_i - P_i > 0$

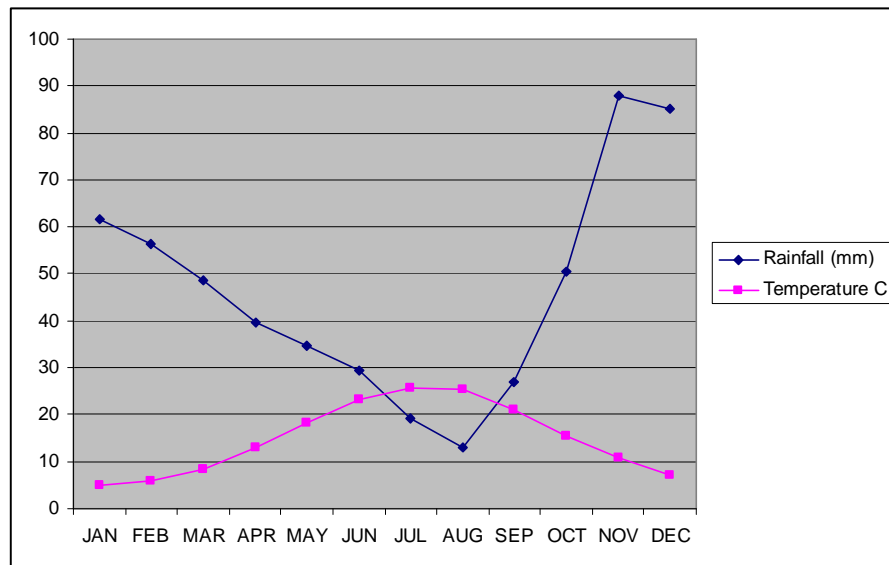
As it can be seen from the figure below the ombrothermic index for the Komotini region ranges 250-350

**FIGURE 5.7 :** Bagnouls-Gaussen Ombrothermic-Aridity Index for Europe.



Rainfall and temperature data are jointly presented for Komotini in the Ombrothermic diagram below :

**FIGURE 5.8 :** Ombrothermic Diagram for Komotini



### 5.1.2

#### Aquatic Environment - Water bodies

**Lakes :** Three lakes exist in the Rodopi area. The Ismarida (Mitrikou) lake in the south, the New Adriani artificial lake in the south and the Gratini artificial lake Northeast of Komotini. All of them are far away from the pipeline route. The Vistonida Lagoon (45,6Km<sup>2</sup>) SW of Komotini is divided between the Regional Departments of Rodopi & Xanthi.

**Rivers :** The rivers in the Rodopi area are small. The main rivers are Lissos (or Fyliouris) river south-east of Komotini and Bospo river south-west of Komotini. There are also small rivers which can be characterized as streams. Most of them are far from the pipeline route except Karydorema (Boukloutzas or Trelohimaros) in the North / North-East of Komotini which lies in the general direction of the pipeline route and is intersected by it.

The hydrological basin of the Komotini torrents is constituted by three main currents :

- Western torrent or Vozvozis (Bospo)
- Central torrent or Boukloutzas, which was diverted during 1962 to the Eastern torrent.
- Eastern torrent or Trelohimaros

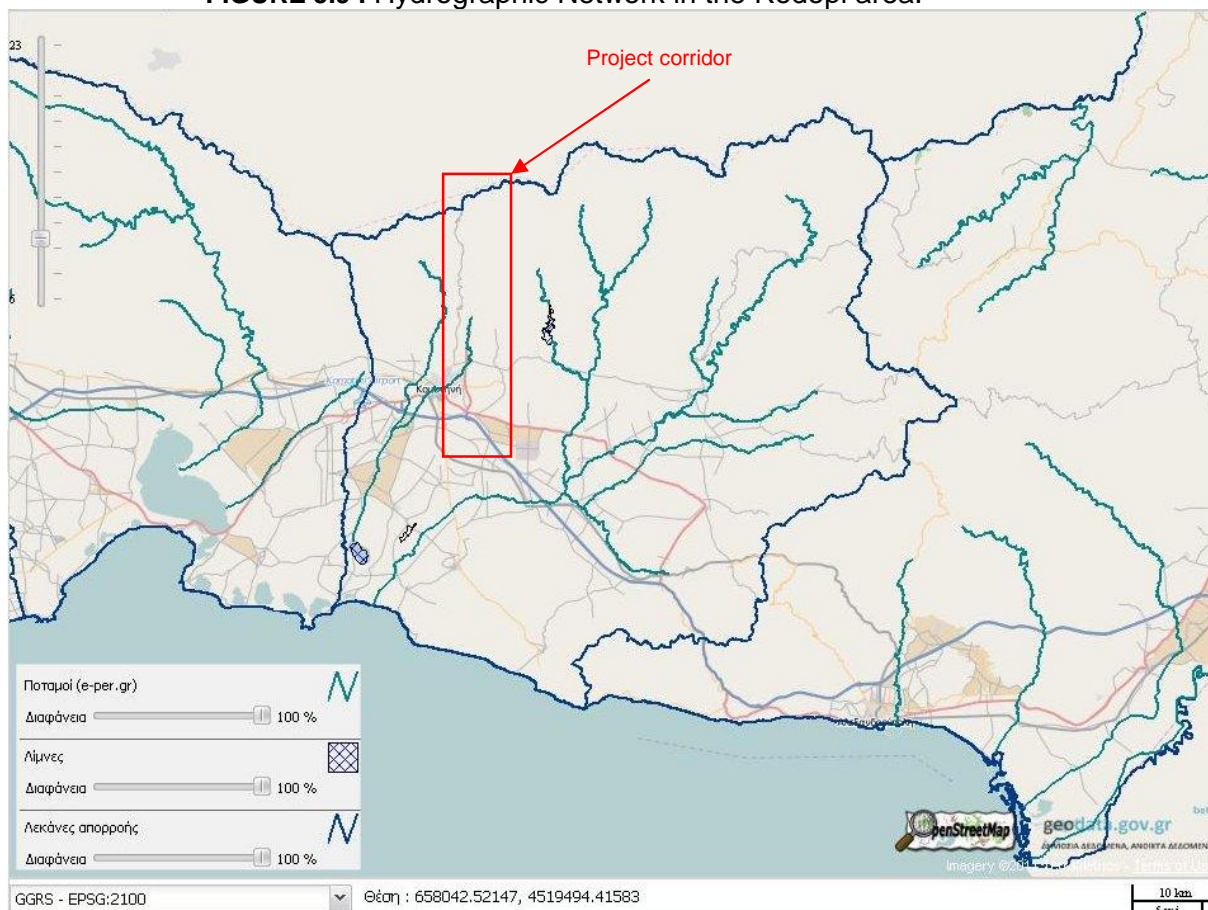
The intersections are presented in the following table.

**Table 5.6** Intersections with Rivers and streams along the proposed pipeline route.

DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)
10760/PL/P1/02/421	K3+78.05	1+528.17	Ditch / Χαντάκι	4.16
10760/PL/P1/02/423	K8+78.54	5+211.79	Ditch / Χαντάκι	6.92
10760/PL/P1/02/423	K8+98.93	5+232.19	Ditch / Χαντάκι	5.03
10760/PL/P1/02/424	K11+182.15	6+156.14	Ravine / Ρέμα	38.35
10760/PL/P1/02/424	K12+56.78	6+328.26	Ravine / Ρέμα	48.97
10760/PL/P1/02/425	K14+51.65	7+666.01	Ravine / Ρέμα	6.37
10760/PL/P1/02/426	K18+225.50	9+656.98	Stream Trelochimaros / Χείμαρρος Τρελοχείμαρρος	63.88
10760/PL/P1/02/426	K22+359.30	11+913.70	Ravine / Ρέμα	18.52
10760/PL/P1/02/427	K26+73.99	12+659.90	Ravine / Ρέμα	113.62
10760/PL/P1/02/427	K28+257.19	13+135.72	Ravine / Ρέμα	10.39
10760/PL/P1/02/427	K32+104.74	14+073.21	Ravine / Ρέμα	7.22
10760/PL/P1/02/427	K32A+136.22	14+288.54	Ravine / Ρέμα	21.31
10760/PL/P1/02/427	K32A+305.21	14+457.53	Ravine / Ρέμα	26.62
10760/PL/P1/02/427	K32A+510.07	14+662.385	Ravine / Ρέμα	18.11
10760/PL/P1/02/427	K32A+566.75	14+719.07	Ravine / Ρέμα	59.93
10760/PL/P1/02/427	K36+30.27	16+006.26	Ravine Karydorema / Καρυδόρεμα	17.00
10760/PL/P1/02/428	K45+108.90	18+204.105	Ravine / Ρέμα	26.21
10760/PL/P1/02/428	K46+63.13	18+399.67	Ravine Karydorema / Καρυδόρεμα	42.78
10760/PL/P1/02/428	K47+41.06	18+514.785	Ravine / Ρέμα	14.83
10760/PL/P1/02/429	K66+193.80	22+746.54	Ravine / Ρέμα	25.44
10760/PL/P1/02/429	K73+206.01	24+314.10	Ravine / Ρέμα	19.12

The Hydrographic network of the Region is presented in the following Figure.

**FIGURE 5.9 : Hydrographic Network in the Rodopi area.**



### 5.1.3 Ground – Geology - Seismicity

#### 5.1.3.1 Introduction

The IGB crosses Greek territory for about 28.5-31km according to which of the three studied pipeline routes is examined. The preferred proposed route (REC) is 31.479,87m long, whereas the alternative 1 (ALT1) is 28.588m long and the alternative 2 (ALT2) is 30.262m long.

The pipeline route is divided into two main parts in terms of the geomorphological and geological structure. The southern part (approximately 17km long) is characterized predominantly by a flat area (<5% slope dips) and a few gentle slopes (5-15% slope dips) that does not exceed slope dips of 15%. This is the Komotini – Xanthi plain that consists of sedimentary deposits. These deposits are conglomerates, marls and sandstones and are both molassic since Eocene in age as well as more recent Pliocene and Pleistocene mostly marine sediments and Holocene



alluvium. This is an area where no landslides occur, but potential liquefaction phenomena can not be excluded.

On the other hand, the northern part of the route approximately 14.5km long is characterized by steep slopes and higher elevation, entering the Rhodope mountain area. Elevation ranges from 200m up to almost 900m high, southwards from the Greek-Bulgarian borders. This part of the route that crosses the Rhodope Mt, is characterized by metamorphic rocks mostly gneisses, but there are also amphibolites and some schists with marble intercalations. The pipeline route crosses mainly through gneisses that belong to the Sidironero Geotectonic unit. These rocks that are Paleozoic in age have been severely metamorphosed during the Upper Jurassic and Lower Cretaceous orogenetic phase. Despite the fact that slopes are steep (e.g. up to 60% slope dip) few landslides are observed. This is because metamorphic rocks are less prone to landslides compared to other sedimentary rocks such as marls or the flysch.

The division between the southern flat area of the sedimentary basin of Thrace and the steep topography of the northern area of the Rhodope mountains, where the metamorphic rocks outcrop is marked by a major active fault zone. This fault zone is a ENE-WSW trending major oblique normal fault zone that dips and downthrows to the SSE and intersects perpendicular the pipeline route. In 1784, a strong earthquake M=6.7 occurred producing significant damage to the town of Komotini and most probably part of this fault was activated. Fault with id 4 in active faults map, has been accessed as capable and with the current data we have, it will not give a significant seismic event.

#### 5.1.3.2 Geotectonic Units

Rhodope Massif is characterized by the occurrence of gneiss (mainly orthogneiss), schists (mainly mica-schists) and amphibolites, in alterations with marble horizons. It is subdivided in the following two tectonic units (t.u.):

Sidironero t.u. where orthogneiss, micaschists, amphibolites and intercalations of marbles occur.

Paggaeo t.u., which is composed by three sequences: i) a lower of orthogneiss, micaschists, schists and amphibolites ii) a middle of marbles with intercalations of mica-schist and amphibolites, and iii) an upper with alterations of schists and marbles.

The magmatic rocks are composed of Carboniferous to Cretaceous plutonic masses (granites, granodiorites, monzonites and diorites) and Eocene to Oligocene volcanic rocks (rhyolites, dacites, andesites and dolerites).

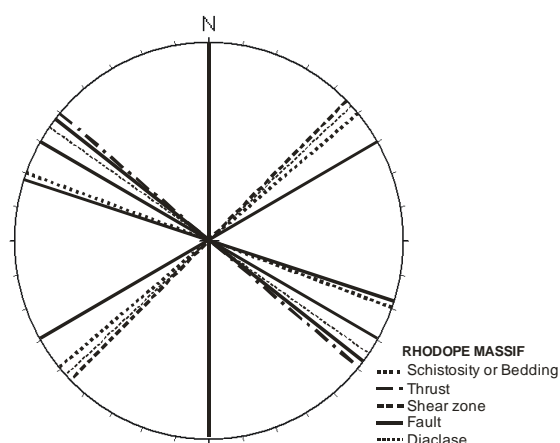
#### Tectonic Analysis

The orientation analysis of the tectonic and microtectonic regime Rhodope Massif is shown on the following Table 5.7, and on Figure 5.9.

**Table 5.7:** Tectonic elements of Rhodope massif.

BEDDING OR SCHISTOSITY	N70°W/30°-40°NE (MAIN) N50°E/20°-30°NW
Fold axis	
Thrusts	N40°-60°W/30°-40°NE
Shear zones	N45°E/70°-80°NW or SE
Faults / Fault zones	N50°-70°W/60°-70°SW or NE N40°-60°E/60°-70°SE or NW N20°W-N20°E/80°E or W
Diaclases	N40°-50°E/70°-80°SE or NW N50°-60°W/70°-80°SW or NE

**FIGURE 5.10 :** Rose diagram of tectonic elements.



### The aquifers

The main aquifers of the Rhodope massif are located both in Sidironero t.u. and Paggao t.u., as these units are composed mainly by metamorphic rocks, which are the typical fractured media included within the considered and examined fractured rocks environment. Even in the case of the marble sequence, where karstification occurs, the horizons of schist into the sequence as intercalations could be included in the fissured rock sequence. As far as the igneous phase concerns, both plutonic and eruptive rocks are included within the considered and examined fissured rocks.

Regarding the relation between the groundwater storage and flow and the fracturation existed, some comments can be cited, valid for all the outcrops of the discussed formations in all geotectonic zones. For the plutonic rocks, the fracturation is limited in shallow depths except the zones of tectonic events. In the case of the eruptive formations, the secondary porosity becomes denser since before the fracturation induced by the tectonic action, another system of preexistent discontinuities have been induced by the “rapid” cooling of the magma at or near the ground surface.

#### 5.1.3.3 Geological Structure

The geological structure in the study area is divided into the Alpine and the Post-Alpine formations. The Alpine rock type formations, that form part of the Geotectonic units described above, experienced the Alpine orogeny, whereas some of them have also experience the pre-alpine orogeny are highly deformed and in our study area are pre-Eocene in age. They are predominantly characterized as hard rocks (e.g. limestones, cherts, granites, gneisses, amphibolites). The Post-Alpine sedimentary formations were formed in the back arc of the subduction zone and in our study area are from Eocene Molassic type sediments to Miocene and Pliocene and Quaternary sediments. These deposits are characterized as loose, semicohesive or cohesive sediments, depending on their age, composition (clasts and cements) and texture. The postalpine formations lie uncomfortably on top of the alpine rocks, are less deformed and are mostly cut and tilted by the surrounding active faults. They record the most recent to present day deformation linked to the activity of faults over the last 3-4 million years with the exception of the Molassic sediments that record also older back arc basin bounding deformation phases. Therefore, they provide us with valuable information regarding the recent fault activity.

#### 5.1.3.4 Route Stratigraphy

The stratigraphy of the geological formations occurring along the route is the following:

##### **Post Alpine Formations**

###### *Alluvial Deposits*

Recent deposits of various loose materials in the valley, mainly sands, clays (terra rosa) and gravels.

###### *Scree and talus cones*

Consists mainly of angular limestone, marble, gneiss pebbles arranged in thin layers or bands of loose material. The oldest formations are cohesive and the cement of them is marly-calcareous.

###### *Deposits of terraces*

Comprise sedimentary sequences of conglomerates, sand to sandstones or clayey sand, marls to marly limestones and clays (mainly fluvial). All sediments are altered, intercalated and inter-fingered rapidly.

###### *Lacustrine deposits*

Comprise sedimentary sequences of predominantly clayey sands and clays deposited in a lake paleoenvironment. Sands to sandstones or clayey sand, marls to marly limestones could also appear as well as organic material (lignites) or gypsum.

###### *River and torrent deposits*

Consists mainly of intercalation of angular conglomerates, sands and clays of fluvial origin.

*Clastic Deposits (clays, sand, sandstones)*

Consist of intercalation of clays, sand and sandstones. They are deposits overlaying and filling of karstic caves and tectonic grabens and lows. In the lower parts can be found cohesive conglomerates.

*Marine formations*

Comprise of sedimentary sequences of sand to sandstones with thin layers of clayey sands, marls, marly limestones. Locally with the presence of conglomerates in the base of the formation (Neogene).

*Lacustrine formations*

Comprise of sedimentary sequences of thin layers of clayey sands, clays deposited in a lake paleoenvironment. Locally with the presence of conglomerates in the base of the formation (Neogene).

5.1.3.5

Active faults and seismic hazard

Along the pipeline route there is one major active fault zone that intersects the pipeline. This is the Kavala-Xanthi-Komotini fault zone up to 90 km long, divided in several segments that is regarded as the most important fault structure in Eastern Macedonia-Thrace. It is a ENE-WSW trending major oblique normal fault zone with significant strike-slip component that dips and downthrows to the south south east. This fault was initially formed during Miocene as an extensional detachment fault, bounding the core of the Rhodope Massif in the footwall. In recent times it is a high angle oblique normal fault that has also a significant strike-slip component. Following the above, its 90km length and its long history, it forms a wide zone with several smaller faults and strands whose width in places is estimated up to several hundred meters. Since this major fault is 90km long no alternative pipeline route can bypassed it. However, all examined routes intersect perpendicular this active fault zone. The proposed route intersects it at the 17,5km, whereas alternative 1 route at the 16,8km and alternative 2 twice at 17,5 and 18km. This is an area that belongs to the lowest seismic zone category according to the national seismic code map of Greece (0.16g). This is because few earthquakes have occurred based on the historical and instrumental catalogues of earthquakes. In 1784, a strong earthquake  $M=6.7$  occurred in the area producing significant damage to the town of Komotini (that experienced intensity IX) and most probably part of this major fault zone was activated. The above faults are depicted in the Geological maps included in APPENDIX G.

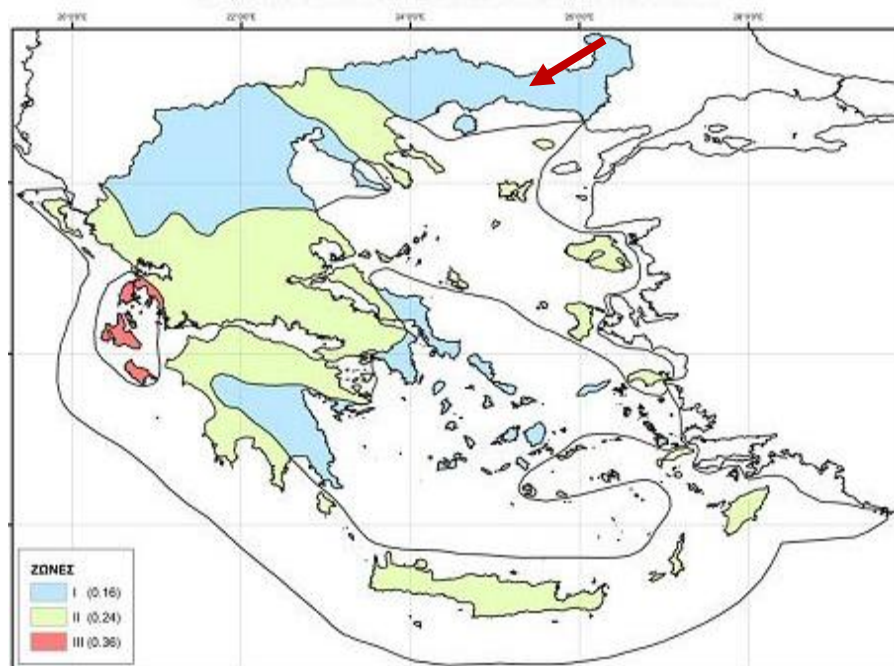
#### 5.1.3.6 Seismic Characteristics

The Greek part of the route of the gas pipeline passes through Thrace. The area of Thrace is located north of the North Aegean Trough, the prolongation of the dextral strike slip North Anatolia Fault (NAF) zone into Aegean Sea, being the boundary between the more stable Eurasia lithospheric plate and fast moving Aegean microplate. Thrace constitutes part of the back arc Aegean region and therefore extension is the dominant pattern of active deformation with the T axis striking almost N-S, although deformation is not as great as in the Aegean Sea.

##### Seismic Hazard Zone of the Study Area

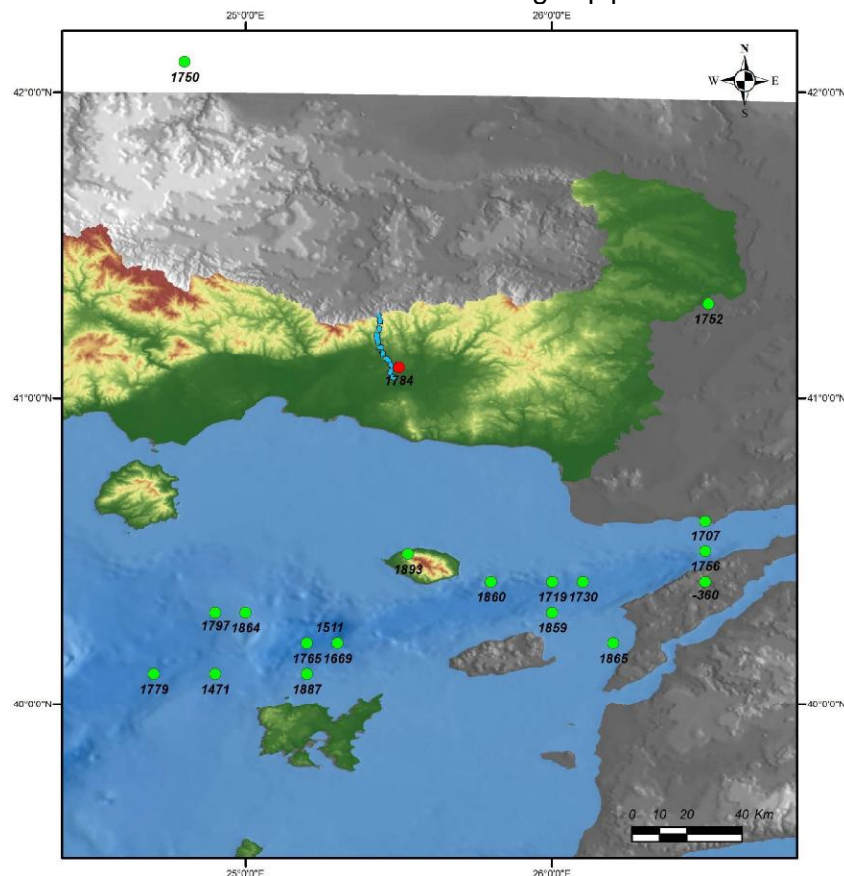
According to the map of areas of seismic hazard of Greece [New Greek Antiseismic Regulation ([NEAK], 2004)] that is presented in Figure 5.11, the region of interest is classified, as it shown with the red arrow, in area I (Light blue Area), that is to say in the area with the lower seismic Hazard of Hellenic area. In this area the value of the Peak Ground Acceleration is  $PGA=0.16g$ .

**Figure 5.11: Seismic Hazard Zones Map**



Thrace is a region characterized by low seismicity in the pre-1900 period (Figure 2.1). It is worth noticing that only one historical earthquake (1784) occurred within a distance less than 50km from the designate route. This event is represented with red color in the Figure below where events within distances that reach 150km away to both sides of the route are presented.

**Figure 5.12:** Epicentral distribution of historical earthquakes (before 1900) that occurred in the broader area of the gas pipeline route.  $M > 6$



To facilitate the Anti-Seismic design of the pipeline the “Seismic Hazard Assessment Study” of Interconnector GREECE - BULGARIA (IGB) Project, was elaborated by Prof. K Makropoulos.

The conclusions from the above study are presented below :

- 1) The Peak Ground Acceleration with probability 70% of not being exceeded in 25 years (Return Period=70years), varying between 50 and 100  $\text{cm/sec}^2$  along the gas pipeline route.
- 2) The Peak Ground Acceleration with probability 90% of not being exceeded in 100 years (Return Period=949), varying between 75 and 175  $\text{cm/sec}^2$  along the gas pipeline route.
- 3) The Peak Ground Velocity with probability 70% of not being exceeded in 25 years (Return Period=70years), varying between 3 and 9  $\text{cm/sec}$  along the gas pipeline route.
- 4) The Peak Ground Velocity with probability 90% of not being exceeded in 100 years (Return Period=949), varying between 5 and 15  $\text{cm/sec}$  along the gas pipeline route.
- 5) the Peak Ground Displacement with probability 70% of not being exceeded in 25 years (Return Period=70years), varying between 0.5 and 1.0  $\text{cm}$  along the gas pipeline route.



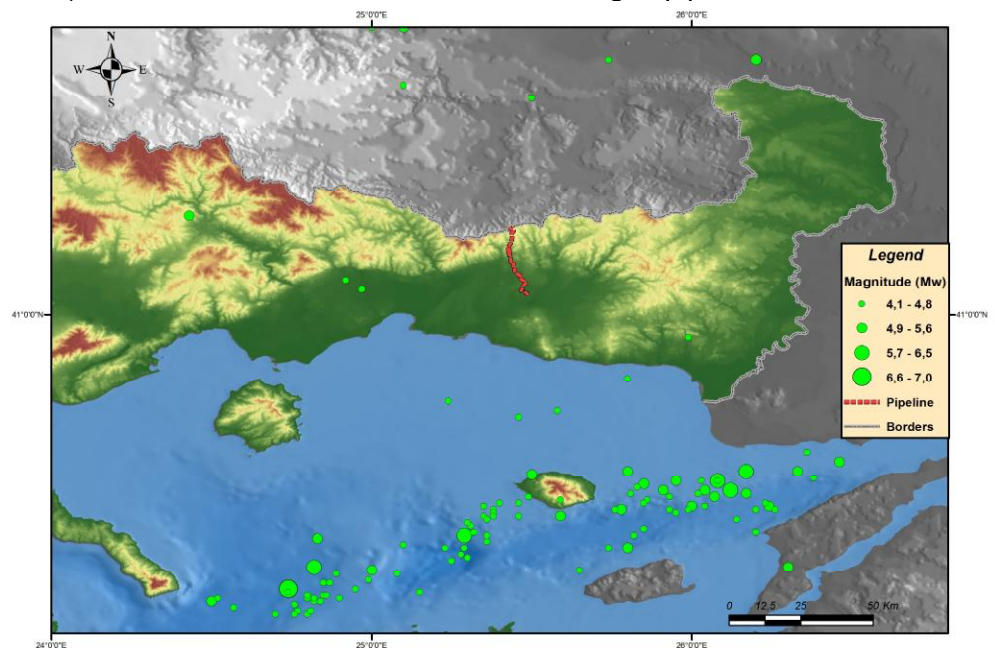
- 6) The Peak Ground Displacement with probability 90% of not being exceeded in 100 years (Return Period=949), varying between 0.5 and 1.5 cm along the gas pipeline route.

The epicentres of the earthquakes of the broader gas pipeline route, within distances that reach 150km away to both sides of the route, which occurred during the instrumental period and have surface wave magnitude  $M_s \geq 4$  (moment magnitude  $M_s \geq 4.1$ ) are presented in the figure below. The data for the 32 of them with magnitude  $M_s \geq 5$  are presented in Table 5.8.

Significant seismicity is observed only along the westward propagation of the north Anatolian Fault into the Aegean. Seismic activity is low in Thrace during the instrumental period (as it was also the case during the pre-1900 period).

From the 131 earthquakes presented in Figure 5.13, only 8 are located in distances  $\leq 50$  km from the pipeline route. All these 8 events are moderate ( $4.0 \leq M_s \leq 4.7$ ) and their epicentres are located in distances between 40km and 50km from the gas pipeline route.

**Figure 5.13:** Epicentral distribution of instrumental earthquakes (1900-2011) that occurred in the broader area of the gas pipeline route.





**TABLE 5.8** The instrumental earthquakes of the region around the gas pipeline route (150 km away to both sides).

YEAR	MONTH	DAY	HOUR	MIN.	LAT (°N)	LON (°N)	DEPTH (km)	Ms	Mw	*DIST (km)
1917	8	20	23	2	40,31	25,29	62	6,1	5,9	86
1920	1	9	12	0	41,80	26,20	20	5,6	5,5	103
1923	5	29	11	35	40,51	25,80	160	5,2	5,2	70
1924	12	23	17	4	42,10	24,70	22	5,1	5,1	122
1928	4	14	10	23	42,29	26,05	21	5,5	5,4	132
1928	4	18	19	22	42,27	25,35	7	7,1	6,8	111
1928	4	18	19	40	42,20	25,10	45	5,6	5,5	109
1928	4	18	20	5	42,00	26,00	36	5,5	5,4	102
1928	4	18	20	49	42,10	26,30	18	5,0	5,0	133
1928	4	18	23	14	42,27	25,52	12	5,7	5,6	111
1928	4	28	17	59	42,00	25,27	10	5,6	5,5	83
1940	2	1	6	20	41,31	24,43	15	5,2	5,2	111
1941	9	1	14	18	42,17	24,72	25	5,1	5,1	127
1952	2	3	20	45	40,47	25,85	77	5,0	5,0	77
1954	8	5	4	12	40,20	25,00	26	5,0	5,0	110
1955	6	2	23	34	40,37	25,59	10	5,7	5,6	78
1956	1	6	12	15	40,51	26,33	10	5,7	5,6	112
1961	11	28	8	58	40,21	26,30	76	5,2	5,2	131
1963	3	29	3	9	40,54	26,46	2	5,1	5,1	122
1964	4	11	16	0	40,30	24,83	33	5,6	5,5	111
1965	8	23	14	8	40,51	26,17	33	6,1	5,9	97
1965	12	20	0	8	40,21	24,82	33	6,0	5,9	120
1975	3	17	5	11	40,48	25,95	22	5,0	5,0	82
1975	3	17	5	35	40,48	26,08	18	5,8	5,7	92
1975	3	27	5	15	40,45	26,12	15	6,7	6,5	98
1983	8	6	15	43	40,14	24,74	21	7,0	6,7	132
1984	7	29	1	58	40,45	25,91	18	5,1	5,1	82
1999	9	9	8	15	40,27	25,80	0	5,0	5,0	94
2003	7	6	19	10	40,45	26,04	17	5,2	5,2	91
2003	7	6	20	10	40,43	26,07	17	5,0	5,0	95
2008	12	28	22	58	40,39	25,78	35	5,2	5,2	81
2010	11	3	2	51	40,44	26,17	31	5,4	5,3	102

\*DIST is the closest distance from the pipeline route.

#### 5.1.4

#### Biotopes

Most of the pipeline route lies within the area of the A00060024 CORINE Biotope (Eastern Rodopi Mountain Range) as shown in the figure below.

Eastern Rodopi is an intermediate height mountain lying along the Greek-Bulgarian borders. It is the southern ending of big mountainous region. The vegetation is constituted by deciduous forests and bushes. The Condition of the Biotope is considered as Good with tendency of rapid deterioration because of the extension of logging and road network construction, replacement of the deciduous forest with pines and illegal hunting. The extension of logging activities and construction of new roads encourages illegal hunting. The replacement of native forestal vegetation with plantations also decreases the biodiversity. The Priority for protection of the biotope is considered secondary.

**Figure 5.14:** A00060024 CORINE Biotope (Eastern Rodopi Mountain Range)



Source : FILOTIS database

**Table 5.9** A00060024 CORINE Biotope (Eastern Rodopi Mountain Range) basic data.

Συνολική Έκταση (ha)	101630.28	Total Area (ha)
Χερσαία Έκταση (ha)	80000.0	Land Area (ha)
Συνολική Περίμετρος (km)	239.5	Total Perimeter (Km)
Μέγιστο Υψόμετρο (m)	1483.0	Max. Height (m)
Ελάχιστο Υψόμετρο (m)	100.0	Min Height (m)

Information on the most common Fauna & Flora within this area follow:

#### 5.1.5

#### Fauna

Due to the great range of climatic and geomorphologic conditions, species and ecosystems diversity is high. Greece entirely lies in the Mediterranean biogeographical region, with ecosystems ranging from semi-desert and maquis, to cold climate mountain forests of birch, scots pine and spruce. Wetlands (rivers, estuaries, deltas, lagoons, shallow lakes, shallow marine formations, and marshes) cover a relatively wide area (210.000 hectares) and forests cover nearly 30% of the country's territory.

About two-thirds of the Greek territory is covered by a hilly or mountainous terrain, with the typical landscape being rugged and steep. Greece has a very extensive coastline of about 15.000 kilometers and about 3.000 islands, which represent 20% of the land area. The coastline is mainly rocky and sandy with about 5% wetlands.

Greek flora and fauna are among the richest in Europe: more than 5.500 plant species have been recorded, with a large number of endemic species, due to the isolation of mountains and islands. Nearly all mammal species recorded are indigenous, as well as 85% of freshwater fish species.

Greece hosts a large variety of Mediterranean habitats included in the reference list of the Natura 2000 initiative (EU Birds Directive 79/409/EEC and Habitats Directive 92/43/EEC): from open sea, tidal areas and sea dunes, to several types of shrubs and grasslands and Mediterranean mountainous forests of coniferous.

Several vertebrate species are known from northern Greece and are very likely to breed, feed, migrate and/or roost within the pipeline corridor. The majority of mammal, reptile and amphibian species is however known from empirical data (occasional random sightings and qualitatively – pursued observations) and population sizes and trends have not been estimated. Ranges and the relative degree of rarity or commonness seem to be more accurately defined for several bird species.

#### 5.1.5.1

#### Mammals

Significant mammals in the abovementioned CORINE biotope are :

**Table 5.10** Significant mammals.

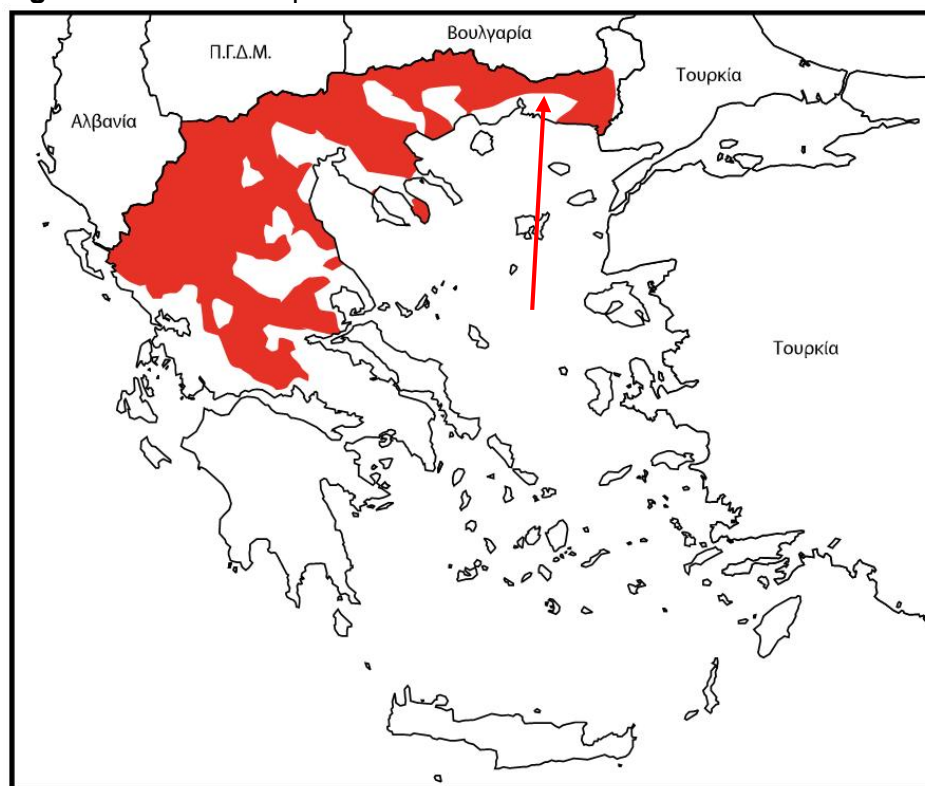
<b>Αξιόλογα Θηλαστικά – significant mammals</b>	Canis lupus (Λύκος)
	Felis silvestris morea (Αγριόγατος του Μωριά)

Especially for Canis Lupus (wolf) which is considered an endangered species in Greece the following should be considered (Red Book – MEECC-2009):

Threat Category - Greece: Vulnerable VU [D1]

Threat Category - International: (least concern) LC

**Figure 5.15:** Canis Lupus habitats in Greece.



The wolf in Greece is still considered as a vulnerable species. Approximately 600 wolves inhabit a variety of habitats in semi-mountainous and mountainous areas. Distribution exceeds 45,000 km<sup>2</sup>. Livestock still encompass the major food source for the species due to low wild ungulate abundance. Major threats include human caused mortality combined with continuous reduction of food availability (free ranging livestock) and ongoing habitat fragmentation due to the construction of closed highways.

In the following table, mammals included in conservation framework whose general range, according to published data, intersects with the proposed pipeline route are presented.

**Table 5.11:** Mammals included in conservation framework

Family/Οικογένεια	Species / Είδος	Distribution / Διασπορά
Rodentia	<i>Spermophilus citellus</i>	Present in central and eastern north Greece, reaching the plains of Imathia to the west – Στην Κεντρική και Β. Ελλάδα μέχρι τις πεδιάδες της Ημαθίας προς Δ.
	<i>Chionomys nivalis</i>	Common at altitudes above the tree line in central and northern Greece – Σύνηθες σε μεγάλα υψόμετρα στην κεντρική και Β. Ελλάδα
	<i>Nannospalax leucodon</i>	Common in continental Greece - Σύνηθες στην ηπειρωτική Ελλάδα
	<i>Neomys anomalus</i>	Relatively common in riparian habitats of continental Greece – Αρκετά σύνηθες σε παρόχθιους βιότοπους την ηπειρωτική Ελλάδα.
	<i>Dryomys nitedula</i>	Throughout continental Greece – Σε όλη την ηπειρωτική Ελλάδα
	<i>Microtus felteni</i>	Rare in northern and western continental Greece – Σπάνιο στη βόρεια και

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Family/Οικογένεια	Species / Είδος	Distribution / Διασπορά
		δυτική ηπειρωτική Ελλάδα
	<i>Microtus thomasi</i>	Common throughout continental Greece – Σύνηθες στην ηπειρωτική Ελλάδα
	<i>Sciurus vulgaris</i>	Common throughout continental Greece– Σύνηθες στην ηπειρωτική Ελλάδα
	<i>Glis glis</i>	Common in most parts of the country – Σύνηθες στα περισσότερα τμήματα της χώρας.
Insectivora	<i>Talpa caeca</i>	Locally common in northern central Greece – Τοπικά σύνηθες στη Β. Και Κεντρική Ελλάδα
	<i>Talpa stankovici</i>	Common in northern Greece – Σύνηθες στη Β. Ελλάδα
	<i>Crocidura leucodon</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
	<i>Crocidura suaveolens</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
	<i>Erinaceus concolor</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
	<i>Sorex araneus</i>	Uncertain occurrence at the northernmost parts of the study area – Αμφίβολη εμφάνιση στα βορειότερα τμήματα
	<i>Sorex minutus</i>	Relatively common in continental Greece – Αρκετά σύνηθες στην ηπειρωτική Ελλάδα
Lagomorpha	<i>Lepus europaeus</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
Carnivora	<i>Felis silvestris</i>	Common in most parts of the country– Σύνηθες στα περισσότερα τμήματα της χώρας.
	<i>Lutra lutra</i>	Relatively common in riparian habitats throughout continental Greece – Αρκετά σύνηθες σε παρόχθιους βιότοπους την ηπειρωτική Ελλάδα.
	<b>Canis lupus</b>	Rare in mountainous regions of central and northern Greece – Σπάνιο στα βουνά της κεντρικής και Β. Ελλάδας.
	<i>Mustela nivalis</i>	Common throughout the country – Σύνηθες σε όλη τη χώρα
	<i>Martes foina</i>	Very common throughout the country– Πολύ σύνηθες σε όλη τη χώρα
	<i>Meles meles</i>	Very common throughout the country– Πολύ σύνηθες σε όλη τη χώρα
Chiroptera (bats)	<i>Eptesicus serotinus</i>	Throughout Greece – Σε όλη την Ελλάδα
	<i>Miniopterus schreibersi</i>	Throughout Greece – Σε όλη την Ελλάδα
	<i>Myotis bechsteini</i>	Throughout central and northern Greece– Σε όλη την Κεντρική και Β.Ελλάδα
	<i>Myotis blythi</i>	Throughout Greece – Σε όλη την Ελλάδα
	<i>Myotis capaccinii</i>	
	<i>Myotis daubentoni</i>	
	<i>Myotis emarginatus</i>	
	<i>Myotis myotis</i>	
	<i>Myotis mystacinus</i>	Throughout Greece – Σε όλη την Ελλάδα
	<i>Nyctalus lasiopterus</i>	
	<i>Nyctalus leisleri</i>	
	<i>Nyctalus noctula</i>	
	<i>Pipistrellus kuhlii</i>	
	<i>Pipistrellus nathusii</i>	Throughout Greece – Σε όλη την Ελλάδα
	<i>Pipistrellus pipistrellus</i>	
	<i>Pipistrellus savii</i>	
	<i>Plecotus austriacus</i>	
	<i>Rhinolophus blasii</i>	
	<i>Rhinolophus euryale</i>	Throughout Greece – Σε όλη την Ελλάδα
	<i>Rhinolophus ferrumequinum</i>	
	<i>Rhinolophus hipposideros</i>	
	<i>Tadarida teniotis</i>	Throughout Greece – Σε όλη την Ελλάδα
Artiodactyla	<i>Rupicapra rupicapra</i>	Rare in Greece, present on high altitudes of several mountains of central and northwestern Greece – Σπάνιο στην Ελλάδα – εμφάνιση σε βουνά της



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Family/Οικογένεια	Species / Είδος	Distribution / Διασπορά
		κεντρικής και Β. ΒΔ. Ελλάδας
	<i>Sus scrofa</i>	Relatively common in central and northern Greece – Αρκετά σύνηθες στην Κεντρική και Β. Ελλάδα.
	<i>Capreolus capreolus</i>	Common in central and northern continental Greece – Σύνηθες στην κεντρική και βόρεια ηπειρωτική χώρα.

5.1.5.2

Birds

Significant Birds in the abovementioned CORINE biotope are :

**Table 5.12** Significant birds.

<b>Αξιόλογα Πτηνά – Significant Birds</b>	<i>Accipiter brevipes</i> (Σαΐνι)
	<i>Aquila chrysaetos chrysaetos</i> (Χρυσαητός)
	<i>Caprimulgus europaeus</i> (Γυδοβυζάχτρα)
	<i>Circaetus gallicus</i> (Φιδαητός)
	<i>Coracias garrulus</i> (Χαλκοκουρούνα)
	<i>Dendrocopos medius medius</i> (Μεσοσικλητάρα)
	<i>Dryocopus martius martius</i> (Μαυροσικλητάρα)
	<i>Emberiza cia</i> (Βουνότσιχλονο)
	<i>Emberiza hortulana</i> (Βλάχος)
	<i>Hieraaetus pennatus</i> (Σταυραητός)
	<i>Jynx torquilla torquilla</i> (Στραβολαίμης)
	<i>Lullula arborea arborea</i> (Δεντροσταρήθρα)
	<i>Neophron percnopterus</i> (Ασπροπάρης)
	<i>Picus viridis viridis</i> (Πρασινοσικλητάρα)
	<i>Sylvia curruca curruca</i> (Λαλοτσιροβάκος)

In the following table, birds included in conservation framework whose general range, according to published data, intersects the proposed pipeline route area are presented.

**Table 5.13:** Birds included in conservation framework

Family / οικογένεια	Status	Distribution / Διασπορά
<i>Ciconia nigra</i>	Sv	Rare in the plains and open forests of northern and northwestern Greece – Σπάνιο στις πεδιάδες και τα ανοικτά δάση της Β. & ΒΔ. Ελλάδας
<i>Ciconia ciconia</i>	Sv	Relatively common in western and northern Greece – Αρκετά σύνηθες στη Δ. Β. Ελλάδα
<i>Pernis apivorus</i>	Sv	Widespread all over Greece – Διαδεδομένο σε όλη την Ελλάδα
<i>Neophron percnopterus</i>	Sv	Central and northern Greece – Κεντρική & Β. Ελλάδα
<i>Gyps fulvus</i>	Re	Throughout the country - Σε όλη την Ελλάδα
<i>Circaetus gallicus</i>	Sv	Common and widespread throughout the country Σύνηθες & Διαδεδομένο σε όλη την Ελλάδα
<i>Accipiter brevipes</i>	Sv	Common in lowland habitats of central and northern continental Greece – Σύνηθες σε χαμηλά ενδιαιτήματα Κεντρικής και Β. Ελλάδας
<i>Buteo buteo</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Aquila pomarina</i>	Sv	Fairly common in northern Greece – Αρκετά σύνηθες στη Β. Ελλάδα
<i>Aquila chrysaetos</i>	Re	Fairly common in the most part of the country – Αρκετά σύνηθες σε όλη τη χώρα
<i>Hieraaetus pennatus</i>	Sv	Common throughout the country - σύνηθες σε όλη τη χώρα
<i>Falco naumanni</i>	Sv	Fairly common in lowlands throughout the country – Αρκετά σύνηθες σε χαμηλά ενδιαιτήματα σε όλη τη χώρα
<i>Falco tinnunculus</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Falco columbarius</i>	Wv	Widespread but scarce in many parts of the country - με μεγάλη διασπορά

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Family / οικογένεια	Status	Distribution / Διασπορά
		αλλά και σπάνιο σε πολλά σημεία της χώρας
<i>Falco subbuteo</i>	Sv	Fairly common throughout the country – Αρκετά σύνηθες σε όλη τη χώρα.
<i>Falco biarmicus</i>	Re	Widespread but rare in central and northern Greece - με μεγάλη διασπορά αλλά και σπάνιο στην κεντρική και Β. Ελλάδα.
<i>Falco peregrinus</i>	Re	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Alectoris graeca</i>	Re	Fairly common in continental Greece– Αρκετά σύνηθες στην ηπειρωτική χώρα
<i>Perdix perdix</i>	Re	Fairly common in northern Greece, reaching till the eastern parts of Pindos range – Αρκετά σύνηθες στη Β. Ελλάδα μέχρι της Αν. Πλευρές της Πίνδου
<i>Coturnix coturnix</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Gallinago gallinago</i>	Wv	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Scolopax rusticola</i>	Wv	Fairly common throughout the country - Αρκετά σύνηθες σε όλη τη χώρα
<i>Columba livia</i>	Re	Fairly common throughout the country - Αρκετά σύνηθες σε όλη τη χώρα
<i>Columba oenas</i>	Wv	Scarce in northern Greece – Σπάνιο στη Β. Ελλάδα
<i>Columba palumbus</i>	Re	Fairly common throughout the country - Αρκετά σύνηθες σε όλη τη χώρα
<i>Streptopelia decaocto</i>	Re	Very common throughout the country - Πολύ σύνηθες σε όλη τη χώρα
<i>Streptopelia turtur</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Cuculus canorus</i>	Sv	Fairly common throughout the country - Αρκετά σύνηθες σε όλη τη χώρα
<i>Tyto alba</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Otus scops</i>	Plm	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Bubo bubo</i>	Re	Scarce throughout the country – Σπάνιο σε όλη τη χώρα
<i>Athene noctua</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Strix aluco</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Asio otus</i>	Re	Fairly common throughout the country - Αρκετά σύνηθες σε όλη τη χώρα
<i>Caprimulgus europaeus</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Apus apus</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Apus melba</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Alcedo atthis</i>	Wv Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Merops apiaster</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Coracias garrulus</i>	Sv	Scarce in northern Greece – Σπάνιο στη Β. Ελλάδα
<i>Upupa epops</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Jynx torquilla</i>	Re	Scarce throughout the country – Σπάνιο σε όλη τη χώρα
<i>Picus canus</i>	Re	Scarce in central and northern continental Greece
<i>Picus viridis</i>	Re	Common in continental Greece – Σύνηθες στην ηπειρωτική χώρα
<i>Dryocopus martius</i>	Re	Scarce in central and northern continental Greece– Σπάνιο στην κεντρική και βόρεια ηπειρωτική χώρα
<i>Dendrocopos major</i>	Re	Scarce in continental Greece – Σπάνιο στην ηπειρωτική χώρα
<i>Dendrocopos medius</i>	Re	Common in continental Greece – Σύνηθες στην ηπειρωτική χώρα
<i>Dendrocopos leucotos</i>	Re	Scarce but widespread in continental Greece – Σπάνιο αλλά διεσπαρμένο στην ηπειρωτική Ελλάδα
<i>Dendrocopos minor</i>	Re	Scarce but widespread in continental Greece– Σπάνιο αλλά διεσπαρμένο στην ηπειρωτική Ελλάδα
<i>Galerida cristata</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Lullula arborea</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Alauda arvensis</i>	Wv Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Eremophila alpestris</i>	Re	Widespread but scarce in high elevations of continental Greece – Μεγάλη διασπορά αλλά σπάνιο σε υψηλά υψόμετρα στην ηπειρωτική Ελλάδα
<i>Ptyonoprogne rupestris</i>	Plm	Fairly common throughout the country - Αρκετά σύνηθες σε όλη τη χώρα
<i>Hirundo rustica</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Hirundo daurica</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Delichon urbica</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Anthus campestris</i>	Sv	Widespread by scarce throughout the country – Διεσπαρμένο αλλά σπάνιο σε όλη τη χώρα
<i>Anthus trivialis</i>	Sv	Widespread but scarce throughout the country – Διεσπαρμένο αλλά σπάνιο σε όλη τη χώρα
<i>Anthus pratensis</i>	Wv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Anthus spinoletta</i>	Wv	Widespread and common throughout the country – Διεσπαρμένο και



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Family / οικογένεια	Status	Distribution / Διασπορά
		σύνηθες σε όλη τη χώρα
<i>Motacilla flava</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Motacilla cinerea</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Motacilla alba</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Cinclus cinclus</i>	Re	Wider but scarce throughout central and northern country – Διεσπαρμένο αλλά σπάνιο στην κεντρική και βόρεια χώρα
<i>Troglodytes troglodytes</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Prunella modularis</i>	Wv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Prunella collaris</i>	Re	Widespread but scarce throughout the country– Διεσπαρμένο αλλά σπάνιο σε όλη τη χώρα
<i>Cercotrichas galactotes</i>	Sv	Widespread but scarce in lowlands throughout the country– Διεσπαρμένο αλλά σπάνιο σε χαμηλά σημεία σε όλη τη χώρα
<i>Erithacus rubecula</i>	Wv Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Luscinia megarhynchos</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Phoenicurus ochruros</i>	Wv Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Phoenicurus phoenicurus</i>	Sv	Scarce in central and northern continental Greece – Σπάνιο στην κεντρική και βόρεια ηπειρωτική χώρα
<i>Saxicola torquata</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Oenanthe oenanthe</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Oenanthe hispanica</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Monticola saxatilis</i>	Sv	Common on mountains throughout the country – Σύνηθες στα βουνά σε όλη τη χώρα
<i>Monticola solitarius</i>	Re	Fairly common throughout the country - Αρκετά σύνηθες σε όλη τη χώρα
<i>Turdus merula</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Turdus pilaris</i>	Wv	Fairly common in continental Greece - Αρκετά σύνηθες στην ηπειρωτική χώρα
<i>Turdus philomelos</i>	Wv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Turdus iliacus</i>	Wv	Very common throughout the country
<i>Turdus viscivorus</i>	Re	Fairly common in continental Greece - Αρκετά σύνηθες στην ηπειρωτική χώρα
<i>Cettia cetti</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Acrocephalus scirpaceus</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Acrocephalus arundinaceus</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Hippolais pallida</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Sylvia cantillans</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Sylvia melanocephala</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Sylvia hortensis</i>	Sv	Widespread but scarce in lowlands throughout the country– Διεσπαρμένο αλλά σπάνιο σε χαμηλά σημεία σε όλη τη χώρα
<i>Sylvia curruca</i>	Sv	Fairly common in central and northern Greece - Αρκετά σύνηθες στην κεντρική και Β. Ελλάδα
<i>Sylvia communis</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Sylvia atricapilla</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Phylloscopus bonelli</i>	Sv	Fairly common in northern Greece - Αρκετά σύνηθες στη Β. Ελλάδα
<i>Phylloscopus collybita</i>	Wv Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Regulus regulus</i>	Wv Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Regulus ignicapillus</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Muscicapa striata</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Ficedula semitorquata</i>	Sv	Fairly common in northern Greece - Αρκετά σύνηθες στη Β. Ελλάδα
<i>Panurus biarmicus</i>		Fairly common locally in western and northern Greece – Αρκετά σύνηθες τοπικά στη Δ. και Β. Ελλάδα.
<i>Aegithalos caudatus</i>	Re	Common in continental Greece – Σύνηθες στην ηπειρωτική Ελλάδα

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Family / οικογένεια	Status	Distribution / Διασπορά
<i>Parus palustris</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Parus lugubris</i>	Re	Widespread but scarce throughout the country– Διεσπαρμένο αλλά σπάνιο σε όλη τη χώρα
<i>Parus cristatus</i>	Re	Scarce on mountains of central and northern Greece – Σπάνιο στα βουνά της κεντρικής και Β. Ελλάδας.
<i>Parus ater</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Parus caeruleus</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Parus major</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Sitta europaea</i>	Re	Common in continental Greece – Σύνηθες στην ηπειρωτική Ελλάδα
<i>Sitta neumayer</i>	Re	Very common throughout the country except the Pindos range Πολύ σύνηθες σε όλη τη χώρα εκτός της Πίνδου.
<i>Tichodroma muraria</i>	Re	Scarce on high altitudes – Σπάνιο σε υψηλά υψόμετρα
<i>Certhia familiaris</i>	Re	Scarce on Pindos and <b>Rodopi mountains</b> - Σπάνιο στην Πίνδο και τα <b>όρη της Ροδόπης</b>
<i>Certhia brachydactyla</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Remiz pendulinus</i>	Re	Common throughout most lowland parts of the country
<i>Oriolus oriolus</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Lanius collurio</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Lanius minor</i>	Sv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Lanius senator</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Garrulus glandarius</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Pica pica</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Pyrrhocorax graculus</i>	Re	Common on mountains – Σύνηθες στα βουνά
<i>Corvus monedula</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Corvus frugilegus</i>	Wv	Common in Makedonia, <b>Thraci</b> , Thessalia and central western Greece – Σύνηθες στη Μακεδονία, <b>Θράκη</b> , Θεσσαλία και ΚΔ. Ελλάδα
<i>Corvus corone</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Corvus corax</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Sturnus vulgaris</i>	Wv Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Passer domesticus</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Passer hispaniolensis</i>	Re	Very common in western, central and northern Greece – Πολύ σύνηθες στη Δυτική, Κεντρική και Βόρεια Ελλάδα.
<i>Passer montanus</i>	Re	Common in many parts of the country – Σύνηθες σε πολλά τμήματα της χώρας
<i>Montifringilla nivalis</i>	Re	Rare on high altitudes of continental Greece – Σπάνιο σε μεγάλα υψόμετρα της ηπειρωτικής Ελλάδας
<i>Fringilla coelebs</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Fringilla montifringilla</i>	Wv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Serinus serinus</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Carduelis chloris</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Carduelis carduelis</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Carduelis spinus</i>	Wv	Fairly common throughout the country – Αρκετά σύνηθες σε όλη τη χώρα
<i>Carduelis cannabina</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Loxia curvirostra</i>	Re	Widespread but scarce on mountainous continental Greece
<i>Pyrrhula pyrrhula</i>	Wv	Scarce of central and northern continental Greece – Σπάνιο στην Κεντρική και Βόρεια ηπειρωτική χώρα.
<i>Coccothraustes coccothraustes</i>	Re	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Emberiza citrinella</i>	Re Wv	Common in central and northern Greece – Σύνηθες στην κεντρική και Β. Ελλάδα
<i>Emberiza cirrus</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Emberiza cia</i>	Re Wv	Fairly common throughout the country - Αρκετά σύνηθες σε όλη τη χώρα
<i>Emberiza hortulana</i>	Sv	Common in many parts of the country – Σύνηθες σε πολλά τμήματα της χώρας
<i>Emberiza schoeniclus</i>	Wv	Common throughout the country – Σύνηθες σε όλη τη χώρα
<i>Emberiza</i>	Sv	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα

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Family / οικογένεια	Status	Distribution / Διασπορά
<i>melanocephala</i>		
<i>Miliaria calandra</i>	Re	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα

Abbreviations for Table 5.13:

Re = resident Wv = winter visitors

Sv = summer visitors

Plm = partial migrants

5.1.5.3

Reptiles-Amphibians

In the following table, reptiles and amphibians included in conservation framework whose general range, according to published data, intersects the proposed corridor area (Gasc & al 1997) are presented.

**Table 5.14:** Reptiles and amphibians included in conservation framework

Species / Είδος	Distribution / Διασπορά
<b>REPTILES / ΕΡΠΕΤΑ</b>	
<i>Ablepharus kitaibelli</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Anguis fragilis</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Chalcides ocellatus</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Coluber caspius</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Coluber gemonensis</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Coluber najadum</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Coronella austriaca</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Cyrtodactylus kotschyii</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Elaphe longissima</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Elaphe quatuorlineata</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Elaphe situla</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Eryx jaculus</i>	Relatively common throughout the country – Αρκετά σύνηθες σε όλη τη χώρα
<i>Hemidactylus turcicus</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Lacerta agilis</i>	Sparse records in northern Greece – Διάσπαρτα στη Β. Ελλάδα
<i>Lacerta trilineata</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Lacerta viridis</i>	Common in central and northern Greece – Σύνηθες στην κεντρική και Β. χώρα
<i>Malpolon monspessulanus</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Ophisaurus apodus</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Podarcis erhardii</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Podarcis muralis</i>	Very common in continental Greece – Πολύ σύνηθες στην Ηπειρωτική Ελλάδα
<i>Podarcis taurica</i>	Very common in continental Greece – Πολύ σύνηθες στην Ηπειρωτική Ελλάδα
<i>Telescopus fallax</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Testudo hermanni</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Typhlops vermicularis</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Vipera ammodytes</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Vipera berus</i>	Present in northern Greece – Εμφανίζεται στη Β. Ελλάδα
<b>AMPHIBIA / ΑΜΦΙΒΙΑ</b>	
<i>Bombina variegata</i>	Common in central and northern Greece – Σύνηθες στην κεντρική και Β. Ελλάδα
<i>Bufo bufo</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Bufo viridis</i>	Very common throughout the country – Πολύ σύνηθες σε όλη τη χώρα
<i>Hyla arborea</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα
<i>Rana dalmatina</i>	Common in continental Greece – Σύνηθες στην Ηπειρωτική Ελλάδα
<i>Rana graeca</i>	Common in continental Greece – Σύνηθες στην Ηπειρωτική Ελλάδα
<i>Rana ridibunda</i>	Common throughout the country - Σύνηθες σε όλη τη χώρα

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Species / Είδος	Distribution / Διασπορά
<i>Rana temporaria</i>	Common in continental Greece – Σύνηθες στην Ηπειρωτική Ελλάδα
<i>Salamandra salamandra</i>	Common in continental Greece – Σύνηθες στην Ηπειρωτική Ελλάδα
<i>Triturus alpestris</i>	Common in alpine and high-altitude wetlands in continental Greece – Σύνηθες σε αλπικούς και μεγάλου υψομέτρου υδροβιότοπους στην ηπειρωτική Ελλάδα
<i>Triturus carnifex</i>	Common in mountain wetlands in western and central north continental Greece – Σύνηθες σε υδροβιότοπους ορέων στην ηπειρωτική Ελλάδα
<i>Triturus vulgaris</i>	Common in continental Greece – Σύνηθες στην Ηπειρωτική Ελλάδα

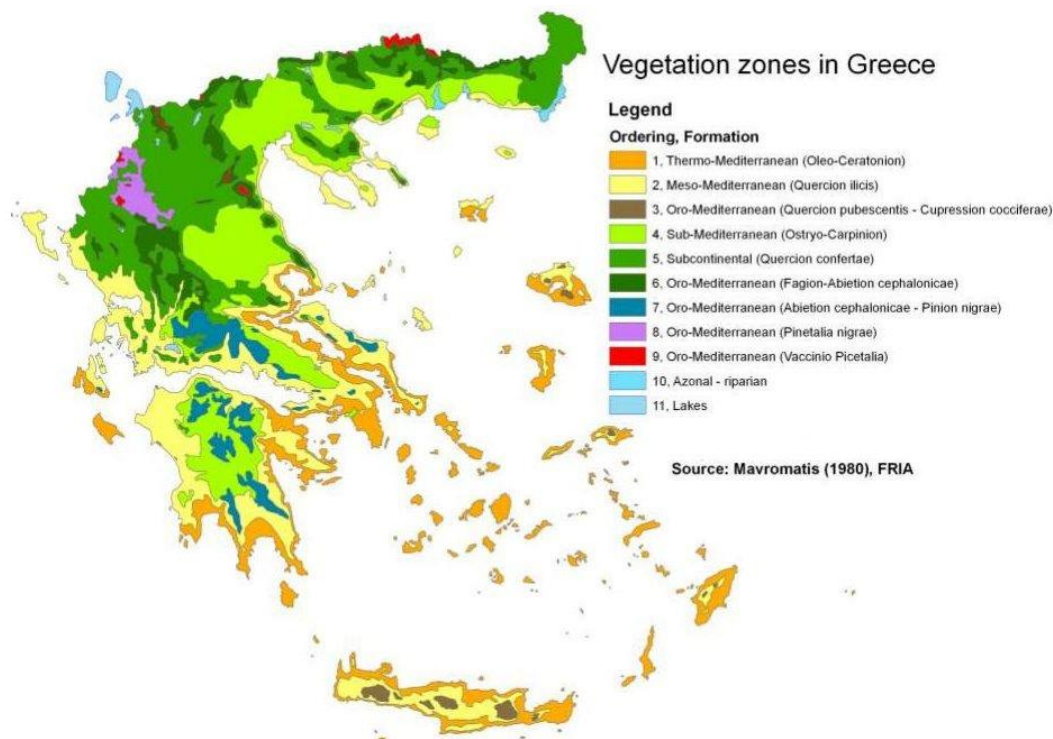
5.1.6

Flora

General Remarks

The area of the project lies primary in the Sub-Mediterranean (Ostryo-Crpinion) and Sub-Continental (Quercion-confertae) vegetation zones as defined by Mavromatis, while its extreme northern part lies in the Oro-Mediterranean (Fagion-Abietion Cefalonicae) zone, as shown in the figure below.

Figure 5.16: Vegetation zones in Greece



The significant flora along the pipeline route are presented in the table below :

Table 5.15: Significant flora.

Σημαντικά Φυτά Significant flora	
Anemone sylvestris	
Anthriscus nemorosa	
Arenaria filicaulis graeca	
Asphodeline taurica	
Calluna vulgaris (Καλλούνα η κοινή)	
Cerastium banaticum bonaticum	
Dianthus gracilis gracilis	
Doronicum austriacum	
Empetrum nigrum (Έμπετρο το μελανό)	
Epilobium montanum	
Erythronium dens-canis	
Genista Lydia (Γενίστα της Λυδίας)	
Gentianella bulgarica (Γεντιανέλλα η Βουλγαρική)	
Geranium macrorrhizum	
Haberlea rhodopensis	
Hypericum linarioides	
Jovibarba heuffelii	
Linaria genistifolia	
Luzula alpinopilosa obscura	
Minuartia garckeana	
Minuartia hirsuta falcata	
Myosotis nemorosa	
Rubus idaeus (Σμεουρδιά)	
Rumex obtusifolius subalpinus	
Scabiosa columbaria columbaria	
Scrophularia aestivalis	



Sedum telephium
Sempervivum ruthenicum
Senecio hercynicus
Silene larchenfeldiana
Silene waldsteinii
Stachys alpina
Syringa vulgaris (Πασχαλιά)
Vaccinium uliginosum microphyllum (Βακκίνιο το μικρόφυλλο)
Vaccinium vitis-idaea (Βακκίνιο η άμπελος της 1δης)
Verbascum humile
Verbascum speciosum speciosum
Vincetoxicum hirundinaria nivale

### 5.1.7 Vegetation along the Corridor

An illustrative description of the land use and the vegetation schemes along the proposed pipeline route (According to CORINE 2000 data) is provided in APPENDIX G (Map P513-100-99-001).

#### 5.1.7.1 Cultivated Land

The entire Rodopi plains is cultivable land in a lot of cases, irrigated, and high productivity. The irrigation is achieved from wells and small irrigation basins. The pumping of underground waters is not controlled resulting in high salinity at the southern regions (Sidirochorio – Imeros). In the plain of Rodopi cotton cultivation (with or without irrigation) is almost monoculture.

Cultures of wheat, beets, industrial tomato and vegetables are also present. In the fringes of Rodopi exceptional quality tobacco is cultivated (basmás) while cherries are cultivated westwards from Komotini.

Along the route of the pipeline the cultures are mainly cereals and cotton.

**Table 5.16a:** Cultivated land analysis in Rodopi (stremmes).

	Σύνολο χώρας / Country Total	Περιφέρεια / Region	ΠΕ Ροδόπης / Reg. Dpt. Of Rodopi	
<b>Αροτραίες καλλιέργειες</b>	<b>20.798.935</b>	<b>3.336.922</b>	<b>772.303</b>	<b>Arable</b>
<b>α. Σιτηρά για καρπό</b>	<b>12.753.582</b>	<b>2.317.742</b>	<b>399.658</b>	<b>a. Cereals for grain</b>
Σιτάρι μαλακό	1.310.391	248.006	49.941	Wheat soft
Σιτάρι σκληρό	7.208.169	1.270.147	278.361	Wheat hard
Κριθάρι	977.901	88.519	30.944	Barley
Βρώμη	416.708	5.629	3.538	Oats
Σίκαλη	143.778	11.529	3.507	Rye
Αραβόσιτος αμιγής	2.406.431	667.122	29.467	Maize – grown alone
Αραβόσιτος συγκαλλιεργούμενος	36.462	3.791	3.400	Maize – grown with other crops
Ρύζι	241.384	18.165	0	Rice
Λοιπά σιτηρά	12.358	4.834	500	Other cereals
<b>β. Βρώσιμα όσπρια</b>	<b>154.289</b>	<b>20.879</b>	<b>602</b>	<b>b. Edible Pulse</b>
Φασόλια αμιγή	72.764	14.132	313	Beans – grown alone
Φασόλια συγκαλλιεργούμενα	20.769	647	150	Beans – grown with other crops
Κουκιά	20.549	124	17	Broad Beans
Λαθούρια	2.551	5	0	Lathyrus
Ρεβύθια	20.182	2.971	82	Chick-peas
Μπιζέλια	3.481	68	15	Peas

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Φακή	11.393	2.929	25	Lentil
Λοιπά βρώσιμα όσπρια	2.500	3	0	Other edible Pulse
<b>γ. Βιομηχανικά και αρωματικά φυτά</b>	<b>4.754.075</b>	<b>849.169</b>	<b>346.585</b>	<b>c.Industrial Crops &amp; Aromatic plants</b>
Καπνός	560.069	114.685	70.968	Tobacco
Βαμβάκι	3.755.987	565.270	246.884	Cotton
Σουσάμι	1.132	350	0	Sesame
Ηλιάνθος	61.587	40.865	6.297	Sunflower
Αραχίδα (φιστίκι αράπικο)	4.861	0	0	Groundnuts
Σόγια	99	15	0	Soya, seed
Ζαχαρότευλα	359.732	123.646	19.571	Sugar Beets
Λοιπά βιομηχανικά φυτά	10.608	4.338	2.865	Other industrial crops
Αρωματικά φυτά	12.129	260	0	Aromatic plants
<b>δ. Κτηνοτροφικά φυτά</b>	<b>3.136.989</b>	<b>149.132</b>	<b>25.458</b>	<b>d.Fodder seeds</b>
Προοριζόμενα για καρπό	114.466	4.243	570	For seed
Από αυτά μπιζέλια	13.179	1.080	30	Peas
Προοριζόμενα για σανό, χόρτο, ριζώμ.	2.267.027	133.045	22.968	For hay
Από αυτά καλαμπόκι χλωρό	67.734	5.341	1.008	Green corn
Προοριζόμενα για γρασίδια	755.496	11.844	1.920	For grass
<b>Λαχανικά</b>	<b>1.164.345</b>	<b>98.872</b>	<b>17.432</b>	<b>e.Vegetables</b>
Λάχανα - κουνουπίδια	136.932	6.947	918	Cabbages & Cauliflowers
Πράσα	20.850	2.118	438	Leeks
Κρεμμύδια ξερά	77.485	4.042	1.178	Onions, dry
Τομάτα βιομηχανική	210.779	23.079	7.477	Industrial Tomato
Τομάτα νωπής χρήσης	181.451	9.109	1.422	Table Tomato
Φασολάκια χλωρά	80.871	7.737	555	Green beans
Κολοκυθάκια	49.678	1.229	298	Squashes
Λοιπά λαχανικά	406.299	44.611	5.146	Other Vegetables
<b>Πεπονοειδή και πατάτες</b>	<b>729.354</b>	<b>57.259</b>	<b>3.059</b>	<b>f.Melons &amp; Potatoes</b>
Καρπούζια και πεπόνια	264.135	13.059	1.571	Watermelons & Melons
Πατάτες όλων των εποχών	465.219	44.200	1.488	Potatoes
<b>Εμπορικοί ανθόκηποι και θερμοκήπια</b>	<b>55.188</b>	<b>1.039</b>	<b>161</b>	<b>g.Flower Gardens &amp; Greenhouses</b>
Εμπορικοί ανθόκηποι	6.634	48	0	Flower Gardens
Θερμοκήπια λαχανικών	44.605	875	156	Vegetable Greenhouses
Θερμοκήπια ανθέων	3.949	116	5	Flower Greenhouses

Πηγή/Source: ΕΣΥΕ (Στοιχεία 2004) / Greek Statistical Authority

**Table 5.16b:** Cultivated land analysis (%).

	Σύνολο χώρας / Country Total	Περιφέρεια / Region	ΠΕ Ροδόπης / Reg. Dpt. Of Rodopi	
<b>Αροτραίες καλλιέργειες</b>				<b>Arable</b>
<b>α. Σιτηρά για καρπό</b>				<b>a. Cereals for grain</b>
Σιτάρι μαλακό	10,27%	10,70%	12,50%	Wheat soft
Σιτάρι σκληρό	56,52%	54,80%	69,65%	Wheat hard
Κριθάρι	7,67%	3,82%	7,74%	Barley
Βρώμη	3,27%	0,24%	0,89%	Oats
Σίκαλη	1,13%	0,50%	0,88%	Rye
Αραβόσιτος αμιγής	18,87%	28,78%	7,37%	Maize – grown alone
Αραβόσιτος συγκαλλιιεργούμενος	0,29%	0,16%	0,85%	Maize – grown with other crops
Ρύζι	1,89%	0,78%	0,00%	Rice
Λοιπά σιτηρά	0,10%	0,21%	0,13%	Other cereals
<b>β. Βρώσιμα όσπρια</b>				<b>b.Edible Pulse</b>



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Φασόλια αμιγή	47,16%	67,69%	51,99%	Beans – grown alone
Φασόλια συγκαλλιευγόμενα	13,46%	3,10%	24,92%	Beans – grown with other crops
Κουκιά	13,32%	0,59%	2,82%	Broad Beans
Λαθούρια	1,65%	0,02%	0,00%	Lathyrus
Ρεβύθια	13,08%	14,23%	13,62%	Chick-peas
Μπιζέλια	2,26%	0,33%	2,49%	Peas
Φακή	7,38%	14,03%	4,15%	Lentil
Λοιπά βρώσιμα όσπρια	1,62%	0,01%	0,00%	Other edible Pulse
<b>γ. Βιομηχανικά και αρωματικά φυτά</b>				<b>c.Industrial Crops &amp; Aromatic plants</b>
Καπνός	11,78%	13,51%	20,48%	Tobacco
Βαμβάκι	79,01%	66,57%	71,23%	Cotton
Σουσάμι	0,02%	0,04%	0,00%	Sesame
Ηλίανθος	1,30%	4,81%	1,82%	Sunflower
Αραχίδα (φιστίκι αράπικο)	0,10%	0,00%	0,00%	Groundnuts
Σόγια	0,00%	0,00%	0,00%	Soya, seed
Ζαχαρότευτλα	7,57%	14,56%	5,65%	Sugar Beets
Λοιπά βιομηχανικά φυτά	0,22%	0,51%	0,83%	Other industrial crops
Αρωματικά φυτά	0,26%	0,03%	0,00%	Aromatic plants
<b>δ. Κτηνοτροφικά φυτά</b>				<b>d.Fodder seeds</b>
Προοριζόμενα για καρπό	3,65%	2,85%	2,24%	For seed
Από αυτά μπιζέλια	0,42%	0,72%	0,12%	Peas
Προοριζόμενα για σανό, χόρτο, ριζωμ.	72,27%	89,21%	90,22%	For hay
Από αυτά καλαμπόκι χλωρό	2,16%	3,58%	3,96%	Green corn
Προοριζόμενα για γρασίδια	24,08%	7,94%	7,54%	For grass
<b>Λαχανικά</b>				<b>e.Vegetables</b>
Λάχανα - κουνουπίδια	11,76%	7,03%	5,27%	Cabbages & Cauliflowers
Πράσα	1,79%	2,14%	2,51%	Leeks
Κρεμμύδια ξερά	6,65%	4,09%	6,76%	Onions, dry
Τομάτα βιομηχανική	18,10%	23,34%	42,89%	Industrial Tomato
Τομάτα νωπής χρήσης	15,58%	9,21%	8,16%	Table Tomato
Φασολάκια χλωρά	6,95%	7,83%	3,18%	Green beans
Κολοκυθάκια	4,27%	1,24%	1,71%	Squashes
Λοιπά λαχανικά	34,90%	45,12%	29,52%	Other Vegetables
<b>Πεπονειδή και πατάτες</b>				<b>f.Melons &amp; Potatoes</b>
Καρπούζια και πεπόνια	36,2%	22,8%	51,4%	Watermelons & Melons
Πατάτες όλων των εποχών	63,8%	77,2%	48,6%	Potatoes
<b>Εμπορικοί ανθόκηποι και θερμοκήπια</b>				<b>g.Flower Gardens &amp; Greenhouses</b>
Εμπορικοί ανθόκηποι	12,02%	4,62%	0,00%	Flower Gardens
Θερμοκήπια λαχανικών	80,82%	84,22%	96,89%	Vegetable Greenhouses
Θερμοκήπια ανθέων	7,16%	11,16%	3,11%	Flower Greenhouses

Πηγή/Source: ΕΣΥΕ (Στοιχεία 2004) / Greek Statistical Authority

**Table 5.16c: Irrigated land analysis (2004)**

	Σύνολο χώρας / Country Total	Περιφέρεια / Region	ΠΕ Ροδόπης / Reg. Dpt. Of Rodopi	
Συνολική αρδευθεισών καλλιεργειών	14.634.369	1.979.077	416.411	Total Irrigated crops
Αροτραίες καλλιέργειες	9.474.870	1.743.263	393.063	Arable crops
%	64,74%	88,08%	94,39%	%
Κηπευτικές καλλιέργειες	1.103.155	94.578	16.903	Vegatable xcrops
%	7,54%	4,78%	4,06%	%

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Δενδρώδεις καλλιέργειες	3.625.860	101.536	5.939	Trees plantations
%	24,78%	5,13%	1,43%	%
Άμπελοι σταφιδάμπελοι	430.484	39.700	506	Vines & raisin vines
%	2,94%	2,01%	0,12%	%

Πηγή/Source: ΕΣΥΕ (Στοιχεία 2004) / Greek Statistical Authority

5.1.7.2

Forests

A description of the forest areas and their vegetation schemes along the proposed pipeline route (According to CORINE 2000 data & data from local authorities) is provided in APPENDIX G (Map P513-100-99-001).

It must be noted here that the pipeline crosses for a small length the protective forest in the municipality of Komotini (ΦΕΚ 253Δ' 3-4-2006). The crossing area is described as agricultural by the local forest authorities (see relevant letter in APPENDIX D).

The forests of the region of Eastern Rodopi from which the Natural Gas pipeline route passes consist mainly from beeches, pinewoods and with bushy oaks in lower altitudes. The individual species to be found are:

**Table 5.17:** Forest flora in the area of the pipeline route.

Quercus robur (δρυς η έμμισχος)
Quercus trojana (Δρυς η Μακεδονική)
Quercus cerris (δρυς η κηρρίς)
Quercus coccifera (δρυς η κοκκοφόρος - πουρνάρι)
Fagus sylvatica (Δασική οξιά)
Fagus orientalis (Ανατολική οξιά)
Pinus nigra pallasiana (Ανατολικό μαυρόπευκο)
Pinus peuce (Μακεδονικό πεύκο)
Pinus sylvestris sylvestris (Δασόπευκο)
Abies borisii-regis (Μακεδονικό έλατο)

According to the Greek Law the construction of infrastructure projects inside forest areas is allowed, provided that all the necessary measures for the protection of the environment are taken.

In any case Article 171 paragraph 1 of Law 4001 (FEK 179A' / 22-08-2011) allows the use of forest land for the construction of the pipelines mentioned in this Law, including the IGB project.

the very recent decision ΥΠΕΚΑ 15277 (ΦΕΚ 1077B' 09-04-2012) with which **the required by the forest laws intervention approval is now incorporated in the environmental terms document**. For this reason the present study includes detailed maps of the areas of the proposed pipeline route (Scale 1:5.000) to assist the characterization of the forest areas by the local authorities.

#### 5.1.8

#### Protected Areas

From 1937, Greece began to recognize regions with special ecological interest (forests, wetlands etc) and to place him under arrangement of protection.

The approach that was followed in the first stages of institution of protected regions was the absolute protection of natural regions and the exclusion of human activities. In the course of time, this approach is abandoned and gives place to the perception of incorporation of protected regions in environmental space and the close connection of protection with the use of natural resources in a sustainable manner.

In Greece natural regions are recognized as protected or not via their characterization with the national legislation in effect, or with their consolidation in the frame of international conventions ratified by the country along with international or European initiatives. Furthermore, the regions of Network Natura 2000, constitute regions of Special Protection Areas and Sites of Community Importance. In a lot of cases overlapping between the protected regions in national, European and international level is observed.

An analysis of these areas follows :

- Protected areas based on National legislation
- Protected areas based on International Level conventions
- Protected areas in European Level law
- Natura 2000 network areas.

#### Protected areas based on National legislation

Considering the National Legislation the declaration of protected areas in several categories was based (until 1986) in the various articles of the Forestry Law (Δασικό Κώδικα in Greek). The national Forests, the Aesthetic Forests and the Preservable Monuments of Nature are mentioned in Law 996/1971 which is part of law 86/1969 «About Forest Code».

The Wild Life shelters, the Controlled Hunting Regions and preys breeding areas are provided by Law 177/75, as amended by Law 2637/1998. With the Framework Law on the Environment (Law 1650/86), five categories of protected regions are defined : Regions of absolute protection of nature, regions of protection of nature, national parks, protected natural landscape and eco-development regions. The categories of protected regions of natural environment, according to the existing national legislation, are following:

- § National Forests (N. 996/71)
- § National Parks (N. 1650/86)
- § Aesthetic Forests (N. 996/71)
- § Preservable Monuments of Nature (N. 996/71)

- § Wild Life shelters (N. 177/75, as amended by N. 2637/98)
- § Controlled Hunting Regions (N. 177/75, as amended by N. 2637/98)
- § Preys breeding areas (N. 177/75, as amended by N. 2637/98)
- § Regions of protection of nature (N. 1650/86)
- § Regions of absolute protection of nature (N. 1650/86)
- § Protected Forests (N. Δ 86/1969, as it stands today)
- § Protected natural landscape (N. 1650/86)
- § Eco-development regions (N. 1650/86)

#### Protected areas based on International Level conventions

Apart from the national legislation, special obligations on the protection of nature derive from the relative International Conventions, which Greece has ratified as well as from its attendance in international organisations like the Council of Europe and UNESCO.

The protected in international level regions are the Wetlands of International Importance from the Ramsar Convention, the Monuments of World Heritage (UNESCO), the Reserves of Biosphere (UNESCO, Person and Biosphere), the Specifically Protected Regions (Barcelona Convention), the Biogenetic Reserves (Council of Europe) and the Regions in which Eurodiploma has been granted (Council of Europe).

- § Wetlands of International Importance from the Ramsar Convention
- § Monuments of World Heritage (UNESCO)
- § Reserves of Biosphere (UNESCO, Person and Biosphere)
- § Specifically Protected Regions (Barcelona Convention) (Protocol 4)
- § Biogenetic Reserves (Council of Europe)
- § Regions in which Eurodiploma has been granted (Council of Europe)

#### Protected areas under European Level law

An significant extent of country has been included in the European Ecological Network Natura 2000. Greece includes at its National List 163 Special Protection Areas (SPAs) according to Directive 79/409/EEC and 239 Sites of Community Importance (SCIs) according to Directive 92/43/EEC. The surface area of the network in Greece, excluding overlaps, is approximately 3.4 million hectares and occupies 21% of the land.

The 10 National Forests, the Wetlands of International Importance from the Ramsar Convention along with other significant areas like the Aesthetic Forests and the Preservable Monuments of Nature have also been included in the Network.

#### Natura 2000 areas.

Natura 2000 is an ecological network composed of sites designated under the Birds Directive (Special Protection Areas, SPAs) and the Habitats Directive (Sites of Community Importance, SCIs, and Special Areas of Conservation, SACs).

Natura 2000 network is set up to ensure the survival of Europe's most valuable species and habitats. Natura 2000 is based on the 1979 Birds

Directive and the 1992 Habitats Directive. The green infrastructure it provides safeguards numerous ecosystem services and ensures that Europe's natural system remain healthy and resilient.

For each Natura 2000 site, national authorities have submitted a standard data form (SDF) that contains an extensive description of the site and its ecology. The European Topic Centre for Biological Diversity (ETC/BD), based in Paris, is responsible for validating this data and creating an EU wide descriptive database.

**The proposed pipeline routing in its course from south to north does NOT come close (or cross) any of the abovementioned NATURA 2000 Network protected areas.** However some information on the nearest NATURA 2000 areas, in the Rodopi region, is provided as outlined below :

#### 5.1.8.1

NATURA 2000 Areas near the pipeline route.

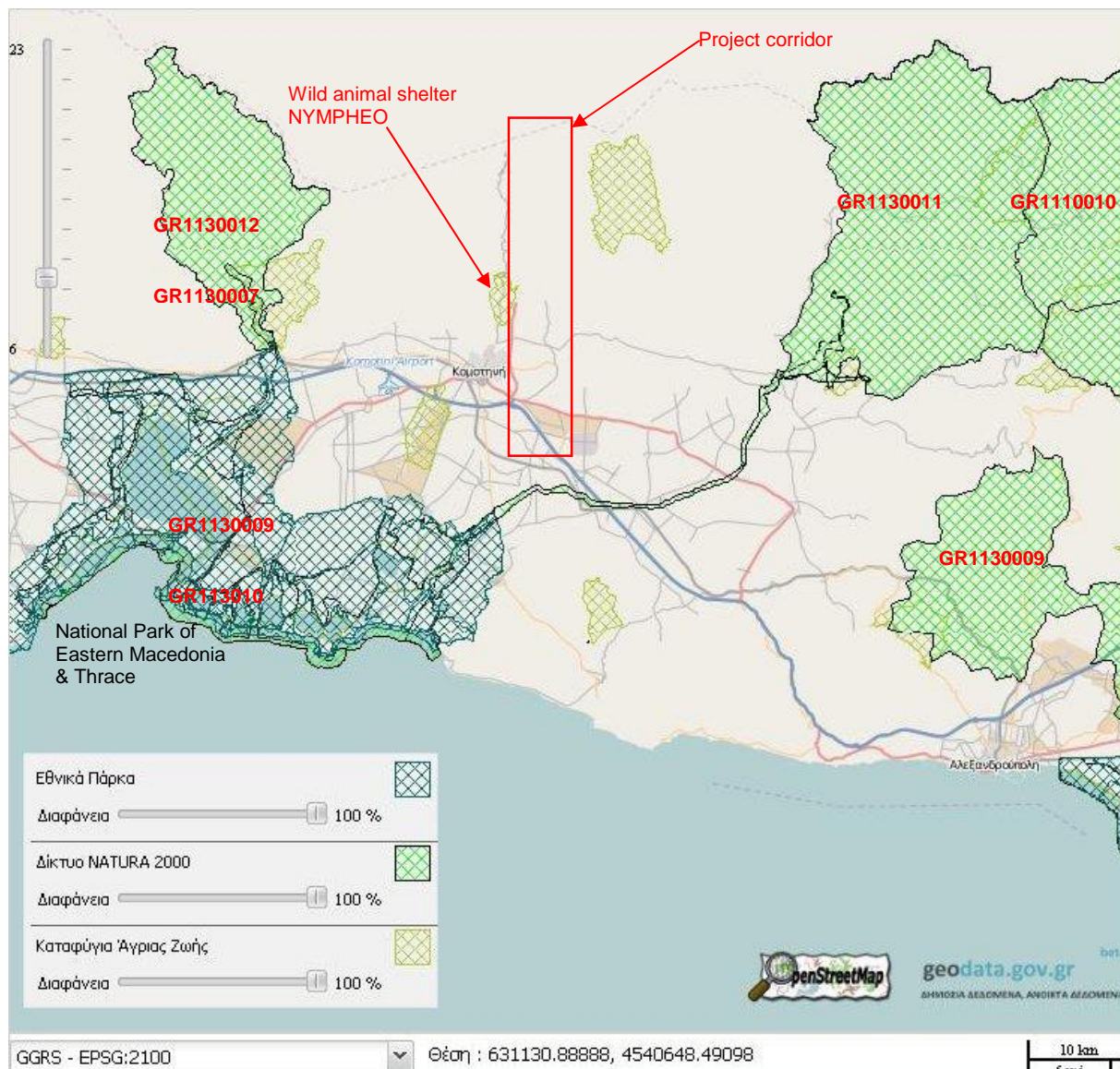
The following table lists the Natura 2000 protected areas in the general Rodopi area. It must be noted that these areas are NOT crossed by either the proposed or the alternative routings because they lie in large distances from them as it can be observed in the following figure.

**Table 5.18 : Natura 2000 Areas in the Rodopi Regional Department.**

	Code				Area (he)
1	GR1130006	SCI	E	Ποταμός Φιλιούρης / POTAMOS FILIOURIS	20
2	GR1130007	SCI	I	Ποταμός Κομπάτος (Νέα Κοίτη) / POTAMOS KOMPSATOS (NEA KOITI)	4
3	GR1130008	SCI	B	Μαρώνεια-Σπηλαίο (γραμμικός ΤΚΣ0,23 km) / MARONEIA - SPILAION	--
4	GR1130009	SCI	I	Λίμνες & Λιμνοθάλασσες της Θράκης Ευρ.Περιοχή & Παρ. Ζώνη / LIMNES KAI LIMNOTHALASSES TIS THRAKIS - EVRYTERI PERIOCHI KAI PARAKTIA ZONI	295
5	GR1130010	SPA	H	Λίμνες Βισθωνίς, Ισμαρίς Λιμνοθάλασσες Πόρτο Λάγος, Αλυκή Πτελέα, Ιηρολίμνη, Καρατζά / LIMNES VISTONIS, ISMARIS - LIMNOTHALASSES PORTO LAGOS, ALYKI PTELEA, XIROLIMNI, KARATZA	182
6	GR1130011	SPA	J	Κοιλάδα Φιλιούρη / KOILADA FILIOURI	375
7	GR1130012	SPA	J	Κοιλάδα Κομπάτου / KOILADA KOMPSATOU	166



**Figure 5.17:** Natura 2000 protected areas, National Parks & wild life shelters in the greater project area.



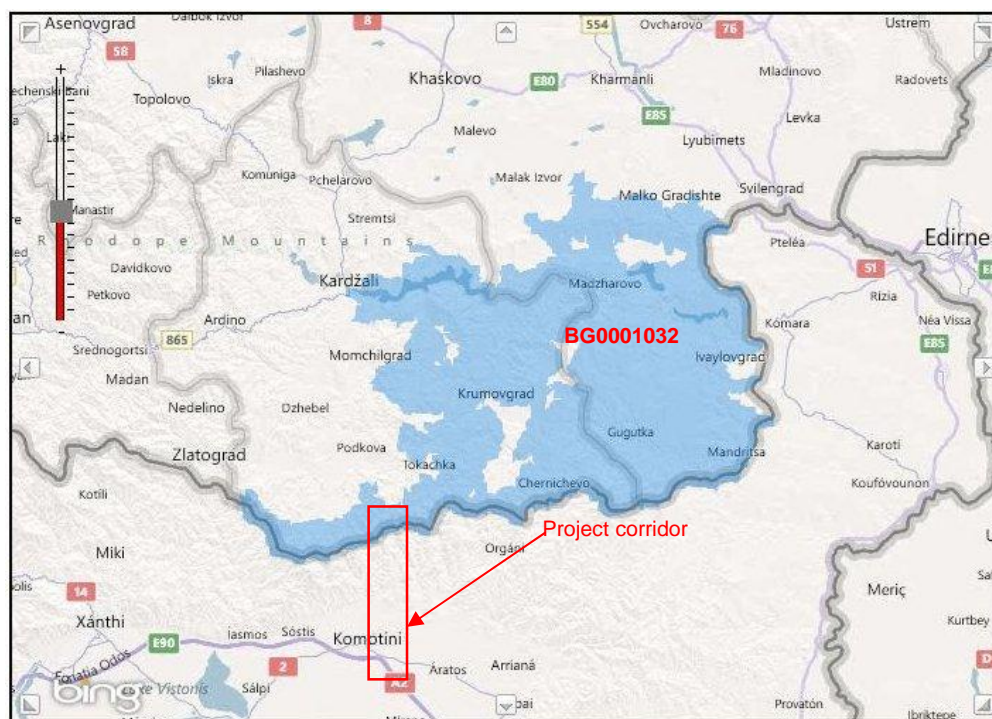
#### 5.1.8.2

#### NATURE 2000 protected areas in the Bulgarian side of the border.

Although neither the recommended route (REC) nor the two alternative routes cross any NATURA 2000 areas in the Greek territory, the same does not apply in the Bulgarian side of the border. Specifically, regardless of the exact point of border crossing (according to the route selection REC, ALT-1 or ALT-2) the pipeline route crossed the NATURA 2000 area BG0001032 Rodopi-IZTOCHNI Special Area of Conservation (SAC, EC Habitats Directive) as shown in the figure below.



**Figure 5.18:** Natura 2000 areas in the greater project area at the Bulgarian side of the border.



Details for the protection status the abovementioned Natura protected area are presented in APPENDIX F.

#### 5.1.8.3

#### Wild animal shelters & Important Birds Areas near the pipeline route.

A wild animals shelter (Καταφύγιο Άγριας Ζωής «Νυμφαία» Δήμου Κομοτηνής κωδ. Κ799, ΦΕΚ 842/Β/03-07-01 Τροποποίηση) lies in the path of the pipeline route. The pipeline crosses it for a small length in an area with thin vegetation, described as agricultural by the local forest protection authorities (See relevant letter in APPENDIX D)

According to Law 2637/98 (ΦΕΚ 200/Α'/27-8-98) the construction of infrastructure projects inside wild animals shelters is allowed, provided that all the necessary measures for the protection of the environment are taken as indicated in the EIA study.

**Figure 5.19:** Important Bird Areas in the Eastern Macedonia & Thrace Region



Source / Πηγή : Hellenic Ελληνική Ορνιθολογική Εταιρεία Hellenic Ornithological Society

Two important bird areas (IBAs) exist on either side of the project corridor in large distance. The pipeline route lies on the western limit of Gr008 but at a large distance from Gr009. In particular :

#### Gr008 Filiouri river valley and east rodopi mountains

The site encompasses hills to the south-east of Mount Rodopi and the catchment of the Filiouri river. Vegetation cover is predominantly scrub with some grazed oak Quercus forest. Land-use is traditional and non-intensive. Part of IBA covered by Wildlife Refuge (Pefkodasas Nimfeas, 400ha). 37504 ha of the IBA are covered by Special Protection Area (SPA) KOILADA FILIOURI (GR1130011).

Criteria: A1, B2, B3, C1, C6  
Coordinates: 41° 10' N 25° 45' E

Altitude: 50-745m  
Area: 77000 ha

#### Gr009 Kompsatos valley

A deep river valley surrounded by hills with deciduous forest, scrub and grassland. The main human activity is livestock-farming. 16582 ha of the IBA are covered by Special Protection Area (SPA) KOILADA KOMSATOU (GR1130012).

Criteria: A1, B2, B3, C1, C6  
Coordinates: 41° 10' N 25° 7' E

Altitude: 20-800 m  
Area: 16000 ha

Especially for Gr008 (Filiouri river valley and east rodopi mountains) on the western limit of which the pipeline route lies some data according to the Hellenic Ornithological Society Follows :

This is an important site for breeding and passage raptors and species associated with forest and scrub. Species of global conservation concern that do not meet IBA criteria: Aquila heliaca (breeding), Falco naumanni (passage). The main threats are from road construction, deforestation and intensified forest management.

The bird species in this IBA are :

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Species	Season	Year	Min	Max	Acc	Criteria
<i>Phylloscopus orientalis</i> Eastern Bonelli's Warbler	breeding	1995	Common		average	B3
<i>Dendrocopos medius</i> Middle Spotted Woodpecker	resident	1995	Common		average	C6
<i>Dendrocopos syriacus</i> Syrian Woodpecker	resident	1995	Common		average	B3, C6
<i>Strix aluco</i> Tawny Owl	resident	1992	Frequent		average	B3
<i>Neophron percnopterus</i> Egyptian Vulture	breeding	1995	5	-	average	B2, C6
<i>Gyps fulvus</i> Eurasian Griffon	resident	1995	2	5	average	C6
<i>Aegypius monachus</i> Cinereous Vulture	non-breeding	1996	Frequent		average	A1, C1
<i>Circaetus gallicus</i> Short-toed Snake-eagle	breeding	1995	10	-	average	B2, C6
<i>Aquila chrysaetos</i> Golden Eagle	resident	1995	2	4	average	C6
<i>Lanius collurio</i> Red-backed Shrike	breeding	1995	Common		average	B2, C6
<i>Ficedula semitorquata</i> Semicollared Flycatcher	breeding	1990	Rare		poor	B2, C6
<i>Sylvia hortensis</i> Orphean Warbler	breeding	1993	Uncommon		average	B2
<i>Emberiza hortulana</i> Ortolan Bunting	breeding	1995	Common		average	B2, C6

Source / Πηγή : Ελληνική Ορνιθολογική Εταιρεία Hellenic Ornithological Society

## 5.2 Man-made Environment

### 5.2.1 General remarks

The Regional Department of Rodopi is located in north-eastern Greece, in the Geographical Region of Thrace, and is surrounded by Thrakiko sea (N), the regional Dpt. of Xanthi (W), the Greek-Bulgarian borders (N) and the regional Dpt. of Evros (E). It has 103.190 residents (census of 1991), an area of 2.542, 5 Km<sup>2</sup> and constitutes the 1,9% of the country. From his total extent the 966.000 stremmes are flat extents, the 814.000 stremmes are semi-mountainous and the 763.000 stremmes are mountainous. The mountainous areas of the region are the Rodopi mountain range in the north, as well as the Ismaros mountains in the south-east.

The Regional Department of Rodopi and all of Thrace, is one of the most under-developed regions of Greece and Europe as well. Its geopolitical location, the absence of modern infrastructure the permanent escape of human potential and some political problems compose the general the frame of the lack of development.

However the completion of the construction of the modern highway axis “Egnatia” that connects Europe with Asia along with the vertical axes – connecting the Balcan countries- has given essential impulse in the growth of region. Other planned large projects in the area are the construction of the oil pipeline from the city of Burgas in Bulgaria to Alexandroupolis and the extension of the natural gas pipelines (eg ITGI, IGB).

The majority of active population works in the primary sector, while the 25% roughly in secondary or tertiary. The plains of Komotini - are irrigated only at the 1/3 - are from the most productive in Greece and produce cereals, cotton, maize, sugar beets, industrial tomato, tobacco and other products.

The Thrace region is covered by a most favourable range of developmental motives offering unique investment occasions in the sector of industry, manufacture and tourism from the decade of '70 and afterwards. With the base developmental law 1892/90 along with its improvements, the subsidies are substantial. Particularly the enterprises that are installed in the three industrial regions of Xanthi, **Komotini**, Alexandroupoli are encouraged. In the prospect of extrovert economic activity the region of Thrace can constitute along with Macedonia the economic and cultural gate to the Aemos Peninsula and the countries around the Black Sea. It can also be the gate from the countries of Eastern Europe to the Mediterranean Sea.

The subsoil, according to the existing data, is rich, but systematic exploitation has not started yet. Gold has been located in the depositions of Lissos river, ferric ore in the region of Maroneia, antimony and chromium in the region of Chloe, copper-pyrite in Koptero and antimony in Gratini-Kallyntirio. The geothermal field of Sapes region is regarded as having a great potential.

## 5.2.2 Population & Quality of life

### 5.2.2.1 Population

#### Rodopi Regional Department

With Komotini as a capital, the Regional Dpt. of Rodopi includes about 1% of the population of the country with a tendency of reduction. The natural reduction of population per 1.000 residents (births/1.000 residents) was increased from -0.6 in 2000 to -1.2 in 2002, with low proportion of students in Public schools per 1.000 residents (55 against mean of country 59). It has also the 2nd higher proportion of marriages per 1.000 residents in the country following Xanthi (6,5 with mean of country 5,1). Between inventories 1991 and 2001 the population had increased at 7,4%. The regional Dpt. produces about 0,7% of Gross Domestic Product of the country and its contribution in the GNP of the country it is maintained constant in the past few years.

The population trends in the Regional Department of Rodopi are presented in the following table :

**Table 5.9** Regional Department Population Trends

ΠΛΗΘΥΣΜΟΣ	1991A	2001A	2004	POPULATION
Αριθμός μόνιμων κατοίκων	104073	111237	111010	Number of permanent residents
Αριθμός κατοίκων πρωτεύουσας	40522	-	-	Number of capital residents
Πυκνότητα πληθυσμού, κάτοικοι/τ.χμ.	40,6	43,74243	43,653166	Population density (res/sq Km)
Αστικός Πληθυσμός	39927	57044	-	Urban population
Ημιαστικός πληθυσμός	8903	-	-	Semi-urban population
Αγροτικός πληθυσμός	54360	53784	-	Rular population
Γάμοι (μόνιμη κατοικία του συζύγου)	709	-	661	Marriages
Γεννήσεις (μόνιμη κατοικία μητέρας)	970	-	1010	Births
Θάνατοι (μόνιμη κατοικία θανόντος)	1082	-	1092	Deaths
Αριθμός Νοικοκυριών	32595	36956	-	Number of households
Εργατικό δυναμικό	43018	48823	-	Workforce
Απασχολούμενοι	40593	44505	-	Employed
Ανεργοί	2425	4318	4459	Unemployed
Επιφάνεια, τ.χμ.	2543	2543	2543	Area (sq. Km)
Φυσική αύξηση πληθυσμού/1000 κατοίκους	-1,076168	-	-0,738672	Natural population increase/1000r
Γάμοι ανά 1000 κατοίκους	6,812526	-	5,954419	Marriages / 1000r
Αριθμός αλλοδαπών κατοίκων	-	1716	-	Number of Alien residents
Αριθμός κατοίκων	103190	110828	-	Number of Residents
Αριθμός Νοικοκυριών, μόνιμοι κάτοικοι	-	36768	-	Number of households, permanent
Ανεργοί % εργατικού δυναμικού	5,6372	8,8442	7,8	Unemployed (% workforce)
Ανεργοί, γυναίκες	-	-	2483	Unemployed women
Μέλη νοικοκυριών, μόνιμοι κάτοικοι	-	105489	-	Members of households
Μέσο μέγεθος νοικοκυριού	-	2,869044	-	Mean size of household
Γεννήσεις ανά 1000 κατοίκους	-	-	9,098279	Births / 1000 residents



The population in the Komotini Municipality, which is the only one from which the NG pipeline passes, is presented in the following table :

**Table 5.10** Komotini Municipality Population breakdown.

ΟΝΟΜΑ ΤΕΩΣ ΔΗΜΟΥ - ΚΟΙΝΟΤΗΤΑΣ	ΚΑΠΟΔ. ΔΙΟΙΚ. ΔΙΑΙΡΕΣΗ	ΟΝΟΜΑ ΚΑΠ. ΟΤΑ	ΟΝΟΜΑ ΔΗΜΟΤΙΚΗΣ ΕΝΟΤΗΤΑΣ	ΠΛΗΘΥΣΜΟΣ
OLD MUNICIPALITY NAME	KAPODESTRIAN DIVISION	KAPODESTRIAN MUNICIPALITY NAME	NEW MUNICIPAL UNIT NAME	POPULATION
ΑΙΓΕΙΡΟΥ / AEGIROS	ΕΔΡΑ / BASE	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	1,541
ΑΡΩΓΗ / AROGI	ΤΟΠ.ΔΙΑΜ./DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	223
ΓΛΥΦΑΔΑΣ / GLYFADA	ΤΟΠ.ΔΙΑΜ. /DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	170
ΚΑΛΛΙΣΤΗΣ / KALLISTI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	179
ΜΕΛΕΤΗΣ / MELETI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	626
ΜΕΣΗΣ / MESI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	317
ΝΕΑΣ ΚΑΛΛΙΣΤΗΣ / NEW KALLISTI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	461
ΠΑΡΑΛΙΑΣ ΜΕΣΗΣ / PARALIA MESI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	31
ΠΟΡΠΗΣ / PORPI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	448
ΦΑΝΑΡΙΟΥ / FANARI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΑΙΓΕΙΡΟΥ / AEGIROS	ΑΙΓΕΙΡΟΥ / AEGIROS	422
<b>ΚΟΜΟΤΗΝΗΣ / KOMOTINI</b>	<b>ΕΔΡΑ / BASE</b>	<b>ΚΟΜΟΤΗΝΗΣ / KOMOTINI</b>	<b>ΚΟΜΟΤΗΝΗΣ / KOMOTINI</b>	<b>46,586</b>
ΑΝΘΟΧΩΡΙΟΥ / AGATHOCHORI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	142
ΓΡΑΤΙΝΗ / GRATINI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	533
ΘΡΥΛΟΡΙΟΥ / THRYLORIO	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	1,651
ΙΤΕΑ / ITEA	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	71
ΚΑΛΧΑΝΤΟΣ / KALCHAS	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	1,183
ΚΑΡΥΔΙΑΣ / KARYDIA	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	245
ΚΗΚΙΔΙΟΥ / KHKIDIO	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	424
ΚΟΣΜΙΟΥ / KOSMIO	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	914
ΠΑΝΔΡΟΣΟΥ / PANDROSOS	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	443
ΣΙΔΗΡΑΔΩΝ / SIDIRADES	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	167
ΣΤΥΛΑΡΙΟΥ / STYLARIO	ΤΟΠ.ΔΙΑΜ. /DPT.	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	ΚΟΜΟΤΗΝΗΣ / KOMOTINI	300
ΑΓΙΩΝ ΘΕΟΔΩΡΩΝ / AGIOI THEODOROI	ΤΟΠ.ΔΙΑΜ. /DPT.	ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHIRIO	ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHIRIO	556
ΜΕΓΑΛΟΥ ΔΟΥΚΑΤΟΥ / MEGALO DOUKATO	ΤΟΠ.ΔΙΑΜ. /DPT.	ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHIRIO	ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHIRIO	415
ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHORIO	ΕΔΡΑ/BASE	ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHIRIO	ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHIRIO	1,818
ΠΑΓΟΥΡΙΩΝ / PAGOURIA	ΤΟΠ.ΔΙΑΜ. /DPT.	ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHIRIO	ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ / NEW SIDIROCHIRIO	708
			<b>Σύνολο – ΚΟΜΟΤΗΝΗΣ</b> <b>Total - KOMOTINI</b>	<b>60,574</b>

#### 5.2.2.2

#### Residential Policy

The following table shows the residential policy trends in the reg. dpt. of Rodopi. A significant increase is evident, resulting in better quality of life for the residents.



**Table 5.11 Residential Trends – Regional Dpt. Of Rodopi**

ΚΑΤΟΙΚΙΕΣ	1995	2004	RESIDENCES
Αριθμός κατοικιών	-	-	Number of houses
Αριθμός νέων κατοικιών	586	1279	Number of new houses
Αριθμός δωματίων νέων κατοικιών	1929	3617	Number of rooms of new houses
Όγκος σε χιλ. m3 νέων κατοικιών	188	437	Volume (1000 m3) of new houses
Αριθμός νέων κατοικιών ανά 100 κατοίκους	0,542036	1,152148	Number of new houses/1000 residents
Επιφάνεια σε χιλ. m2 νέων κατοικιών	-	139,4	Surface (1000 m2) of new houses

### 5.2.2.3 Education & Healthcare

The similar trends in education & healthcare issues for the Rodopi Regional Department are presented in the following table :

**Table 5.12 Education Trends – Regional Dpt. Of Rodopi**

ΠΑΙΔΕΙΑ	1995	2004	EDUCATION
Αριθμός δημοτικών σχολείων	181	157	Number of state elementary schools
Διδακτικό προσωπικό δημοτ. Σχολείων	704	694	state elementary schools teachers
Μαθητές δημοτικών σχολείων	7350	6335	state elementary schools pupils
Αριθμός γυμνασίων	12	12	Number of state highschools
Διδακτικό προσωπικό γυμνασίων	194	253	State highschools teachers
Μαθητές γυμνασίων	2648	2467	state highschools pupils
Αριθμός λυκείων-ΤΕΕ	8	13	Number of state Lyceums
Διδακτικό προσωπικό λυκείων-ΤΕΕ	143	262	state Lyceums teachers
Μαθητές λυκείων-ΤΕΕ	1941	2676	state Lyceums pupils
Αριθμός ιδιωτικών δημοτικών σχολείων	134	119	Number of private elementary schools
Διδακτ. προσωπικό ιδιωτ. δημοτ. σχολείων	402	379	Private elementary schools teachers
Μαθητές ιδιωτικών δημοτικών σχολείων	3847	3138	Private elementary schools pupils
Αριθμός ιδιωτικών γυμνασίων	1	-	Number of private highschools
Διδακτ. προσωπικό ιδιωτ. Γυμνασίων	7	-	Private highschools teachers
Μαθητές ιδιωτικών γυμνασίων	170	-	private highschools pupils
Αριθμός ιδιωτικών λυκείων-ΤΕΕ	1	2	Number of private Lyceums
Διδακτ. προσωπικό ιδιωτ. λυκείων-ΤΕΕ	-	38	Private Lyceums teachers
Μαθητές ιδιωτικών λυκείων-ΤΕΕ	55	435	Private Lyceums pupils
Μαθητές Β/άθμιας εκπαίδευσης ανά 1000 κατοίκους	42,335511	46,32916	Secondary education pupils / 1000 residents
Μαθητές δημοτικού ανά 1000 κατοίκους	67,80693	57,066931	elementary education pupils / 1000 residents
Αριθμός γενικών λυκείων	-	9	Number of general lyceums
Αριθμός ΤΕΕ	-	4	Number of technical lyceums
Διδακτικό προσωπικό ενιαίων λυκείων	-	155	Teachers in general lyceums
Διδακτικό προσωπικό ΤΕΕ	-	107	Teachers in technical lyceums
Μαθητές ενιαίων λυκείων	-	1794	Pupils of general lyceums
Μαθητές ΤΕΕ	-	882	Pupils of technical lyceums
Διδακτικό προσωπικό ανά 100 μαθητές Β/άθμιας εκπαίδευσης	-	10,013611	Teachers / 100 students – secondary education
Μαθητές λυκείου ανά 1000 κατοίκους	-	-	Lyceum students / 1000 residents

**Table 5.13 Healthcare Trends – Regional Dpt. Of Rodopi**

ΥΓΕΙΑ	1995	2004	HEALTHCARE
Κλίνες θεραπευτηρίων	239	236	Hospital Beds
Ημέρες νοσηλείας	45295	57120	Days of care
Αριθμός ιατρών	182	317	Number of doctors
Αριθμός οδοντιάτρων	74	84	Number of dentists
Φαρμακεία	45	59	Pharmacies
Κλίνες ιδιωτικών κλινικών	12	11	Private clinics beds
Αριθμός ιατρών ανά 1000 κατοίκους	1,679029	2,855599	Number of doctors / 1000 residents
Αριθμός ιδιωτικών κλινικών	-	1	Number of private clinics
Αριθμός δημόσιων νοσοκομείων	-	1	Number of State Hospitals

### 5.2.3 Economy

#### 5.2.3.1 General Economic trends

The 21% of the Regional Dpt. gross product the corresponded in agriculture during 2002 (the 8th higher contribution in the country) from 28% in 1997 and produces about the 2% of total agricultural products of the country. It is the 5th producer region of tobacco in the country with 7% of total production, the 8th producer of cotton with 4% and the 10th producer of wheat with 4% in 2003. About 10% of the gross product corresponded to manufacturing in 2002 from 5,7% in 1997 and the regional dpt. produced 0,6% of total manufacturing production of country.

The investments corresponded to 0,7% of total investments of industrial enterprises in the country for the period 2000-2001, according to the elements of Annual Industrial Research of Greek National Statistical Organization, that receded in 2001. With a per capita product of € 8,5 k is classified 48th in Greece (66% of mean of Greece in 2002 or 51% of mean of EU of the 25 members).

19 cars correspond per 100 residents (with mean of country 33 in 2002) and 1,6 new residences (indicator increasing, with mean of country 1,2 in 2002). With declared income of € 9,7 k per taxed person in 2003 (rise 7%, 78% of mean of Greece), taxed persons paid in 2003 on average for tax of income 621 Euros, against mean of country 1.076. In this it corresponds 0,9% of the taxed population (rise 2,7% in 2003), 0,7% of declared income of country (+10%) and 0,5% of tax of income individual (+11%). The regional dpt. has the lower proportion of students of secondary education per 1.000 residents in the country (44 against mean 66). In 2004 the sales of new passenger cars increased 10% with rise of 13% of in the entire country. The road accidents in the of Rodopi increased at 38% in 2003 and 15% in 2004, however a low proportion of road accidents per 1.000 residents (0,5 in 2002) is observed.

**Table 5.14 Economic Trends – Regional Dpt. Of Rodopi**

ΑΚ. ΕΓΧΩΡΙΟ ΠΡΟΪΟΝ	1995	2004	GROSS NAT. PRODUCT
Ακαθ.Εγγ.Προϊόν, εκατ. ευρώ,εκατ. Δρχ. ως 1994	518	1251	Gross National Product mil. EURO
ΓΕΩΡΓΙΑ % ΑΕΠ	26,096	14,3137	AGRICULTURE % GNP
ΒΙΟΜΗΧΑΝΙΑ-ΚΑΤΑΣΚΕΥΕΣ % ΑΕΠ	17,119	23,8235	INDUSTRY-CONSTRUCTION % GNP
ΥΠΗΡΕΣΙΕΣ % ΑΕΠ	56,785	61,8627	SERVICES % GNP
Ακαθ.Εγγ.Προϊόν κατά κεφαλή, ευρώ, δρχ. ως 1994	4773,659628	11247,404116	Gross National Product per capita EURO
Ακαθ.Εγγ.Προϊόν κατά κεφαλή % μ.ό. χώρας	63,513336	67,156714	Gross National Product per capita % country mean
ΓΕΩΡΓΙΑ, εκ. ευρώ, εκ. δρχ. ως 1994	125	146	Agriculture mil. EURO
Ενέργεια, εκ. ευρώ, εκ. δρχ. ως 1994	7	25	Energy mil. EURO
Μεταποίηση, εκ. ευρώ, εκ. δρχ. ως 1994	36	124	Manufacture mil EURO
Κατασκευές, εκ. ευρώ, εκ. δρχ. ως 1994	39	93	Construction mil EURO
ΥΠΗΡΕΣΙΕΣ, εκ. ευρώ, εκ. δρχ. ως 1994	272	631	Services mil EURO
Μεταποίηση % μεταποίησης χώρας	0,378833	0,751743	Manufacture % country mean
Υπηρεσίες % υπηρεσιών χώρας	0,54292	0,499098	Services % country mean
Μεταλλεία - Ορυχεία,εκ. ευρώ, εκ. δρχ. ως 1994	-	1	Mining mil EURO
Μεταλλεία - Ορυχεία % ΑΕΠ	-	0,098	Mining % country mean
Μεταποίηση % ΑΕΠ	7,5157	12,1569	Manufacture % GNP
Ενέργεια % ΑΕΠ	1,4614	2,451	Energy % GNP
Κατασκευές % ΑΕΠ	8,142	9,1176	Construction % GNP
Γεωργία % γεωργίας χώρας	1,711718	1,775076	Agriculture % country
Ακ. Προστιθέμενη αξία, εκατ. Ευρώ	479	1020	Gross added value mil EURO
Εμπόριο, εκ. Ευρώ	57	123	Commerce mil EURO

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Ξενοδοχεία και εστιατόρια, εκ. Ευρώ	20	55	Hotels & Restaurants mil EURO
Μεταφορές- επικοινωνίες, εκ. Ευρώ	30	13	Transport-Communications mil EURO
Χρηματοπιστωτική διαμεσολάβηση	17	39	Banking
ΑΕΠ % ΑΕΠ χώρας	0,648083	0,610836	GNP % country GNP
Ξενοδοχεία και εστιατόρια % ξενοδ. χώρας	0,415111	0,508036	Hotels & Restaurants % country hotels
Ξενοδοχεία και εστιατόρια % ΑΕΠ	4,1754	5,3922	Hotels & Restaurants % GNP
ΒΙΟΜΗΧΑΝΙΑ-ΚΑΤΑΣΚΕΥΕΣ, εκ. Ευρώ	82	243	INDUSTRY-CONSTRUCTION mil EURO

Table 5.15 Investment Trends – Regional Dpt. Of Rodopi.

ΕΠΕΝΔΥΣΕΙΣ	1995	2004	INVESTMENTS
Ιδιωτικές, εκ. ευρώ, νέα σειρά από 2000, εκ.δρχ. ως 1994	-	-	Private mil DR / mil €
Δημόσιες, εκ. ευρώ, νέα σειρά από 2000, εκ.δρχ. ως 1994	7618	-	State mil DR / mil €
Σύνολο, εκ. ευρώ, νέα σειρά από 2000, εκ.δρχ. ως 1994	-	-	Total mil DR / mil €
Επενδύσεις μετ/κών επιχ/σεων (απασχ.>10 άτομα), εκ ευρώ, εκ.δρχ. ως 2001	3145	13,8	Investemts in manufacture (>employees)
Αρ. μεταποιητικών επιχειρήσεων/σεων (απασχ.>10 άτομα)	36	37	Number of Manufacturing companies
Ιδιωτικές σε κατοικίες, εκ. ευρώ, νέα σειρά από 2000, εκ.δρχ. ως 1999	9505	-	Private in real estate mil DR / mil €
Ιδιωτικές Ν2234/23α, αριθμός σχεδίων	1	-	Private L. N2234/23α
Ενταγμένες στο Γ'ΚΠΣ ιδιωτικές επενδύσεις ως 31/12, χιλ. ευρώ	-	78726	Private 3 <sup>rd</sup> CSF thousand €
Ενταγμένες στο Γ'ΚΠΣ ιδιωτικές επενδύσεις, ΜΜΕ, ως 31/12, χιλ. ευρώ	-	23812	Private 3 <sup>rd</sup> CSF- ΜΜΕ- thousand €
Ενταγμένες στο Γ'ΚΠΣ ιδιωτικές επενδύσεις, Τουρισμός, ως 31/12, χιλ. Ευρώ	-	2515	Private 3 <sup>rd</sup> CSF –TURISM- thousand €
Σύνολο ενταγμένων έργων Γ'ΚΠΣ 2000-2006, ως 31/12, χιλ. ευρώ(νομαρχιακά)	-	387871	TOTAL 3 <sup>rd</sup> CSF thousand €

5.2.3.2

Agriculture & stock Breeding

Agriculture and stock-breeding is the main economical activity in the regional departments of Rodopi. Some indicative figures of these activities are presented in the following table :

Table 5.16 Agriculture and stock-breeding economical parameters

ΓΕΩΡΓΙΑ	1995	2003	AGRICULTURE
Σύνολο καλλιεργειών, στρέμματα	873147	-	Total cultivated land (x 1000 m3)
Αρδευθείσες καλλιεργειες, στρέμματα	381041	-	Total irrigated land (x 1000 m3)
Ελαιόλαδο, τόνοι	-	12	Olive Oil (Tn)
Καπνός, τόνοι	9799	8675	Tobacco (Tn)
Βαμβάκι, τόνοι	88965	45580	Cotton (Tn)
Σιτάρι, τόνοι	80095	70494	Wheat (Tn)
Μήλα, τόνοι	216	370	Apples (Tn)
Ροδάκινα, τόνοι	122	127	Peaches (Tn)
Πατάτες, τόνοι	3684	1879	Potatoes (Tn)
Τομάτες, τόνοι	49186	41642	Tomatoes (Tn)
Κρέας, τόνοι	6105	5510	Meat (Tn)
Γάλα, τόνοι	31918	34438	Milk (Tn)
Τυρί μαλακό, τόνοι	2014	2398	Soft Cheese (Tn)
Τυρί σκληρό, τόνοι	31	30	Hard Cheese (Tn)
Αυγά, χιλ.τεμάχια	15409	15747	Eggs (x1000)
Αριθμός εκμεταλλεύσεων με βοοειδή	-	16664	Cattle Farms
Αριθμός βοοειδών	-	808	Cattle
Αριθμός εκμεταλλεύσεων με πρόβατα	-	2159	Sheep Farms
Αριθμός προβάτων	-	26948	Sheep
Αριθμός εκμεταλλεύσεων με αίγες	-	1443	Goat Farms
Αριθμός αιγών	-	152865	Goats
Αριθμός εκμεταλλεύσεων με χοίρους	-	933	Pig Farms
Αριθμός χοίρων	-	151695	Pigs

Source : [www.economics.gr](http://www.economics.gr)

### 5.2.3.3 Industry & Commerce

Industry & commerce are developed mainly in the Komotini Industrial Area  
Some indicative data for Industry & commerce in the regional department of Rodopi are presented below :

**Table 5.17 Industry & Construction Data for Rodopi Regional Dpt.**

ΒΙΟΜΗΧΑΝΙΑ-ΒΙΟΤΕΧΝ.-ΚΑΤΑΣΚΕΥΕΣ	1995	2004	INDUSTRY & CONSTRUCTION
Αριθμός μεταποιητικών και κατασκευαστ. επιχειρήσεων	276	-	No of manufacture & construction companies
Μέση ετήσια απασχόληση-Ατομα	2006	-	Mean employment – persons
Κύκλος εργασιών, εκ. δρχ.	34771	-	Annual turnover (mil DR)
Αριθμός μεταποιητικών επιχειρήσεων	164	620	Manufacture companies
Μέση ετήσια απασχόληση-Ατομα	1439	-	Mean employment – persons
Κύκλος εργασιών μετ/κών επιχ/σεων, εκ. δρχ., εκ. ευρώ από 2000	26638	291,6	Annual turnover Manufacture companies (mil DR / mil €)
Αριθμός κατασκευαστικών επιχειρήσεων	112	571	Construction companies
Μέση ετήσια απασχόληση-Ατομα	567	-	Mean employment – persons
Κύκλος εργασιών κατασκ. επιχ/σεων, εκ. δρχ., εκ. ευρώ από 2000	8133	40,11	Annual turnover construction companies (mil DR / mil €)

Source : [www.economics.gr](http://www.economics.gr)

**Table 5.18 Commerce Data for Rodopi Regional Dpt.**

ΕΜΠΟΡΙΟ – ΥΠΗΡΕΣΙΕΣ	1995	2004	COMMERCE & SERVICES
Αριθμός επιχειρήσεων χονδρικού εμπορίου	238	353	Commerce companies
Μέση ετήσια απασχόληση-άτομα.(χονδ)	751	-	Mean employment – persons
Κύκλος εργασιών χονδρικού εμπορίου, εκ. ευρώ, εκ.δρχ ως 1999	33601	200,21	Annual turnover commerce companies (mil DR / mil €)
Αριθμός επιχειρήσεων λιανικού εμπορίου	728	1662	Commerce companies (retail)
Μέση ετήσια απασχόληση-άτομα.(λιαν)	1295	-	Mean employment – persons
Κύκλος εργασιών λιανικού εμπορίου, εκ. ευρώ, εκ.δρχ ως 1999	34498	200,03	Annual turnover commerce companies (mil DR / mil €)
Επιχειρήσεις υπηρεσιών	287	-	Services companies
Μέση ετήσια απασχόληση (υπηρεσίες)	691	-	Mean employment – persons
Κύκλος εργασιών-υπηρεσίες, εκατ.δρχ	9087	-	Annual turnover services companies (mil DR / mil €)
Αριθμός επιχειρήσεων ξενοδοχείων-εστιατορίων	-	828	Hotels & Restaurants
Κύκλος εργασιών ξεν/χείων-εστ/ρίων, εκ. ευρώ	-	43,71	Annual turnover hotels & restaurants (mil DR / mil €)
Αριθμός επιχειρήσεων εμπορίας, συντήρησης αυτοκινήτων	-	380	Car sales & maintenance
Κύκλος εργασιών επιχ. εμπορίας, συντ. αυτ/των, καυσίμων, εκ. ευρώ	-	87,26	Annual turnover Car sales & maintenance (mil DR / mil €)
Αριθμός επιχειρήσεων υπηρεσιών εκπαίδευσης	-	33	Education companies
Κύκλος εργασιών επιχειρήσεων υπηρεσιών εκπαίδευσης, εκ. ευρώ	-	1,6	Annual turnover Education companies (mil DR / mil €)
Αριθμός επιχειρήσεων υπηρεσιών υγείας	-	15	Healthcare companies
Κύκλος εργασιών επιχειρήσεων υπηρεσιών υγείας, εκ. ευρώ	-	1,48	Annual turnover healthcare companies (mil DR / mil €)

Source : [www.economics.gr](http://www.economics.gr)

### 5.2.4 Cities - Urban Planning and land use

As a general remark, It is obvious that the proposed pipeline in concert with the proposed new development axis from Komotini to Bulgaria, as outlined in the Regional Plan for Spatial Design and Sustainable Development of the Region (see Figures 5.17 & 5.18 below).

Concretely in the paragraph 3.7.1 Energy is reported: “..... The region of Eastern Macedonia & Thrace develops as an emerging energy centre of

the country. This is realized not only based on the energy resources of the Region but with the passage of **natural gas pipelines.**”

The pipeline route passes near Komotini (outside its General Urban Plan) and some smaller settlements (outside their limits) :

- Thrylorio
- Rodites
- Karydia
- Kalchas
- Pandrosos
- Nymphaea

Data regarding the General Urban Plans (ΓΠΣ) of the Cities & towns near the proposed and alternative routes as well as Zones of Urban Control (ZOE) were collected from the relevant authorities.

The official city limits and the other Urban Planning related zones are clearly demonstrated in the PIPELINE ROUTING MAPS / RECORDING PLANS, P513-100-91-001 & P513-100-92-001 to -012 presented in APPENDIX G.

The major Urban Planning Related zones in the proposed route of the pipeline are presented below :

- General Urban Plan of Komotini – Study under elaboration (Land Uses and Zone of Urban Control)
- Settlements of Karydia & Pandrosos (Limits)
  - a. ΦΕΚ Δ 425 – 30.04.1986
  - b. Urban development inside and outside the limits of Settlements of Karydia & Pandrosos (Prefectural Decision, February 1991)

The major land use data for the area of Rodopi, according to the Greek Statistical Authority are presented in the tables below :

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**Table 5.19** Generalized land cover data categories for the area of Rodopi Reg. Department.

Εκτάσεις σε χιλιάδες στρέμματα		Areas in hundred hectares							
Περιφ. Ενοτ. Δήμοι - Region. Dpt., Municipalities	Αριθμός δήμων / κοινοτήτων Number of Municipalities / Communes	Σύνολο εκτάσεων All areas	Καλλιεργούμενες εκτάσεις και αγροαπαύσεις Area under cultivation and fallow land	Βοσκότοποι Pastures	Δάση Forests	Εκτάσεις καλυπτόμενες από νερά Area under water	Έκτασεις οικισμών (κτίρια, δρόμοι, κ.λ.π.) Areas occupied by the locality (buildings, roads, etc)	Άλλες εκτάσεις Other areas	
<b>ΣΥΝΟΛΟ ΕΛΛΑΔΑΣ</b>	<b>1035</b>	<b>131,982.2</b>	<b>50,684.6</b>	<b>14,451.6</b>	<b>57,968.9</b>	<b>1,790.1</b>	<b>2,307.5</b>	<b>4,779.6</b>	<b>GREECE TOTAL</b>
<b>ΠΕΡΙΦΕΡΕΙΑ ΑΝΑΤ. ΜΑΚΕΔΟΝΙΑΣ ΚΑΙ ΘΡΑΚΗΣ</b>	<b>55.0</b>	<b>14,179.9</b>	<b>5,332.3</b>	<b>938.3</b>	<b>6,960.4</b>	<b>350.4</b>	<b>180.1</b>	<b>418.5</b>	<b>Region of Eastern Macedonia &amp; Thrace</b>
<b>ΝΟΜΟΣ ΡΟΔΟΠΗΣ</b>	<b>12.0</b>	<b>2,550.2</b>	<b>1,077.3</b>	<b>135.0</b>	<b>1,114.4</b>	<b>82.4</b>	<b>35.3</b>	<b>105.8</b>	<b>Rodopi Regional Dpt.</b>
Δ. ΑΙΓΕΙΡΟΥ		191.9	127.0	2.8	24.3	32.3	3.4	2.1	AEGIROS MUN.
Δ. ΑΡΡΙΑΝΩΝ		239.7	70.6	12.8	139.9	0.0	1.4	15.0	ARRIANA MUN.
Δ. ΙΑΣΜΟΥ		219.3	80.4	14.3	80.5	35.4	2.0	6.7	IASMOS MUN.
Δ. ΚΟΜΟΤΗΝΗΣ		352.7	157.1	9.8	169.2	0.0	11.4	5.2	KOMOTINI MUN.
Δ. ΜΑΡΩΝΕΙΑΣ		290.2	187.4	21.9	64.1	8.5	6.8	1.5	MARONIA MUN.
Δ. ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ		86.9	77.2	0.5	0.0	4.2	2.3	2.7	N. SIDIROCHORI MUN.
Δ. ΣΑΠΩΝ		300.3	190.9	11.5	93.8	0.0	3.5	0.6	SAPES. MUN.
Δ. ΣΩΣΤΟΥ		223.3	48.1	12.5	141.5	0.1	2.5	18.6	SOSTO MUN.
Δ. ΦΙΛΛΥΡΑΣ		246.7	74.0	12.5	148.6	0.3	1.3	10.0	FILLYRA MUN.
Κ. ΑΜΑΞΑΔΩΝ		34.7	10.5	1.6	20.4	1.6	0.6	0.0	AMAXADES MUN.
Κ. ΚΕΧΡΟΥ		147.7	20.6	19.1	94.5	0.0	0.0	13.5	KECHRO MUN.
Κ. ΟΡΓΑΝΗΣ		216.8	33.5	15.7	137.6	0.0	0.1	29.9	ORGANI MUN

Source : Greek Statistical Authority



**Table 5.20** Distribution of the Country's area into basic land cover / land use categories for the area of Rodopi

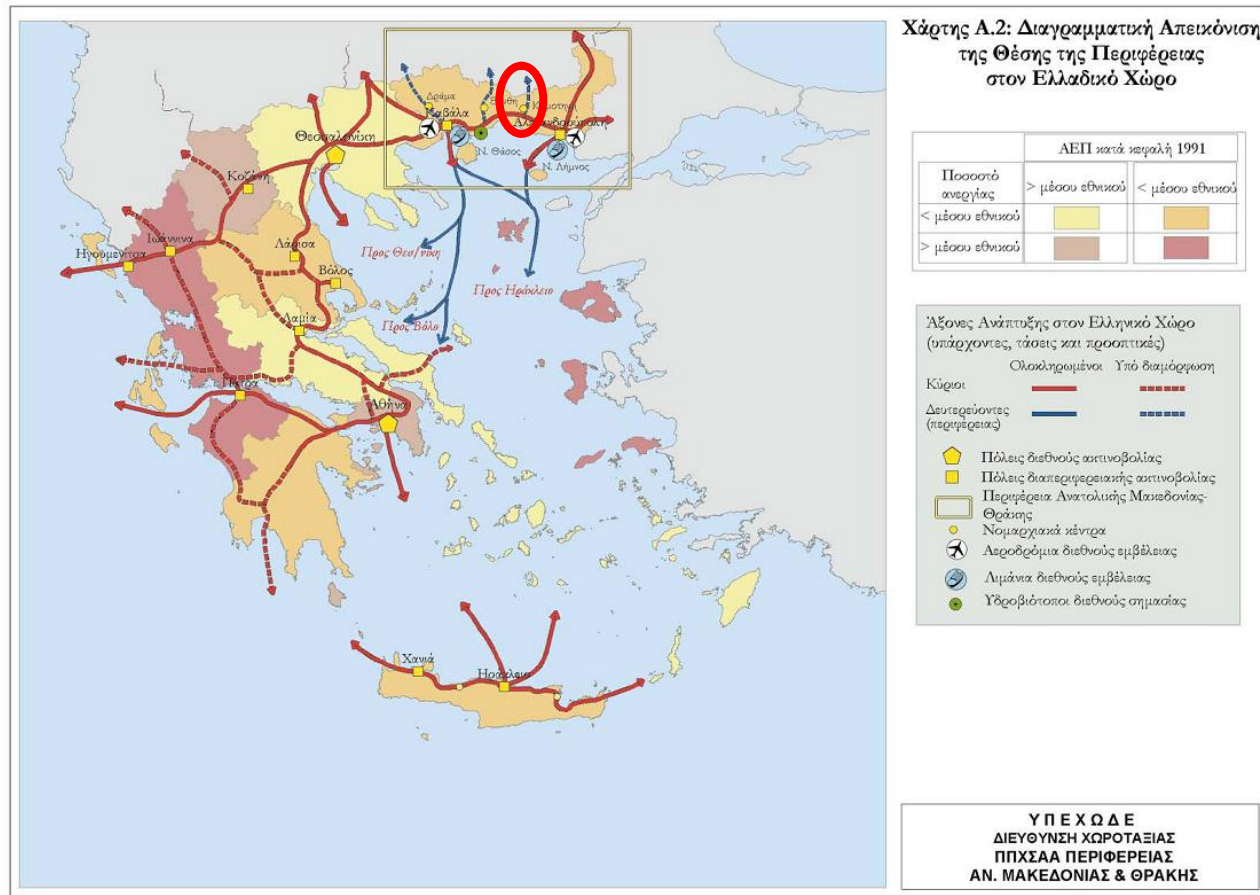
Εκτάσεις σε χιλιάδες στρέμματα

Areas in hundred hectares

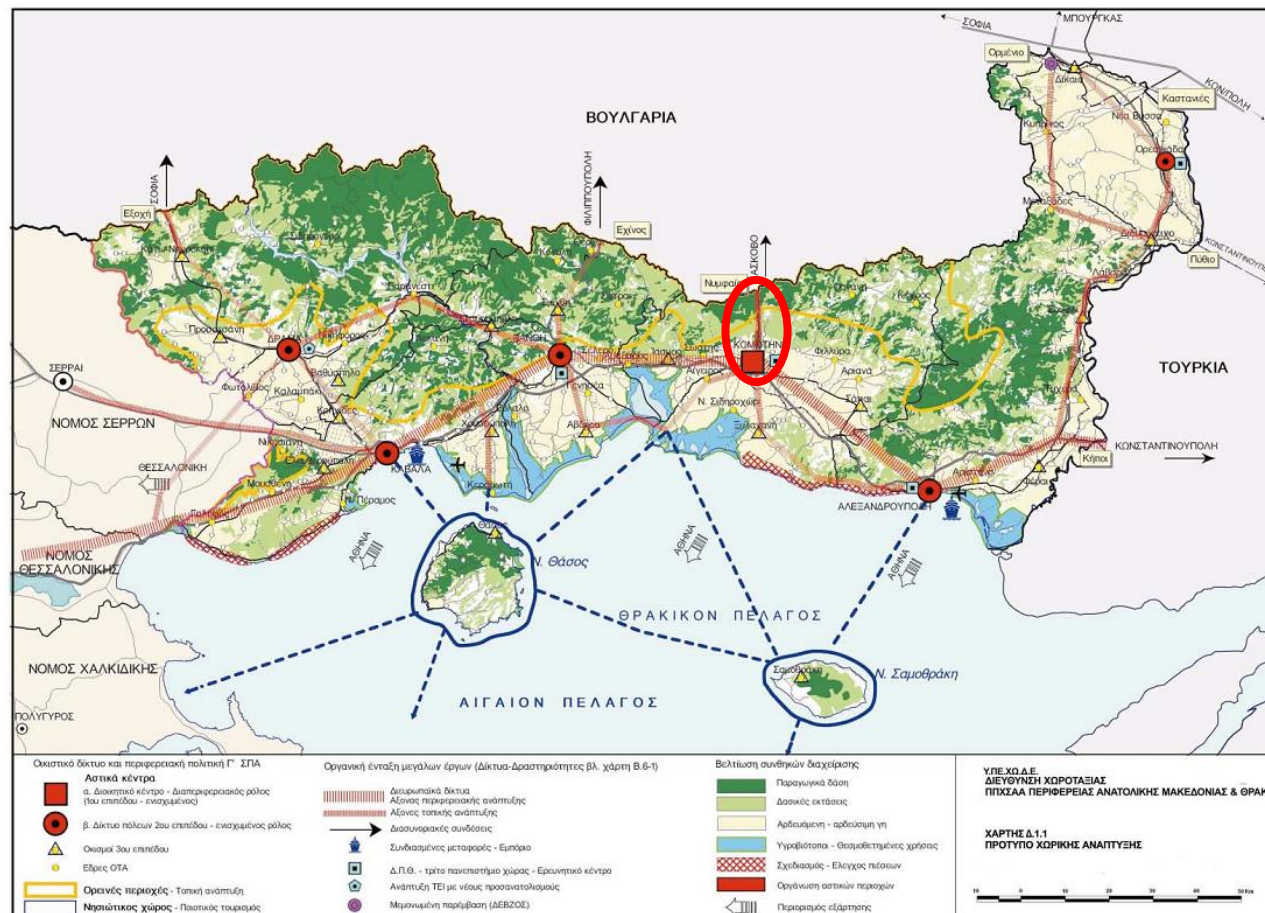
Γεωγραφικά Διαμερίσματα και νομοί Geographic Regions and departments	Αριθμός δήμων / κοινοτήτων Number of Municipalities / Communes	Σύνολο εκτάσεων All areas	ΓΕΩΡΓΙΚΕΣ ΠΕΡΙΟΧΕΣ AGRICULTURAL AREAS						ΔΑΣΗ ΗΜΙ-ΦΥΣΙΚΕΣ ΕΚΤΑΣΕΙΣ FORESTS AND SEMI - NATURAL AREAS				ΕΚΤΑΣΕΙΣ ΠΟΥ ΚΑΛΥΠΤΟΝΤΑΙ ΑΠΟ ΝΕΡΑ SURFACES UNDER WATER			ΤΕΧΝΗΤΕΣ ΠΕΡΙΟΧΕΣ ARTIFICIAL SURFACES					
			Αρόσημη γη Arable land	Μόνιμες καλλιέργειες Permanent crops	Βοσκότοποι - Μεταβατικές δασώδεις / θαρνώνδεις εκτάσεις Pastures - transitional wood land / shrub land	Βοσκότοποι - Συνδυασμοί θαρνώνδους και / ή πουδών βλάστησης Pastures - shrub and / or herbaceous vegetation associations	Βοσκότοποι - Εκτάσεις με ορατή ή καθόλου βλάστηση Rastures - Open spaces with little or no vegetation	Ετερογενείς γεωργικές περιοχές Heterogeneous agricultural areas	Δάση Forests	Μεταβατικές δασώδεις-θαρινώδεις εκτάσεις Transitional wood land / shrub land	Συνδυασμοί θαρινώνδους και / ή πουδών βλάστησης Shrub and / or herbaceous vegetation associations	Εκτάσεις με ορατή ή καθόλου βλάστηση Open spaces with little or no vegetation	Χερσαία ύδατα Inland waters	Εσωτερικές υγρές ζώνες Inland wetlands	Παραθαλάσσιες υγρές ζώνες Coastal wetlands	Αστική οικοδόμηση Urban fabric	Βιομηχανικές και εμπορικές ζώνες Industrial and commercial units	Δίκτυα συγκοινωνιών Transport units	Ορυχεία, χώροι απόρριψης απορριμμάτων και εργοστάσια Mine , dump and construction sites	Τεχνητές, μη γεωργικές ζώνες προσίτων, χώροι εθελαικών και πολιτιστικών οραστηριοτήτων Artificial, non agricultural vegetated areas sport and cultural activity sites	
ΣΥΝΟΛΟ ΕΛΛΑΔΑΣ	1035	131,982.2	21,181.5	7,491.6	879.9	9,151.5	4,420.2	22,011.5	22,411.6	11,606.6	23,950.6	4,509.3	1,197.3	108.3	484.5	1,913.1	212.7	156.4	270.3	25.4	GREECE TOTAL
ΠΕΡΙΦΕΡΕΙΑ ΑΝΑΤ. ΜΑΚΕΔΟΝΙΑΣ ΚΑΙ ΘΡΑΚΗΣ	55.0	14,179.9	4,388.8	148.7	412.5	476.0	49.9	794.8	4,151.2	1,535.2	1,274.0	409.3	129.9	0.7	219.8	151.6	26.2	1.9	9.2	0.4	Region of Eastern Macedonia & Thrace
ΝΟΜΟΣ ΡΟΔΟΠΗΣ	12.0	2,550.2	947.1	18.7	84.5	46.9	3.6	111.5	500.9	330.8	282.7	105.5	33.4	0.0	49.0	27.4	7.5	0.0	0.3	0.4	Rodopi Regional Dpt.
Δ. ΑΙΓΕΙΡΟΥ		191.9	117.0	8.4	0.0	2.4	0.4	1.6	0.1	0.0	24.2	2.1	14.2	0.0	18.1	2.7	0.7	0.0	0.0	0.0	AEGIROS MUN.
Δ. ΑΡΡΙΑΝΩΝ		239.7	60.6	0.0	5.6	7.2	0.0	10.0	62.8	37.2	39.9	15.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	ARRIANA MUN.
Δ. ΙΑΣΜΟΥ		219.3	75.1	0.2	8.4	5.7	0.2	5.1	31.3	19.0	30.2	6.7	18.1	0.0	17.3	2.0	0.0	0.0	0.0	0.0	IASMOS MUN.
Δ. ΚΟΜΟΤΗΝΗΣ		352.7	150.3	0.9	5.6	3.1	1.1	5.9	118.6	33.9	16.7	5.2	0.0	0.0	0.0	8.1	2.9	0.0	0.0	0.4	KOMOTINI MUN.
Δ. ΜΑΡΟΝΕΙΑΣ		290.2	176.3	3.9	13.0	8.8	0.1	7.2	10.1	41.7	12.3	1.4	0.0	0.0	8.5	3.3	3.5	0.0	0.1	0.0	MARONIA MUN.
Δ. ΝΕΟΥ ΣΙΔΗΡΟΧΩΡΙΟΥ		86.9	77.2	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.7	0.5	0.0	3.7	2.3	0.0	0.0	0.0	0.0	N. SIDIROCHORI MUN.
Δ. ΣΑΠΩΝ		300.3	180.4	0.0	7.3	3.7	0.5	10.5	38.4	36.9	18.5	0.5	0.0	0.0	0.0	3.4	0.1	0.0	0.1	0.0	SAPES. MUN.
Δ. ΣΩΣΤΟΥ		223.3	40.9	4.6	7.8	4.2	0.5	2.6	66.8	39.1	35.6	18.5	0.1	0.0	0.0	2.2	0.3	0.0	0.1	0.0	SOSTO MUN.
Δ. ΦΙΛΛΥΡΑΣ		246.7	52.9	0.7	8.8	3.7	0.0	20.4	48.2	33.7	66.7	10.0	0.3	0.0	0.0	1.3	0.0	0.0	0.0	0.0	FILLYRA MUN.
Κ. ΑΜΑΞΑΔΩΝ		34.7	9.5	0.0	0.6	1.0	0.0	1.0	5.5	4.0	10.9	0.0	0.2	0.0	1.4	0.6	0.0	0.0	0.0	0.0	AMAXADES MUN.
Κ. ΚΕΧΡΟΥ		147.7	0.0	0.0	16.6	2.5	0.0	20.6	44.2	40.6	9.7	13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	KECHRO MUN.
Κ. ΟΡΓΑΝΗΣ		216.8	6.9	0.0	10.8	4.6	0.3	26.6	74.9	44.7	18.0	29.9	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	ORGANI MUN

Source : Greek Statistical Authority

**Figure 5.17** Excerpt from “Approval of the Regional Plan for Spatial Design and Sustainable Development for the Region of Eastern Macedonia and Thrace



**Figure 5.18** Excerpt from “Approval of the Regional Plan for Spatial Design and Sustainable Development for the Region of Eastern Macedonia and Thrace”



### 5.2.5 Land use along the pipeline route

The land use along the recommended pipeline route is presented in the following table

**Table 5.20** land use data along the pipeline route

ΧΡΗΣΗ / LAND USE	Μήκος (Km) Length (Km)	Ποσοστό (%) Percentage (%)
Μη αρδευόμενη αρόσιμη γη / Non irrigated arable land	11.74	37.29
Γη που καλύπτεται κυρίως από τη γεωργία με σημαντικές εκτάσεις φυσικής βλάστησης / Land principally occupied by agriculture with significant areas of natural vegetation	5.72	18.17
Δάσος πλατύφυλλων / Broad leaved forest	6.37	20.24
Σκληροφυλλική βλάστηση / Sclerophyllous Vegetation	6.76	21.48
Μεταβατικές δασώδεις - θαμνώδεις εκτάσεις / Transitional woodland - shrub	0.89	2.82
Άλλες Χρήσεις / Other Uses	0	0
<b>ΣΥΝΟΛΟ / TOTAL</b>	<b>31.48</b>	<b>100</b>

It can be observed that the proposed routing of the N.G pipeline lies about its half length in agricultural extents and in the other half in extents of natural vegetation and forests. The routing does not go through continuous and/or interrupted urban fabric.

### 5.2.6 Infrastructure & Networks

#### 5.2.6.1 Highways & Roads

Special emphasis has been given during the pipeline routing phase to minimize crossings with major Highways & roads. However, due to the extended span of the project the proposed pipeline route crosses some major Road Networks and a number of smaller regional and local roads.

The major existing roads crossed are :

- National Road “Komotini-Nymphaea-Greek-Bulgarian Borders Egnatia Highway Vertical Axis 75 (2 crossings, one over tunnel) – Parts Operating and parts Under study/construction.
- Old National Highway “Komotini – Alexandroupolis” – Operating.

All these are major roads with heavy traffic which in any case should not be disturbed, while all the necessary safety precautions during construction of the crossing interventions should be observed.

A full crossing list is presented in Appendix B.

#### 5.2.6.2 Railroads

The Rodopi area is serviced by the National Railroad network (OSE) with stations in Komotini and smaller towns.

The proposed pipeline route does NOT intersect the existing railroad network.

#### 5.2.6.3 Existing National Natural Gas Distribution Network

The proposed pipeline route connects with the existing DESFA National Natural Gas Distribution Network near the industrial area of Komotini and intersects it once (X.Θ. 2+561). The proposed pipeline route also intersects once the initial route of the future ITGI Pipeline (X.Θ. 2+549).

#### 5.2.6.4 Power Grid

The start of the IGB pipeline is near the Komotini Public Power Corporation Power plant, which is connected with the National Power Grid.

The pipeline route crosses several electric power distribution lines High Voltage 150KV. A full crossing list is presented in Appendix A.

There are no Hydro-Electric and/or Photovoltaic parks locations along the pipeline route. The wind generator parks and the electric power distribution lines are clearly demonstrated in the PIPELINE ROUTING MAPS / RECORDING PLANS, 10760/PL/P1/02/402 & 10760/PL/P1/02/421 to 10760/PL/P1/02/432 presented in APPENDIX H.

#### 5.2.6.5 Irrigation Channel Networks

According to the Local Authorities there are no major existing or/and programmed irrigation networks near the route of the pipeline. Irrigation at the plains from Komotini industrial area to Pandrosos village is achieved with wells and surface waters.

#### 5.2.7 Tourism Activity

According to statistical data from the Hellenic Tourism Organization, on a prefecture basis, the Tourism activity data (which show a considerable positive trend) for Rodopi Pref. Dpt. Are presented below :

**Table 5.21** Tourism Activity Data for Rodopi Regional Dpt.

ΤΟΥΡΙΣΜΟΣ	1995	2004	TOURISM
Κλίνες σε ξενοδοχειακά καταλύματα	909	1220	Hotel Beds
Διανυκτερεύσεις ημεδαπών	124188	153249	Natives overnight stay
Διανυκτερεύσεις αλλοδαπών	14709	12418	Tourists overnight stay
Διανυκτερεύσεις αλλοδαπών ανά κάτοικο	0,136055	0,111864	Tourists overnight stay per resident
Ξενοδοχεία	-	19	Hotels
Διανυκτερεύσεις αλλοδαπών σε ξενοδοχεία	-	11849	Tourists overnight stay in hotels
Διανυκτερεύσεις αλλοδαπών σε κάμπινγκ	-	569	Tourists overnight stay in campings
Διανυκτερεύσεις ημεδαπών σε ξενοδοχεία	-	128398	Natives overnight stay in hotels
Διανυκτερεύσεις ημεδαπών σε κάμπινγκ	-	24851	Natives overnight stay in campings
Ξενοδοχεία 5 αστέρων	-	-	5 star hotels
Ξενοδοχεία 4 αστέρων	-	3	4 star hotels
Κλίνες σε ξενοδοχεία 5 αστέρων	-	-	Beds in 5 star hotels
Κλίνες σε ξενοδοχεία 4 αστέρων	-	240	Beds in 4 star hotels



### 5.2.8 Archaeology

This section addresses the methodology regarding the identification and assessment of the impact of the pipeline construction on sites of specific cultural interest.

It aims at the identification of potential problems by providing evidence on archaeologically sensitive and designated areas, protected by Greek legislation, within the proposed route. It also aims to explore to what extent such areas are affected by the construction and operation phase of the project and whether the interference with such areas is prohibitive for the realization of the project as proposed.

#### 5.2.8.1 Cultural Heritage Management Issues

Cultural heritage in the form of past material residues, values and ideas has been regarded as a "symbolic capital" as it constitutes a medium of memory and identity. Heritage management policy in Greece is conditioned by the Law 3028/02 which provides for the protection of all past material residues (monuments) dating from the Prehistory until 1830. Monuments of special interest in the last decades are protected by specific Ministerial Decisions.

Any activities or works concerning a monument or its surroundings is under the control of the Archaeological Service and special permission is required. In some cases protection zones are already appointed around a designated monument. In protection zone A, only works related to the conservation of the monument are permitted while in protection zone B, restricted activity is permitted.

According to the Greek legislation in the case of the discovery of antiquities during construction works, the Archaeological Service assesses their significance and undertakes a rescue excavation accordingly. In that case the archaeological investigation (excavation, conservation, study and publication of the findings) is financed by the developer.

#### 5.2.8.2 Methodology

A desk survey was carried out for the collection, registration and assessment of the archaeological evidence (see APPENDIX C).

Contacts with the relevant Ephorates of Antiquities provided a first evaluation of the interference of the pipeline construction with archaeological sites within the area of their responsibility and added new, unpublished data on archaeologically sensitive areas. The evidence provided regards :

- the Byzantine antiquities of Papikio Mountain archaeological area north of Komotini (including the remains of a byzantine castle) and ,
- Classical antiquities (remains of prehistoric fences and the sanctuary of hero horseman (“Ἱερο ἥρωα Ἰππῆα” in greek) in the



mountaintops near Pandrosos & Nymphaea villages (Only No 4 is officially declared – ΦΕΚ 731Β'/30-8-1979):

1. Position “Βερά Μπαλάρ” 6 Km. SW of position “Τουστου Ντερέ” (see No. 6),
2. Position “Σέλιστε”, 7 Km. NE of Nimfea village and 5 Km. SW of position “Καλέ Τεπέ”. A prehistoric fence of length 260 m., width 1,40m and height 1,40 m inside of which there are remains of square and cyclic buildings.
3. Position “Αλή Τεπέ” 2 Km. SW of Nimfea village from which prehistoric vessel fragments “όστρακα / σφονδύλια” have been recovered. Cyclic building remains can be observed. In the same position but on a higher mountaintop another elliptical prehistoric fence of width and height 1m was discovered.
4. Hill “Καλέ Τεπέ”, between the villages Nimfea and Ano & Kato Mytikas. In this an elliptical prehistoric fence of length of 260m, width 1,40m and height 1,75m was discovered.
5. Sanctuary of hero horseman (“Ιερο ήρωα Ιππέα” in greek) in Pandrosos, Hill ‘Φαλακρό’ (“Μποζ Τεπέ”) (Χ=-2.850, Ψ=-6.900 Φ.Χ. ΓΥΣ. ΚΟΜΟΤΙΝΙ 1:50.000). It is located 1,2 Km NW of Pandrosos village and 700m east of Medeaval Nimfea Castle. The pottery remains collected consist of findings of the Early Age of Iron and the Roman times.
6. Sanctuary of hero horseman (“Ιερο ήρωα Ιππέα” in greek) in Nimfea, position “Τουστου Ντερέ”, 4Km. SE of Nimfea village near a stream, where during 1971 prehistoric building remains were found in the fields near the stream.

In most cases the Ephorates required maps of grater scale in order to come up with a definite answer and occasionally a site survey had to be carried out to assess controversial sites. They all pointed out that works close to archaeological sites will be under the surveillance of the Archaeological Service.

In any case, according to the Report of Detailed Archaeological Assessment of the Ministry of Culture and Tourism (ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/108145/4643 / 21-11-2011 – see APPENDIX A) with was conducted during the Preliminary Assessment of Environmental Requirements Procedure **there are no objections** from the local Archaeological Authorities for the proposed pipeline route, provided that all the required measures are taken to preserve the antiquities in the general project area.

#### 5.2.8.3 The Archaeological Evidence

Evidence on sites of specific cultural interest in the region along with their relation with the route of the Gas Pipeline is indicated in the table in Appendix C. An overall evaluation of the interference of pipeline construction with archaeology is provided in Chapter 7 and reference to the proposed protection measures in Chapter 8..

The Archaeological sites in the general area of the pipeline route, as indicated by the Local Ephorates, are clearly demonstrated in the

PIPELINE ROUTING MAPS / RECORDING PLANS, 10760/PL/P1/02/402 & 10760/PL/P1/02/421 to 10760/PL/P1/02/432 presented in APPENDIX H.

### **5.3                      Stresses to the Environment - Interaction between Natural & Man-made Environment.**

The Environmental Stresses along the proposed pipeline route varies both in type and intensity. In the starting area (near Komotini) the stress to the environment from human activities (Industrial Area, Egnatia Highway) is evident. The rest of the pipeline route passes through either cultivated land or forested areas. In these areas the stress caused by the construction of the Vertical Axis to Egnatia Motorway : Komotini-Nimfea-Greek-Bulgarian Borders (Axis 75) is evident.

### **5.4                      State of the Environment Documentation – Maps.**

#### **5.4.1                      Land Use & Routing Maps**

The state of the Environment, as described in the paragraphs above, is documented in the following Maps that are provided in APPENDIX G.

ROUTING MAPS – RECORDING PLANS SCALE 1:50.000  
10760/PL/P1/02/402 &  
10760/PL/P1/02/402A (with the alternative routes considered)

PIPELINE ROUTING MAPS – RECORDING PLANS SCALE 1:5.000  
10760/PL/P1/02/421 to 10760/PL/P1/02/432

GEOLOGICAL MAPS (SCALE 1:50.000)  
10760/PL/P1/01/501

MAPS OF ACTIVE SEISMIC FAULTS (SCALE 1:5.000)  
10760/PL/P1/01/521

LAND USE MAP ACCORDING TO CORINE 2000 (SCALE 1:50.000)  
10760/PL/P1/01/401

## **6. Description of the Proposed Project**

### **6.1 General Description**

#### **6.1.1 Project components**

The Gas Interconnector Greece-Bulgaria ("Gas Interconnector Greece-Bulgaria" or "IGB Project") will transport natural gas across the border between Greece and Bulgaria and will lie partly in Greece and partly in Bulgaria.

The following is a summary of the main components of the project:

- High pressure gas transmission pipeline of nominal OD 32" (812,8 mm) between Komotini and Stara Zagora in Bulgaria; Greek part about 31.5 Km and Bulgarian Part about 150.5 Km.
- Ten (10) Block Valve Stations (BVs) along the route of the pipeline, in compliance with applicable norms, one (1) in Greece and nine (9) in Bulgaria.
- Gas Metering Station (GMS) Komotini and Pigging Launcher Station (PS) in Komotini
- Metering and Pressure Reducing Station in Kardjali, Bulgaria ;
- Gas pipeline connection along with metering and Pressure Regulating Station in Dimitrovgrad Bulgaria;
- Gas Metering Station (GMS) and Pigging Receiver Station (PS) in Stara Zagora Bulgaria;
- Integrated Control and telecommunication systems.
- Dispatch Center and operation and maintenance base (O&M Base) in Haskovo, Bulgaria.
- Provision for future compressor facilities in Bulgaria.
- Various ancillary facilities to support the abovementioned infrastructure.

Figure 6.1 Schematic Drawing of the IGB Project

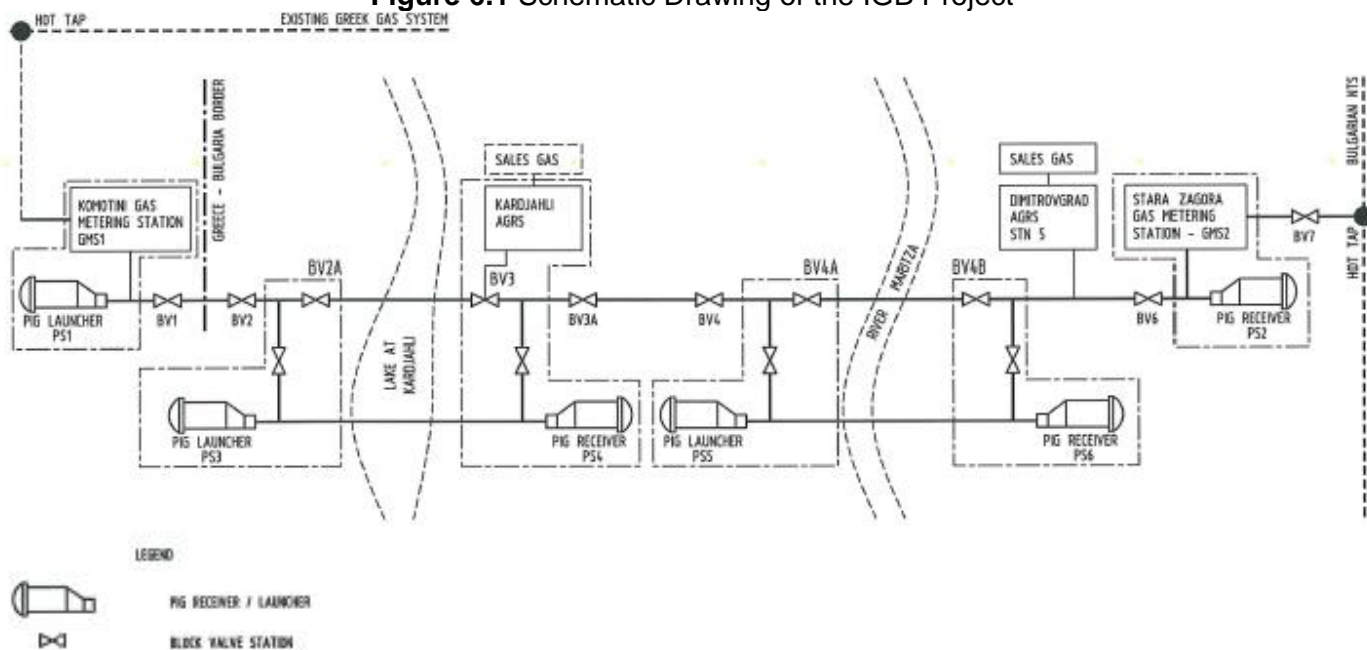
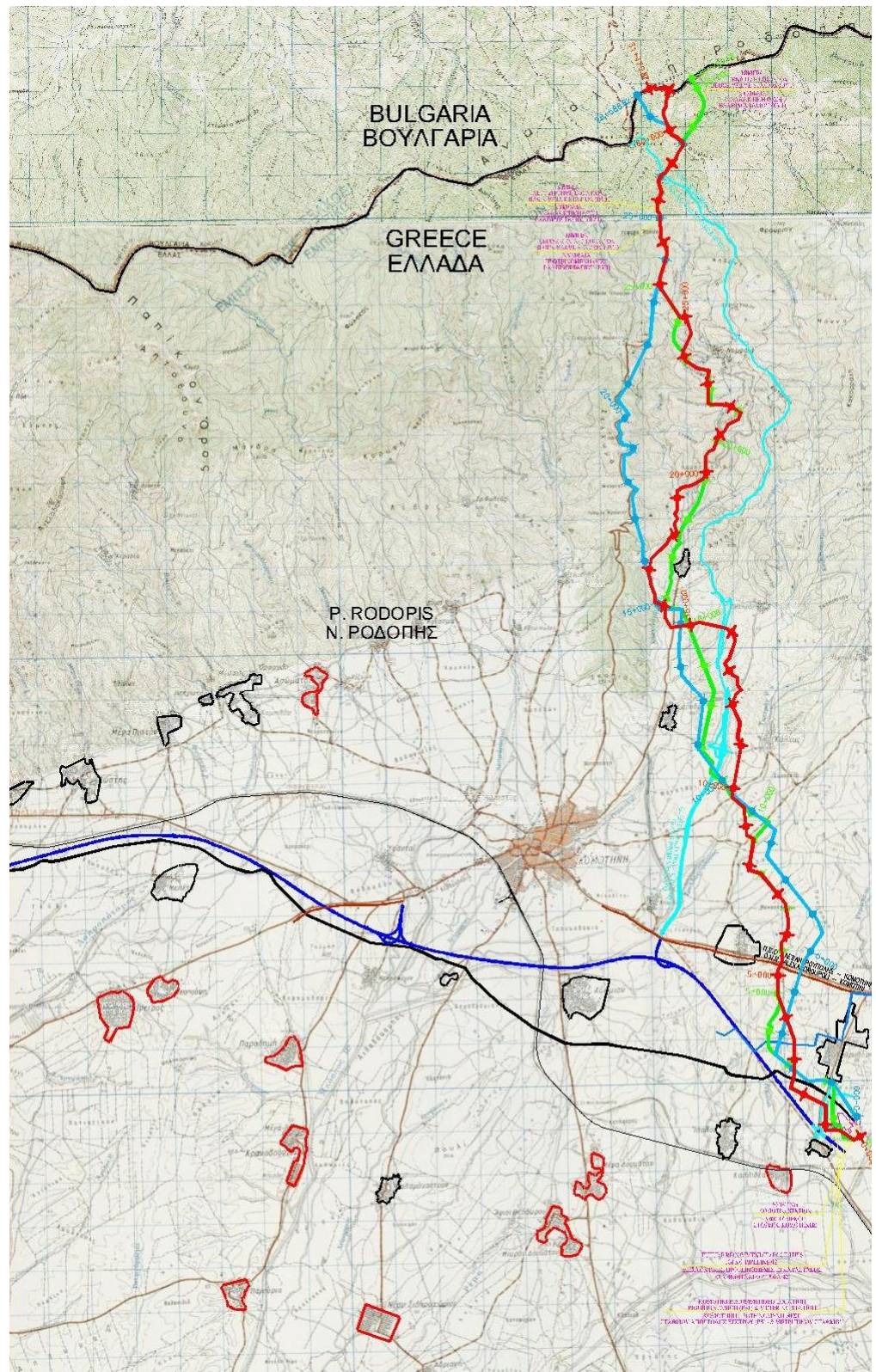


Fig 6.2 General Project Map.





Fig 6.3 Project Map – Greek Part. Proposed & Alternative routes. – REC - ALT1 - ALT2



### 6.1.2 Project Design Philosophy

The IGB buried pipeline will transport natural gas over the border between Greece and Bulgaria, connecting the existing Komotini Compressor Station in Greece with an existing gas pipeline near the Bulgarian town of Stara Zagora. The proposed pipeline will measure a total distance of approximately **182 Km**, (about **31.5 Km in Greece** and **150.5 Km in Bulgaria**).

The design of this bi-directional pipeline system shall be in accordance with the internationally recognized codes of practice: EN1594 and ASME B31.8, with the recent Hellenic No. Δ3/A/OIK. 4303 ΠΕ 26510 (ΦΕΚ 603Β' 5-3-2012) Technical Regulation “Natural Gas Transmission Systems with Maximum Operating Pressure over 19 bar” and also in conjunction with Bulgarian Ordinances, for the safe transportation of **3bcm/yr** of gas initially, with the provision for the future expansion up to a maximum technical capacity of **5bcm/yr**. The project also includes the construction of the following Above Ground Installations (AGIs):

- 2 off Gas Metering Stations (GMS) and 2 off Pigging Stations (PS), one at Komotini and the other one near Stara Zagora;
- Four (4) intermediate Pigging Stations (PS), on either side of lake Kardjali and river Maritza in Bulgaria.
- Ten (10) off Block Valve Stations (BVs), one (1) in Greece and nine (9) within Bulgaria;
- 2 off Offtakes and Automated Gas Regulation Stations (AGRSs) at locations close to the Bulgarian towns of Kardjali and Dimitrovgrad.
- 1 off Dispatch / Operational and Maintenance Base in Haskovo, Bulgaria.

### 6.1.3 Applicable Codes and Standards

The pipelines, Block Valves and scraper stations and associated piping will be designed in accordance with the latest applicable codes and standards listed in Appendix C.

The principal design standard to be applied to the pipeline, in accordance with EC Regulations, will be EN 1594:2009. This standard recognizes that it is not a design handbook or code of practice and that where insufficient guidance is given it will be supplemented by national or company standards. Such cases refer to the design factors regarding the routing of pipelines in areas of increased population or at crossings, the decompression cooling etc., and in these cases it is proposed to adopt guidance provided in ASME B31.8. and the appropriate Bulgarian Articles and Ordinances. The ASME standard is widely used and proven and has been adopted by DESFA previously. It will be ensured that guidance utilized from ASME B31.8 will not conflict with the European Standard. The specifications followed by DESFA will also be used. In any case, the recent Hellenic No. Δ3/A/OIK. 4303 ΠΕ 26510 (ΦΕΚ 603Β' 5-3-2012) Technical Regulation “Natural Gas Transmission Systems with Maximum Operating Pressure over 19 bar” shall be followed also.



The pipeline will be designed for bidirectional operation.

## **6.2 Technical Description of Pipeline & Installations**

### **6.2.1 Routing Selection Criteria**

Route selection criteria are a process of identifying constraints, existing infrastructures, adverse conditions, etc. that could affect the pipeline route, either during construction or in later operation, avoiding undesirable areas in order to establish the economic feasibility and also constructability of the pipeline.

The following factors are taken into consideration in order the optimal pipe routing to be selected.

- a. Restrictions by National and local authorities have to be considered;
- b. Any applicable legislation and/or interstate agreement between Greece and Bulgaria in respect of the Greek – Bulgarian border crossing;
- c. Special conditions imposed by appropriate authorities or rights owners for crossings of the pipeline route with existing or planned future overhead, surface and buried services / utilities, pipelines, etc;
- d. The shortest distance has to be considered, bearing in mind the Owner's defined start and finish points, any intermediate fixed points, any imposed route constraints and the implication for project costs;
- e. Existing and future land use, which could affect the selection of pipeline route and associated facilities, have to be considered
- f. Passing of the pipeline route through
  - restricted areas should be avoided;
  - public areas or land low cost areas should be preferred;
- g. The proximity distances between the pipeline and cities / urban areas (and their forecasted extension) has to be as much as possible;
- h. The pipeline route has to be as much as possible perpendicular to contour lines to facilitate construction activities and pipeline supporting;
- i. Access during construction should be considered;
- j. Steep slopes should be avoided, where possible;
- k. The longitudinal slope has to be maximum 45 degrees (or 100% slope);
- l. Big lateral slopes (side or cross slopes) should be avoided, as much as possible;
- m. Running closely parallel to watercourses, roads, motorways, railways, seismic faults, foreign major pipelines and overhead electricity transmission lines should be avoided. A minimum distance beyond the right-of-way boundaries (existing or planned) has to be considered;
- n. Crossings of the pipeline route with:

- major roads, motorways, railways, seismic faults, overhead electricity transmission lines, other major pipelines, rivers, creeks, canals and other utilities, should be considered perpendicular to the centerline (axis) of the crossed object when practical, but with crossing angle not less than 70° or as governed by authorities having jurisdiction;
- major roads, motorways and railways should be considered in embankment areas;
- rivers should be considered so that the crossing to be located in a straight section of the river to minimize active bank erosion and at the most suitable riverbed (avoiding as much as possible bedrock and very silty beds), as well as to avoid side slopes on the approaches to the river and to avoid fast flowing sections of the river wherever possible;
- watercourses should be considered so that, wherever reasonably practical the route to avoid crossing, exposed aquifers and/or passing immediately upstream of intakes for waterworks or impounding reservoirs;
- existing or planned overhead power lines has to be considered and checked for possible AC interference and for timely design of personnel safety;
- existing or planned DC traction systems and cathodic protection systems has to be considered and checked for possible DC stray current interference;
- o. The minimum distance of the pipeline route from existing buildings should be considered;
- p. Passing of the pipeline route through the following areas should be avoided wherever possible or minimized:
  - Areas with geological / geotechnical implications, e.g. unstable slopes, erosive soils, rocky terrain, potential landslide or subsidence areas, faults, faults displacement hazards, fissuring, etc.;
  - Areas with foundations that may impact trenching of the pipeline;
  - Earthquake sensitive zones;
  - Proximity of past, present and future extraction works;
  - Muddy bottom areas;
  - Areas with soft or waterlogged ground;
  - Areas of potential flooding and areas with high water table;
  - Areas with potentially corrosive ground conditions;
  - Existing of planned built-up areas;
  - Areas of historical and archaeological interest;
  - Statutorily protected areas;
  - Recreational areas, airfields, etc.;
  - Environmentally protected areas;
  - Military areas;
  - Areas that are zoned for future development (domestic, industrial, commercial or mineral) or other developmental control
  - Areas with planned future projects;

- Hazardous areas which may affect the pipeline integrity, such as areas with tank farms, explosive storage yards, mines, and other hazardous installations;
- Areas with underground man-made obstacles.

In order to determine the best pipeline route (corridor) the design team:

- a. prepared a preliminary pipeline corridor
- b. contacted the relevant authorities to collect all the above land use & restrictions data along the abovementioned route
- c. plotted the collected data on a 1:50.000 map
- d. utilized the findings of a preliminary geological study of the preliminary corridor
- e. changed the corridor routing in areas where problems occurred (thus formulating alternative routes REC, ALT1 & ALT2) and
- f. finalized a proposed routing REC.

### 6.2.2

#### Short Description of Proposed Routing (REC)

The routing of the pipeline has a total length 31479.87m. (K0-K109), beginning at point K0 (Metering station and Pigging Station), which is located at the south-western edge of Industrial Area of Komotini and ending at the connection point K109 of the Greek section pipeline with the rest (Bulgarian) section of the pipeline at the border of Greece – Bulgaria.

With direction from south to north, the routing is located consecutively as follows:

Segment K0-K20 (0–11km): The routing of the pipeline has north western direction at first and northern afterwards, it starts south-western from the Industrial Area of Komotini, passes from Metering Station (GMS1) and Pigging Station (PS1) “KOMOTINI” (K1+363.56) that are going to be installed in a common land plot northern from the settlement Fylakas, continues southern at first and western afterwards from the settlement Thrylorio, eastern from the settlement Roditis and the city of Komotini and ends between the settlements Karydia and Kalchas, passing through extended cultivated areas of cotton and wheat.

It crosses mostly with the asphalt road Fylakas – Thrylorio (K3+71.89m), the under study DESFA’s Greece – Italy (IGI) natural gas pipeline and the existing Komotini - Thessaloniki natural gas pipeline of DESFA (K4+209.36m. & K4+221.72m), the Old National Road Alexandroupoli – Komotini (K8+88.56m), the stream “Trelochimaros” (K18+225.50m) and at the end, the Regional road Karydia – Kalchas (K19+989.66m).

Segment K20-K36 (11-16km): With north western direction the routing of the pipeline passes south-western from the settlement Tychiro, passing through hilly area of gentle slopes with cultivations, trees and heath parts and crosses mostly the asphalt road to Tychiro (K25+21.68m), the under construction (construction works haven’t started yet) New National Road “Komotini – Nimfea – Greek - Bulgarian Borders – Axis 75” (K32A+100.36m) and the asphalt road to Pandrosos (K33+24.43m). In this segment the following rerouting that the local Forest Inspection

Authority demanded during the Preliminary Assessment of Environmental Requirements Procedure was realized :

- In the area between the points K32 - K33 (of the initial routing REC), where a pine forest exists (from reforestation in order to protect the settlements below it as well as the city of Komotini from severe floods) it was required to bypass the abovementioned forest by relocating the pipeline to the east (Part K29-K30-K31-K32-K32A-K32B-K32C-K33 of Final Routing REC).

Segment K36-K109 (16-31.5km): The routing of the pipeline has northern direction, passing western at first and northern afterwards from the settlement Pandrosos, western from the settlement Nimfea, from the Block Valve Station (BV1) “Nimfea” (K84+72.66m), which is located 4km about western from the settlement Mytikas, it continues western from the settlement Ano Mytikas and ends to the Greek – Bulgarian borders, passing through mountainous area with trees and heath parts. It crosses mostly with the ravine Karydorema (K36+30.27m. & K46+63.13m) and the New National Road “Komotini – Nimfea – Greek - Bulgarian Borders – Axis 75” (K92+55.36m) above a tunnel that has already constructed. In this segment the following rerouting that the local Forest Inspection Authority demanded during the Preliminary Assessment of Environmental Requirements Procedure was realized :

- In the area between the points K37 - K39 (of the initial routing REC), where the pipeline is near the “Nimfea” forest, it has been relocated for about 15m to the east for fire protection reasons. (Part K37-K38-K39 of Final Routing REC).

The local Forest Inspection Authority was informed on the abovementioned reroutings and stated their agreement with its initial demands (see document with No. 15052/27-8-2012 attached in Appendix A).

Concerning the administrative structure of the routing, the pipeline is located at the Region of East Macedonia – Thrace, at the Prefecture of Rodopi and at the Municipality of Komotini.

A photographic presentation of the Proposed Routing (REC) is provided in APPENDIX F.

## 6.3 Alternative Routings

### 6.3.1 General Considerations

Both ALT1 & ALT2 share the same philosophy with REC but differ in certain areas as described below.

### 6.3.2 Alternative route 1 (ALT1)

The Alternative routing 1 of the pipeline has a total length of 28588.82m., beginning at the existing Natural Gas Station of DESFA, which is in the south western edge of the Industrial Area of Komotini and ending at the connection point of the Greek section of the pipeline with the rest (Bulgarian) section of the pipeline at the border of Greece – Bulgaria.

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With north western direction, the Alternative routing 1 is located consecutively as follows:

Segment 0-11.1km: The routing of the pipeline has north western direction, begins from the existing Natural Gas Station of DESFA, which is in the south western edge of the Industrial Area of Komotini, continues south at first and west afterwards from the settlement Thrylorio, eastern from the settlement Roditis and the city of Komotini and ends south eastern from the settlement Karydia, passing through extended cultivated areas of cotton and wheat. The main crossings are with the asphalt road Fylakas – Thrylorio (1km), the Old National Road Alexandroupoli – Komotini (4.4km), a stream (9.4km), the under construction (construction works haven't started yet) New National Road “Komotini – Nimfea – Greek-Bulgarian Border – Axis 75” (10.2km) and at the end the asphalt road Ifaistos – Stylario (11km).

Segment 11.1-15km: With north western direction the routing of the pipeline passes eastern at first and northern afterwards from the settlement Karydia, south western at first and western afterwards from the settlement Tychiro and ends south eastern from the settlement Pandrosos, passing through hilly area of gentle slopes with cultivations, trees and heath parts. It crosses mostly the asphalt road Karydia – Pandrosos (14.4km) and at the end a stream (14.7km).

Segment 15–28.6km: The routing of the pipeline has northern direction, passing western from the settlement Pandrosos, continues eastern from the ancient Byzantine castle at the area of Pandrosos, western from the settlement Ano Mytikas and ends to the Greek – Bulgarian borders, about 400m western from the end of the Recommended routing. It is passing through mountainous area with trees and heath parts and crosses the asphalt road to the army camp of Nimfea at many points and the New National Road “Komotini – Nimfea – Greek-Bulgarian Border – Axis 75” (26.1km) above a tunnel that has already been constructed.

### 6.3.3

#### Alternative route 2 (ALT2)

The Alternative routing 2 of the pipeline has a total length of 30262.13m., beginning at the Metering Station and Pigging Station (PS1), that are going to be installed in a common land plot near the existing Natural Gas Station of DESFA, which is in the Industrial Area of Komotini and ending at the connection point of the Greek section of the pipeline with the rest (Bulgarian) section of the pipeline at the border of Greece – Bulgaria.

With direction from south to north, the Alternative routing 2 is located consecutively as follows:

Segment 0–12.2km: With north western direction, the routing of the pipeline starts south western of the Industrial Area of Komotini, it continues south at first and west afterwards from the settlement Thrylorio, eastern from the settlement Roditis and the city of Komotini and ends western from the settlement Karydia, passing through extended cultivated areas of cotton and wheat.

The main crossings are with the under study DESFA Greece – Italy (IGI) natural gas pipeline and the existing Komotini - Thessaloniki natural gas

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pipeline of DESFA (1.4km), the asphalt road Fylakas – Thrylorio (1.9km), the Old National Road Alexandroupoli – Komotini (5.6km), a stream (10.6km), the under construction (construction works haven't started yet) New National Road “Komotini – Nimfea – Greek-Bulgarian Border – Axis 75” (11.2km) and at the end the asphalt road Ifaistos – Stylario (12.2km).

Segment 12.2-18km: The routing of the pipeline has northern direction, passes north eastern from the settlement Karydia, western at first and northern afterwards from the settlement Pandrosos, passing through hilly area of gentle slopes with cultivations, trees and heath parts. It crosses mostly the asphalt road Karydia – Pandrosos (15.9km) and at the end a stream at many points.

Segment 18–30.3km: The routing of the pipeline has northern direction, passing western from the settlements Nimfea and Ano Mytikas and ends to the Greek – Bulgarian borders, 900m about eastern from the point that the Recommended routing ends. It is passing through mountainous area with trees and heath parts and crosses mostly the New National Road “Komotini – Nimfea – Greek-Bulgarian Border – Axis 75” (28.4km) above a tunnel that has already constructed.

#### 6.3.4

##### «DO NOTHING» or No Project Scenario

The «DO NOTHING» or No Project Scenario refers to the hypothetical case in which the project is not realized.

Having in mind that the participation of Greece in the IGB Project :

- Turns Greece into a major European player in Natural Gas Distribution
- Increases the energy resources independence of both Greece and Bulgaria.
- Further promotes the use of Natural gas in the affected regions with serious positive environmental benefits.

The main drawbacks of this scenario are socio-economical and affect the country as a whole. The above facts, along with the minimized and in any case reversible environmental impacts during the construction of the project lead to the rejection of the “DO NOTHING” scenario.

#### 6.3.5

##### Selection of Proposed Route

The criteria used for the assessment and prioritization of the alternative routing solutions are the ones described in paragraph 6.β. Article 2 of Law 3010 «Harmonization of Law 1650/1986 with Directives 97/11 E.U. and 96/61 E.U., etc.» Nat. Gazette 91A' 25-4-2002 as described below :

- A. General and Special Urban Policy Guidelines arising from Land Use Legislation and Urban Planning.
- B. Environmental Sensitivity of the Areas Affected by the Project.
- C. Characteristics of the possible significant environmental impacts (magnitude, affected area, duration, frequency, reversibility and Possible interboundary effects).



D. Benefits to the National Economy, National Defence, Public Health and welfare and other National Interests.

E. Positive Impacts to the Natural & Man-made Environment in a wider area than the one affected by the Project.

An additional group of criteria concerning the Engineering Design and Operational Targets of the Project is also used.

A tabulated comparison of the Alternative routing solutions according to the abovementioned criteria is presented in the table that follows.

**Table 6.1** Alternative Routing Assessment Criteria

CRITERIA	REC Proposed	ALT1	ALT2
<b>A. General and Special Urban Policy Guidelines arising from Land Use Legislation and Urban Planning.</b>			
A1. Compatibility with the National Energy / Climate Change Prevention Policy	√	√	√
A2. Compatibility with General and Special Urban Policy Guidelines.	√	√	√
A3. Crossing of cities or settlements	√	√	√
<b>B. Environmental Sensitivity of the Areas Affected by the Project.</b>			
B1. Wildlife Preservation. Preservation and improvement of habitats & landscape – Crossing of NATURA 2000 Areas – Areas of Special Beauty (ΤΙΦΚ) -Biotopes (CORINE κ.λ.π.) - Forest / Reforestation Areas.	×	xx	√
B2. Preservation of Historical & Cultural resources and further development. – Crossing of Archaeological Areas.	√	xxx	×
B3. Preservation of beaches, seas and Environmentally sensitive Areas.	√	√	√
B4. Preservation and protection of agricultural areas with protected crops.	√	√	√
<b>C. Characteristics of the possible significant environmental impacts (magnitude, affected area, duration, frequency, reversibility and Possible interboundary effects.</b>			
C1. Air Pollution	√	√	√
C2. Noise	√	√	√
C3. Pollution of surface water bodies & Groundwater	√	√	√
C4. Solid waste	√	√	√
C5. Soil Erosion / Excavation products disposal	√	xx	×
C6. Impacts to Flora & Fauna	√	√	√
C7. Optical Intrusion	√	√	√
C8. Impacts to Marine Life	√	√	√
<b>D. Benefits to the National Economy, National Defense, Public Health and welfare and other National Interests.</b>			
D1. Acceptable Construction Cost	√	√	√
D2. Impact to the Local Economics and Development	√	√	√
D3. Indirect Benefit to the public health by the use of Natural Gas instead of more polluting fuel	√	√	√
<b>E. Positive Impacts to the Natural &amp; Man-made Environment in a wider area than the one affected by the Project.</b>			
E1. Minimization of the use of Polluting Energy Resources	√	√	√
E2. Social Acceptance of the Project	√	√	√
E3. Land Value	√	√	√
<b>F. Engineering Design and Operational Targets of the Project.</b>			
F1. Distance from City & Settlements Limits	√	√	√
F2. Safety Criteria	√	×	xx
F3. Geometry, Land Contouring, avoidance of unstable slopes, erosive soils, rocky terrain, potential landslide areas	√	xx	xx
F4. Bank erosion protection	√	xx	xx
F5. Crossings with existing and future infrastructure	√	xx	xx
F6. Trans-Boundary impacts assessment	√	√	√

### 6.3.6

#### Selection of recommended route - Discussion

Considering the land use, all three routes have about the same percentage of passing through agricultural and forest areas and all of them do not cross settlements. All three of them are consistent with the General and Special Urban Policy guidelines and have acceptable construction cost.

#### Recommended routing (REC)

The recommended routing (REC) crosses the limit of the declared archaeological area of Papikion mountain (according to YA ΥΠΠΟ/ΑΡΧ/Β1/Φ37/15352/389ΠΕ/9-2-1987 - ΦΕΚ 284/Β/9-6-1987) and the relevant letter from the 15<sup>th</sup> Ephorate of Byzantine Antiquities which, however, has given a **positive opinion for this particular routing**.

The recommended route crosses the wild-life shelter “NIMFEA” and the Protective Forest of Komotini, in smaller lengths than ALT-1 and in areas either fallow or with thin vegetation.

It must be emphasized here that additional to the initial design the following reroutings that the local Forest Inspection Authority demanded during the Preliminary Assessment of Environmental Requirements Procedure were realized :

- In the area between the points K32 - K33 (of the initial routing REC), where a pine forest exists (from reforestation in order to protect the settlements below it as well as the city of Komotini from severe floods) it was required to bypass the abovementioned forest by relocating the pipeline to the east (Part K29-K30-K31-K32-K32A-K32B-K32C-K33 of Final Routing REC).
- In the area between the points K37 - K39 (of the initial routing REC), where the pipeline is near the “Nimfea” forest, it has been relocated for about 15m to the east for fire protection reasons. (Part K37-K38-K39 of Final Routing REC).

In this way the intervention to the abovementioned forest areas was minimized (with a small increase in length).

The recommended route (and also ALT-1) cross vertically the Kavala-Xanthi-Komotini fault zone which has a length of 90Km and a general direction from west to east, so that a crossing with the pipeline is inevitable.

As a general remark the proposed route (REC) does not present any serious construction problems, avoids forested areas and does not interfere with main roads.

Finally, it has the larger length of 31.480 Km compared with 28.588 Km of ALT-1 and 30.262 Km of ALT-2.

#### 1<sup>st</sup> Alternative routing ALT-1

ALT-1 crosses the limit of the declared archaeological area of Papikion mountain and **passes about 30m from the remains of the Byzantine Castle of Komotini**, which is located at position 16+800.

This routing (ALT-1) has the larger crossing length through the wild-life shelter “NIMFEA” and the Protective Forest of Komotini, and in areas with denser vegetation than the recommended route.

From position 17+0.00 up to 21+0.00 the routing ALT-1 runs over the existing asphalt road leading to Nimfea Customs Office. This results in construction difficulties and added cost, due to the small width of the road.

From position X.Θ. 21+00 up to 22+600 the routing ALT-1 crosses the **Military area “Nimfea Fort”** which is located at 22+000.

#### 2<sup>nd</sup> Alternative routing ALT-2

The alternative routing ALT-2 crosses a forested area (mainly consisting of pines) from position 13+0.00 to 15+0.00.

It runs at the border of the wild-life shelter “NIMFEA” and has the smaller crossing length through the Protective Forest of Komotini. This path, however, is parallel and at a small distance with the stream west of Pandrosos village which has a direction from the north to the south. It also passes at a **small distance** (less than 100m) from the village limits.

The alternative route ALT-2 crosses vertically the Kavala-Xanthi-Komotini fault zone two times (in contrast with the recommended route) at positions 17+.500 and 18+0.00. As a result, it is located in a **wider Deformation Zone**, so that the protection measures should be employed at a larger length.

Finally, from position 18+000 up to 19+500 ALT-2 **crosses several times** with the asphalt road from Pandrosos to Nimfea.

All three routing solutions lead to border crossing points, in which, there is a Natura 2000 protected area, from the Bulgarian side of the border

Taking all the above into account the REC routing solution is selected as optimum.

#### 6.3.7

#### Additional Installations

The pipeline will be accompanied by the associated Metering/Regulating Stations, Block Valve/Scraper Stations according to the FEED :

- Gas Metering Station (GMS) “Komotini” and Pigging Station - Launcher (PS) “Komotini” in a common plan in the Komotini area.
- A Block Valve Station “NIMFEA” near the Greek-Bulgarian border.

**TABLE 6.2.** Stations Positions

S/N / A/A	NAME / ΟΝΟΜΑΣΙΑ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	DRAWING NUMBER / ΑΡ. ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	PROGRESSIVE DISTANCE / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ (m)	REMARKS / ΠΑΡΑΤΗΡΗΣΕΙΣ	ACCESS ROAD LENGTH / ΜΗΚΟΣ ΟΔΟΥ ΠΡΟΣΒΑΣΗΣ (L)
1	ΚΟΜΟΤΙΝΙ / ΚΟΜΟΤΗΝΗ	PIGGING STATION (PS1) / ΣΤΑΘΜΟΣ ΑΠΟΣΤΟΛΗΣ ΞΕΣΤΡΟΥ (PS1) GAS METERING STATION (GMS1) / ΜΕΤΡΗΤΙΚΟΣ ΣΤΑΘΜΟΣ (GMS1)	10760/PL/P1/02/421	K1A+67.16	633.37	RECOMMENDED LOCATION / ΠΡΟΤΕΙΝΟΜΕΝΗ ΘΕΣΗ	L= 380 m
2	ΝΙΜΦΕΑ / ΝΥΜΦΑΙΑ	BLOCK VALVE STATION (BV1) / ΒΑΛΒΙΔΟΣΤΑΣΙΟ (BV1)	10760/PL/P1/02/430	K84+114.55	27608.57	RECOMMENDED LOCATION / ΠΡΟΤΕΙΝΟΜΕΝΗ ΘΕΣΗ	L= 1667 m
2A			10760/PL/P1/02/431	K86+23.44	27764.84	ALTERNATIVE LOCATION / ΕΝΑΛΛΑΚΤΙΚΗ ΘΕΣΗ	L= 1494 m
2B			10760/PL/P1/02/431	K97+20.37	29528.54	ALTERNATIVE LOCATION / ΕΝΑΛΛΑΚΤΙΚΗ ΘΕΣΗ	L= 3329 m

The proposed (and alternative) locations for the abovementioned stations are presented in the PIPELINE ROUTING MAP / RECORDING PLANS, presented in APPENDIX H.

#### 6.3.7.1

#### Site selection criteria

The site selection criteria for Block Valve and Scraper Stations used for the Greek National NGTS, as well as the following criteria and guidelines were followed for the potential site selection for Block Valve / Scraper Station and Metering Station in the framework of the FEED.

#### General

In selecting the potential locations for Block Valve / Scraper & Metering Stations, consideration has to be given in general to the following:

- Closeness with the existing DESFA station in Komotini (Project Start) for the installation of the Scraper & Metering Station in a common plot.
- Closeness of the Block Valve Station to the Greek-Bulgarian border.
- topography;
- ground conditions;
- easy accessibility through major roads to be possible;
- restrictions from authorities and legislation;
- availability of services;

- requirements for inlet and outlet connections to and from the pipeline;
- hazards from other activities and adjacent property;
- public safety and the environment;
- anticipated future developments of the areas close to the pipeline routing

#### Restrictions criteria

The following restrictions criteria for potential stations locations have to be taken into consideration:

- to lie on selected pipeline route;
- the use of land to be suitable for the required pipeline installations;
- the land area to be the minimum required by the law;
- the building terms not to prevent the installation of Metering and or Reducing stations in the same plot with Block Valve / Scraper stations;
- to provide enough space for the required pipeline installations;
- to be away from urban development and residential areas (outside town planning);
- avoid areas of historical and archaeological interest;
- avoid areas that are zoned for future development (domestic, industrial, commercial or mineral) or other developmental control;
- to be away from existing or planned pylons and high voltage overhead electricity transmission lines (proximity to exceed 25 m);
- to be outside the boundaries of public highways and railways;
- easy accessibility through major roads to be possible;
- no other restrictions from authorities exist.

#### Safety criteria

The following safety criteria for potential stations locations have to be taken into consideration:

- safe dispersal of vented gas, where large volumes of gas may have to be vented, to be assured;
- to be far away from airfields (proximity to exceed several hundred meters);
- to be far away from strategic / military targets;
- avoid existing and future military areas;
- no vicinity to hazardous areas which may affect the integrity of pipeline installations, such as areas with tank farms, explosive storage yards and other sources of inflammation (proximity to exceed 30 m from plot boundaries), quarry yards, mines, and other hazardous installations;
- to be in areas with reduced risk of fire and the pipeline installations can be protected from fires on adjacent properties which are not under the control of the pipeline operating company;
- avoid areas of potential flooding and areas with high water table;
- to be away from seismic faults.

#### Operation criteria

The following operation criteria for potential stations locations have to be taken into consideration:



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- availability of utilities (electricity, telecommunications and water supply) as far as possible;
- the plot to provide enough space for future expansion of the pipeline installations;
- easy accessibility for maintenance personnel through major roads and particularly in the vicinity of Egnatia motorway junctions (as close as possible);
- existence of access road to the land plot;
- connection of medium pressure transmission system to be feasible without obstacles

Environmental criteria

The following environmental criteria for potential stations locations have to be taken into consideration:

- to be environmentally acceptable and without any major anticipated impacts;
- preservation of the natural amenities of the area;
- preservation of local fauna & flora;

Technical criteria

The following technical criteria for potential stations locations have to be taken into consideration:

- ground morphology;
- choose flat areas requiring less earthwork and concrete retaining walls and avoid steep slopes;
- avoid areas with geological / geotechnical implications, e.g. landslides areas, unstable slopes, erosive soils, rocky terrain, muddy bottom, etc;
- avoid sites having the morphology of physical basin

Economic criteria

The following economic criteria for potential stations locations have to be taken into consideration:

- the use of land and it's value;
- access road length between the plot and the closer major road / highway junction;
- subsoil properties for required foundation systems;

Potential Risks

The following potential risks may arise and should be taken into consideration when selecting stations locations:

- proprietary status of the plot;
- plans for future installation of high voltage overhead electricity transmission lines in the vicinity of the plot;
- plans for future construction of roads / highways in the vicinity of the plot;
- statutory plans for future commercial or industrial area development
- possible changes in the current area status;
- complications from irrigation projects in the area;
- complications from possible future infrastructure projects from municipalities (water supply, sewage, roads, etc.) in the area;

- complications from land reclamation works or land redistribution in the area

#### 6.3.7.2 Stations Sites

##### Metering Station (GMS) and Pigging Station – Launcher (PS)

They will be constructed in a common plot in the Komotini area. The proposed and alternative sites of the GMS/PS stations are presented in map P513-100-92-001 in APPENDIX G.

##### Block Valve Station

The Block Valve Station will be constructed in a suitable location near the Greek-Bulgarian border. The proposed and alternative sites of the BV station are presented in map P513-100-92-001 in APPENDIX G.

### 6.4 Construction Phase

#### 6.4.1 Design criteria

##### 6.4.1.1 Gas pressure data

Will be finalized during the detailed design phase.

##### 6.4.1.2 Gas temperature data

Will be finalized during the detailed design phase.

##### 6.4.1.3 Venting Philosophy

It is intended that each isolatable pipeline section can be depressurized in emergency situations or for maintenance.

The pipeline gas will be vented through a permanent vent stack that will be installed at each Block valve and Scraper station.

The venting systems will be sized to permit the blow down of the pipeline section within the required time period (advised by Owner) while taking material low temperature constraints into account.

##### 6.4.1.4 Pipeline design pressure.

The pipeline design pressure will be 80 barg.

##### 6.4.1.5 Pipeline diameter and length

The pipelines will have a nominal Outside Diameter (OD) of 32 inches. The overall horizontal length of the pipeline in the Greek territory is provisionally 31.5 Km (Proposed routing).

##### 6.4.1.6 Design life

The pipelines will be designed for an operational life of 50 years.

##### 6.4.1.7 Class locations and design factors

The pipeline Design Factors (DF) will be in accordance with EN 1594, enhanced where appropriate by the guidance given by ASME B31.8 regarding population density and crossings. Design factors will in no case be higher than the maximum values defined in EN 1594 Clause 7.2.1.

The pipelines will be classified as: Location Class 1 & 2 as presented in the Class Location Table in APPENDIX B. These location classes and

associated design factors are defined as guided by ASME B31.8 Clause 840 and table 841.1.6-1.

6.4.1.8

Pipeline materials

Line Pipe will be in accordance with a project specific specification which is supplementary to EN 10208-2. The grade will be selected during the design phase.

Only steel pipes and piping components will be used.

Spiral (helical) welded pipes may be used for DN ≥ 600.

Screwed and threaded connections and fittings will be limited to above ground instruments installation.

Pipeline and fittings will be Charpy impact tested. The test temperature and acceptance for arrest of running ductile fracture will be defined during the course of the project. Pipes or piping components will be supplied with inspection certificates EN 10204 Type 3.1 or 3.2.

6.4.1.9

Corrosion protection - Coating

Pipeline will be provided with an external protective coating of three layer polyethylene (3LPE).

The pipe will be furnished with an internal epoxy coating in order to reduce the pressure loss during operation.

Field joints coating will comply with ISO 21809-3.

Induction bends, buried valves, fittings and other specials shall be protected against corrosion by polyurethane coating.

Cathodic protection will be installed on the complete buried pipeline system.

6.4.1.10

Pipeline bends

Factory made bends, elastic bends or cold field bends will be used at locations of horizontal and vertical changes in direction.

The minimum wall thickness of bends will be calculated in accordance with Clause 7.2.2 of EN 1594.

Induction bends manufactured in accordance with project specific specification supplementary to EN 14870-1. Bends will be heat treated after forming and will be Charpy impact tested. Spiral welded pipe will not be used for induction bend manufacture.

6.4.1.11

Electronic caliper checking

At the end of the pressure testing activities and before the commencement of the drying works, a single or multi channel electronic calliper (geometry) pig will be propelled through the pipeline in order to check the geometry of the pipeline and locate diameter reductions due to dents, buckles and flat spots.

6.4.1.12

Burial and protective cover

The depth of buried cover to the top of pipe will be a minimum of 1.0metre in all cases as per DESFA existing practice. Within more heavily populated areas and at most crossings, it will be at least 1.2metres but in special areas it will be defined at detail design stage.

6.4.2

Construction methods for pipelines

#### 6.4.2.1 Working Width

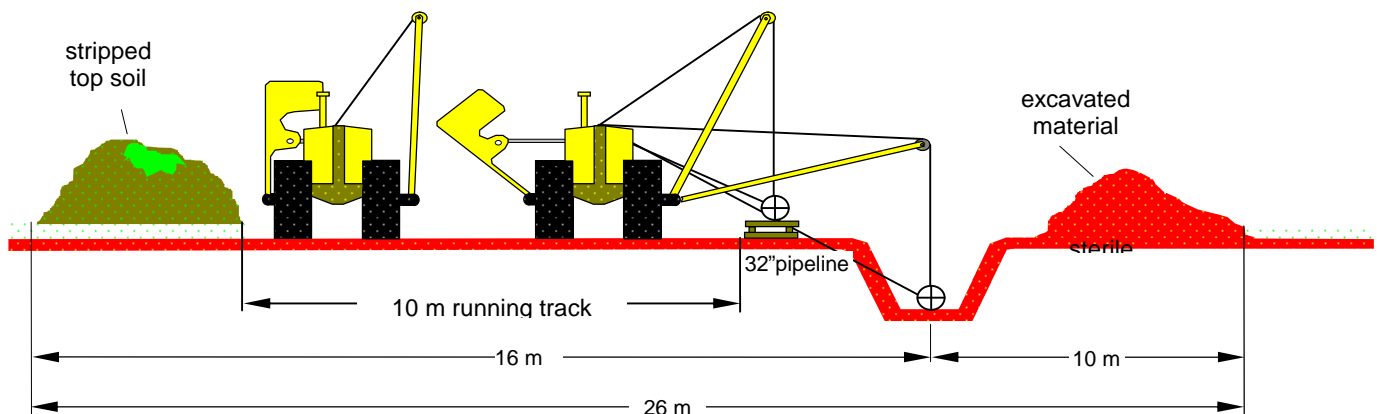
##### Working width in Open Country

The working width or spread is the pipeline construction corridor in which construction takes place. It must be wide enough to allow all activities to be carried out safely whilst providing sufficient room in which to store top-soil and trench material separately whilst keeping crop loss compensation to the farmer, to a minimum.

The width of the spread is proportional to the diameter of the pipeline to be installed. It follows that the greater the pipe diameter, the greater the extracted trench material that has to be stored. The width of the “spread” is also determined by the size of the heavy plant required to safely lift and lower pipe into a trench and dig the trench.

The working width or “spread” width in open country will be twenty six (26) meters for 32” pipeline (see schematic figure below for 32” pipeline).

**Figure 6.4** Typical ROW zone configuration for 28” pipeline (open country)



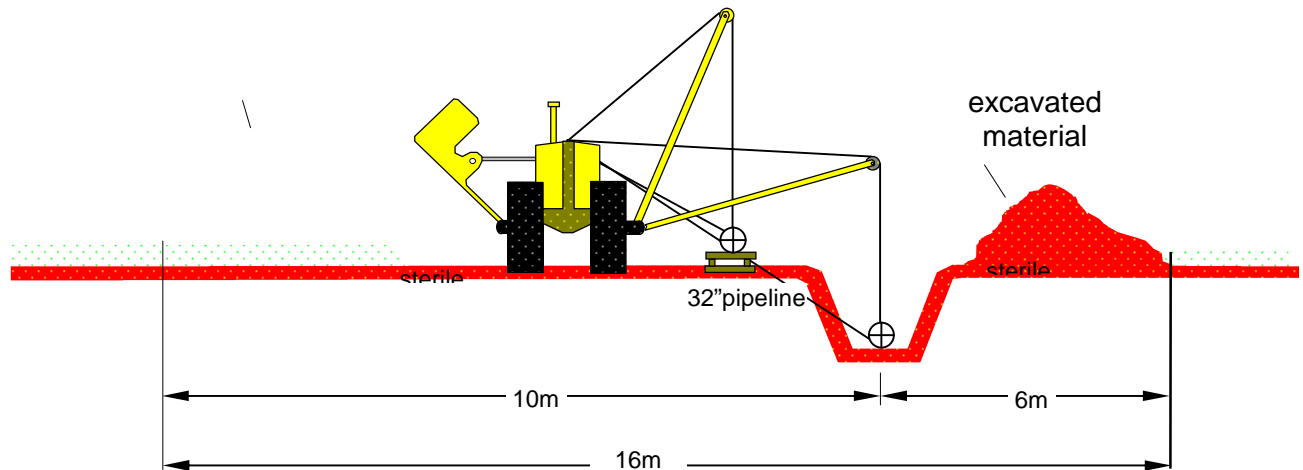
##### Working Width in Forest & Mountainous Areas

Constructing pipelines through forest and mountainous areas is regarded as “special conditions” and as such priced at a premium as progress is very slow. Major safety issues are prevalent, especially in mountainous areas and different construction techniques must be adopted. Weather conditions will dictate when such activities are possible.

As there is normally no top-soil to strip, the spread width can be reduced accordingly. In addition, and due to environmental and safety reasons it is common to forgo a running track also, and welding, lowering and lay, and non-destructive testing activities, are done with different techniques.

The working width or “spread” width in forest & mountainous areas will be sixteen (16) meters for 32” pipeline (see schematic figure below for 32” pipeline).

**Figure 6.5** Typical ROW zone configuration for 28” pipeline (Forest & Mountainous Areas)



#### 6.4.2.2

##### Crossings

The design and construction of crossings will follow the requirements of relevant codes and standards plus project specifications and will take account of any demands by third parties.

The pipeline Design Factors (DF) will be no higher than those defined in EN 1594 Clause 7.2.1. These design factors will be in accordance with those detailed in ASME B31.8 table 841.1.6-2. Design Factors for crossings of private roads, public roads, highways, motorways, railroads either with cased or uncased pipe.

A tentative list of crossings including location, description, width is included in Appendix B (Table B1).

Typical photographs from construction activities are presented in the APPENDIX F.

#### 6.4.2.3

##### Casing Pipes

The use of cased crossings will be minimized due to adverse effects on cathodic protection. Casing pipes material will be per EN 10208-2. The design of casing pipes will be according to EN 1594 requirements.

#### 6.4.2.4

##### Insulating Joints

Insulating joints will be installed along the pipeline route for cathodic protection.

During detail design, if special conditions are met, such as existence of industrial areas, stray current areas, abrupt soil resistivity changes, corrosive soil resistivity, marine crossings, etc, then additional isolation joints may be considered, if deemed necessary.

#### 6.4.2.5

##### Pipeline marker posts

Durable marker posts will generally be provided at field and property boundaries, at changes in route alignment and at each side of the road, rail and watercourse crossings. The posts will bear identification plates to a design approved by Owner.

Consideration may be given during detail design to the need for aerial markers at appropriate intervals to aid routine maintenance surveys by helicopter or light aircraft.

- 6.4.2.6      **Welding**  
Welding procedures and field welding will comply with a detailed project specific specification supplementary to EN 12732. The welding procedures must be qualified using project pipe, bends and fittings.  
Piping and vessels for underground installations (UGI) will have only butt welded joints.
- 6.4.2.7      **Non-Destructive Examination**  
All welds will be visually examined in accordance with EN 12732 and will be X-rayed or automatic ultrasonic tested in accordance with EN 12732.  
All welds will be completed using Gas Metal Arc Welding Process (automatic, mechanized or manual).  
“Golden welds” are welds which are not pressure tested in the field and will be 100% visually examined, 100% X-radiographed, 100% ultrasonic tested and 100% magnetic tested in accordance with EN 12732 and project specifications.  
Cut ends will be checked for laminations using ultrasonics.
- 6.4.2.8      **Pressure Testing**  
Pressure testing of the pipeline system will be performed in accordance to EN 1594, EN 12327 and project specifications. Test pressures will be calculated by the contractor and submitted for Owner approval.  
A strength test and tightness test should be carried out, although the tightness test may be combined with the strength test.  
The test pressure will be calculated in accordance with Clause 9.5.3 of EN 1594. There may be instances when pretesting may be appropriate (as listed in Clause 9.5.5 of EN 1594).  
For mountainous areas, the static head due to increased elevation will be considered and line pipe of suitable pipe wall thickness will apply, to compensate for this static head that will be defined in the course of the project.
- 6.4.2.9      **HDPE Conduit**  
Telecommunications with Block Valve and Scraper Stations will be using Fibre Optic Cables (FOC) installed as part of the pipeline installation. The FOC will be installed within a High Density Polyethylene (HDPE) conduit buried in the same trench as the pipeline.
- 6.4.3      Block Valve Stations**
- 6.4.3.1      **Design philosophy**  
Block valves will be installed on the pipeline for the purpose of isolating the pipeline for maintenance and for response to operating emergencies. When determining the placement of valves for sectionalising the pipeline, consideration will be given to locations that provide continuous accessibility to the valves.  
For determining the number of valves, assessment of the following factors will be carried out



- The amount of gas release due to repair and maintenance blowdowns, leaks or ruptures
- The time to blow down an isolated section
- The impact to the area of gas release
- Continuity of service
- Operating and flexibility of the system
- Future development in the vicinity of the pipeline.

EN 1594 does not specify limits for spacing of valves, however, the spacing between valves should not considerably exceed 30 km.

One (1) Block Valve station will be installed inside the Greek Territory, near the Greek-Bulgarian border.

#### 6.4.3.2

##### Configuration

Live Valve Stations will consist of the following:

- Main Block valve with actuator
- Bypass line with isolation valve to assist in the equalization of pressure each side of the main Block valve to allow it to be operated under minimum differential pressure
- Isolation valves on each tee for the bypass line to allow maintenance of the bypass valve
- Vent line with valve to a vent stack
- Connections for pressure and temperature transmitters

The bypass and vent valves are to be plug valves installed above ground to aid operability and maintainability. Above ground pipework will be electrically connected to the main Cathodic protection system with spark gaps provided for grounding. The distance between valve and vent stack is to be determined during the design phase based on gas dispersion, hazardous areas and noise. The piping to the vent stack will be buried after the above ground vent valve.

#### 6.4.3.3

##### Stab-outs philosophy

Provisions for stab-outs on the Block valve locations for future above ground installations will be considered during the design phase, if required. The stab outs will take the form of tees with guide bars and buried, blanked valves. Tees will be placed upstream and downstream of the Block valve to ensure supply to the future installation can be maintained should a single section of pipeline be isolated.

#### 6.4.4

##### Pipeline Scraper Launcher/Receiver

#### 6.4.4.1

##### Design philosophy

Scraper launcher and receiver stations will be installed at both ends of the pipeline. These stations will occur:

- at the start of the pipeline at Komotini
- at the end of the pipeline at Stara Zagora (Bulgaria).

The scraper stations will be designed for the use of permanent scraper launcher and receiver traps. The traps will be designed for bi-directional scraper operations in that launcher and receivers will be identical.

Scraper stations will be designed to permit venting, depressurization and scraper operations.

Intermediate scraper launcher and receiver stations will be installed at both ends of the parallel twin pipeline of the special crossing of the lake at Kardjahli and the river Maritza in Bulgaria, according to the Bulgarian law provisions.

#### 6.4.4.2

##### Configuration

The scraper stations will include the following:

Weld end permanent universal scraper trap with quick closing door installed on foundations

- Above ground full bore weld end isolation valve
- Above ground offtake barred tee
- Above ground Isolation joint, before the barred tee, for electrical isolation of the pipeline Cathodic Protection system
- Above ground offtake valve with bypass
- Kicker line with isolation valve for the forcing of pigs connected to the major barrel of the scraper trap
- Balance line to enable filling and pressurization of the scraper trap barrel on both sides of the pig at the same time
- Vent line with valve to vent stack for the blowdown of scraper trap and depressurizing/degassing of pipeline
- Pig Signalers to indicate the passage of pigs into or out of the pig trap will be installed.

The scraper launcher and receiver will be equipped with pressure indicators, pig signalers and safety locks with vent line to prevent unintentional opening of the quick closing door.

Drain lines will be incorporated into the scraper traps and into the pipeline upstream of the scraper in order to drain off liquid moved through the pipeline by pigs.

The bypass and vent valves are to be plug valves installed above ground to aid operability and maintainability.

The distance between valve and vent stack is to be determined during the design phase based on gas dispersion, hazardous areas and noise. The piping to the vent stack will be buried after the above ground vent isolation valve.

#### 6.4.4.3

##### Stab-outs to Future Facilities

Stab-outs for future facilities will be considered during the design phase, if required.

#### 6.4.5

##### Metering / Regulation Stations

The scope of the Metering/Regulation Stations is the measurement of the quality & quantity of gas passing through them and (if needed) the regulation (lowering) of the gas pressure.

They consist of the following two parts:

- o A roofed area under which the mechanical equipment is installed (valves, filters, flow regulators, flow meters etc.) The use of roof will be decided upon during the design stage.
- o Small building in which all the auxiliary equipment is installed: boilers, air conditioners, batteries, flow and supervisory

computers, UPS, Auxiliary power generator (EDG), offices, WC, etc.

In the surrounding space and inside the building all the underground auxiliary networks of electro-mechanical and communications networks are installed (water, sewer, power & data cables).

A small roofed space will be provided for the installation of the gas composition analyzers installation (along with their auxiliary equipment).

These stations operate automatically without personnel. However they are visited regularly by the maintenance and monitoring teams crews.

#### 6.4.6 Construction & Construction Camps

##### 6.4.6.1 General

All civil works required for the realization of the project, including site preparation, earthworks, reinforced concrete works, steelworks, site drainage, buildings and access roads will be designed in accordance with the latest applicable codes and standards listed in Appendix C

Construction of civil and structural works will be in accordance with Project Specifications.

##### 6.4.6.2 Pipeline civil works

#### Trenching

The trench for pipeline installation will be excavated in accordance with the international practices. The depth and width of the trench will be designed to provide sufficient space for proper pipe laying, compaction of bedding, padding and backfill material. The pipeline trench will be sufficiently deep to provide required cover and protection of the pipeline during the construction and service periods.

Depending on local geology and soil conditions trench slope inclinations will be adjusted/designed to ensure trench wall stability during construction of the pipeline. In areas where a high water table is encountered trench dewatering and drainage measures will be foreseen.

Pipeline trench cross section will be modified as necessary at locations where special pipeline protection measures are required (e.g. active fault crossings).

Pipeline trench design will be elaborated in the relevant project standard drawings and specifications. Local conditions including excavability, stability and compressibility of soil, as well as underground water table and existing networks will be adequately accounted for in the drawings and specifications to be developed.

#### Backfilling

Pipeline trench fill will in general consist of bedding, padding and backfill material.

Bedding course will provide adequate and uniform support conditions for the foundation of the pipeline to be laid. Padding will provide complete encasement of the pipeline within a protective cushion of fill material. In general, clean natural or quarry sand will be used for the construction of bedding and padding courses, except in areas where suitable select trench excavation material is available for that purpose.

Pipeline warning and identification mesh or concrete flagstones will be provided as required to indicate the location of the pipeline.

Backfilling of the pipe trench will provide adequate cover to the pipeline and will be designed to avoid undesirable settlements at the ground surface. In general, backfill material will consist of selected trench excavation material, except in road crossings where graded quarry aggregates will be specified where required.

Special fill materials and fill construction methods will be specified where pipeline protection measures are required (e.g. active fault crossings).

Pipeline trench fill materials, compaction requirements and fill construction methods will be fully specified and will cover all cases in the relevant standard drawings and specifications to be applied.

#### Reinstatement Works

Reinstatement of the top soil, when crossing cultivated areas.

Reinstatement of forest in the RoW zone (excluding the zone 5m from each side of the pipeline axis).

#### Protection measures

Special pipeline protection measures will be designed and specified where required to guarantee the integrity of the pipeline along the routing. Such measures will be indicatively required, and not necessarily limited to, the following locations.

- Crossings with roads and motorways
- Crossings with railways
- Crossings with rivers, ravines and streams
- Other locations with erosion protection potential (e.g. steep slopes)
- Crossings or parallel routing with active seismic faults
- Locations with potential slope instability problems
- Pipeline routing under water

In these locations pipeline protection measures will indicatively include, but not limited to, the following.

- Pipeline casing
- Pipeline lining
- River, or ravine, bed erosion protection
- River, or ravine, bank erosion protection
- Slope drainage and stabilization measures
- Special pipeline fill construction
- Pipeline backfill surface and subsurface erosion protection measures in slopes Provision for anti buoyancy measures

Pipeline protection measures, associated construction methods and materials will be fully specified and will cover all cases in the relevant standard drawings and specifications to be applied.

#### 6.4.6.3

#### Block Valve and Scraper Stations Civil and Structural Works

##### Building terms and associated clearances

The plot plan of Block Valve and Scraper stations will be elaborated and prepared taking into consideration minimum plan clearances between new installations, and between new installations and existing installations and infrastructure, or property limits. Station installations will be arranged in such a manner as to satisfy the following clearances derived from applicable Greek building terms legislation. In case of multiple clearance

requirements, including safety requirements defined elsewhere, the most stringent will apply.

Building clearances from site boundaries, existing or known future infrastructure, as well as clearances between station buildings, will be based on the requirements of the following applicable legislation.

- Law No. 4001, ΦΕΚ 179/A/2011 (Law for the Operation of Electricity and Gas energy markets, for the Research, Production and transmission networks of hydrocarbons and other settings)
- ΦΕΚ 270/Γ/1985 (building terms for properties outside approved town plan limits)
- ΦΕΚ 140/A/2000 Greek General Building Terms Regulation (ΓΟΚ)
- ΦΕΚ 169/A/1998 for clearances associated with public roads
- PPC document 5143/29-9-1981 for clearances associated with overhead power lines 66KV, 150KV and 400KV.

#### Site preparation & earthworks

An area around the new installations within the pipeline stations will be cleared of vegetation and the top soil will be stripped to a minimum depth of 0.30m. Clearance distances from the edges of the new installations and the exact boundaries of this area will be defined during the detailed engineering phase. This is to inhibit growth of vegetation and minimize the risk of fire initiation inside the station, or spread of external forest fires to the station, which could jeopardize the pipeline installation.

Site selection will, among others, aim to identify flat sites for pipeline stations in an effort to minimize required earthworks, civil works and provide reasonable access to the site. When this is not possible site leveling will be required to flatten the station area. Site leveling will be foreseen for the area occupied by pipeline installations, RCC building and internal roads.

Site leveling will be accomplished primarily by excavation and/or backfilling depending on site topography. Slope stability will be achieved by providing a safe inclination to the natural slopes (excavated) and artificial embankments (backfilling). Fill material will be selected excavation material conforming to project specifications, or quarry sand gravel when suitable selected material is unavailable.

When site topography limitations and/or available plot area inhibit the construction of the above slopes, cantilever reinforced concrete retaining walls will be provided to support site level differences.

#### Access roads to the stations

Access to the stations will be ensured by the construction of new access roads, or by improvement of existing tracks. Access roads will connect the stations to the existing road network of the particular area and their length will be minimized to the extent possible by site selection.

Where steep topography is encountered downhill of the road, and at changes of road direction, steel safety barriers will be provided.

In flat terrain the road will be constructed on an embankment of sufficient height to avoid flooding and ensure proper drainage of the access road on either side.

In mountainous terrain, where the road runs perpendicular to the slope of the hillside, road construction will be entirely in the excavated slope when

steep topography is encountered. Otherwise, if mild slopes are encountered, which permit stable fill construction, the road may be partially laid on fill. In both cases proper road drainage requires construction of concrete gutter uphill of the road section. Culverts will be foreseen along the low points of the longitudinal road section to allow downhill draining of the concrete channel along natural water courses.

#### 6.4.7

#### Worksite Equipment

The worksite will move along with the construction front. A typical worksite equipment composition (the equipment with the most significant impacts are included) for the total project works is presented below :

**TABLE 6.3** Typical worksite equipment composition

	ΜΗΧΑΝΗΜΑ / EQUIPMENT	Αριθμός / Number
1	ΒΑΡΥ ΦΟΡΤΗΓΟ / HEAVY TRUCK 35t 310KW	2
2	ΦΟΡΤΩΤΗΣ / LOADER 410KW	1
3	ΠΡΟΩΘΗΤΗΡΑΣ / DOZER 200 KW	2
4	ΙΣΟΠΕΔΩΤΗΣ / GRADER 168 KW	1
5	ΓΕΡΑΝΟΣ ΣΩΛΗΝΩΝ / SIDEBOOM 51KW	3
6	ΜΗΧΑΝΙΚΗ ΣΦΥΡΑ / ROCK HAMMER - 220KW	1
7	ΕΚΣΚΑΦΕΑΣ / EXCAVATOR - 220KW	2
8	ΑΕΡΟΣΥΜΠΙΕΣΤΗΣ / COMPRESSOR 17m <sup>3</sup> /min με/with ΔΥΟ ΑΕΡΟΣΦΥΡΕΣ / TWO DRILLS 14Kg	1
9	ΓΕΡΑΝΟΣ / CRANE 100 KW	1

Besides the above heavy trucks will be used and to transport the pipeline parts. The pipe segments will be transported from the factory in Greece or abroad (probably through the port of Alexandroupolis, or by train) and will be temporarily deposited in a suitable place (Depot) near the project from which will be moved by truck to the pipeline construction front.

The pipes will be transported in pieces of 16m each, and each truck can load five pieces. Thus it is estimated that to serve the Greek 31,5 Km section will require  $31500 / (16 * 5) = 393 \approx 400$  truck movements at least outside the worksite. Taking into account that disposal of the excavated material outside the ROW may be required, the number of total movements will increase, so a working hypothesis is 2000 total movements, with an average distance of 15Km is valid.

In works of a similar nature, the construction front advances at a speed of 400-500 m/d in the lowland parts and 100-250 m/d in the highlands. So the completion of the pipeline project is expected to last a period of 5-6 months. From the above it follows that the local road network will be charged with  $2000 / (6 * 20) = 17 \approx 20$  truck movements per day (max). The presence of the worksite in an area from the first job (deforestation) until the last (trench filling) is estimated at a few weeks, so any disturbance would be temporary.



**6.4.8** **Time Schedule – Budget**

The construction of the entire project (Greece and Bulgaria) is expected to last approximately 14 months. The Greek section is expected to be completed (pipeline, AGI and tests) in about 9 months.

The total project budget is estimated at € 210 M, of which € 36 M for the Greek section. Environmental remediation projects for the Greek Part (erosion protection works, planting, reforestation and water tanks) are estimated at € 0.5 M (1.4%).

**6.5** **Operation Phase****6.5.1** **System Operation**

The pipeline system will operate continuously 24hours a day 365 days per year. It will be supervised from the Operating Centre located in Bulgaria and will be provided with central SCADA system.

The system details will consist of :

- Pipeline operation (startup, shutdown etc.)
- Block Valve stations operation
- Metering / regulation stations operation
- Pigging Stations Operation

and will provide, among others, operational procedures for dealing with emergencies (e.g. leaks etc.) as defined during the detail design phase of the project.

**Figure 6.6** Typical (border) Metering Station.



**Figure 6.7** Typical Scraper Station Installations



**Figure 6.8** Typical Block Valve station Installations



#### 6.5.2

#### Use of raw materials, water and energy

The project during its construction uses the materials of the piping, the electrical & mechanical equipment and the Civil Works materials.

Due to its nature, the project does not consume any natural resources during its operational phase, except small amounts of electrical energy for the operation of the monitoring and control equipment.



## 7. Evaluation and Assessment of Environmental Impacts.

### 7.1 Impacts to the Atmospheric environment – Air Emissions

#### 7.1.1 Introduction – General Considerations

Air pollutant **emission** is the quantity of pollutant that is released from to the atmosphere from some source. It is expressed as the mass of the pollutant per mass of fuel or produced/consumed product. Air emissions are usually regulated by ELVs (Emission Limit Values)

Air pollutant **concentration** is a measure of the pollutant quantity in a given point in space and is the main criterion for the assessment of **air quality** problems that result to exposure effects in people and the natural environment. It is usually measured as mass of pollutant per volume of air.

Air pollutant **dispersion** is the path and distribution of air pollutants in space (and time). Air pollutant dispersion is affected by many phenomena & parameters as :

- Pollutant and source type
- Diffusion
- Advection
- Deposition
- Transformation
- Topography
- Meteorology

#### 7.1.2 Impacts to the Atmospheric environment during the construction phase of the project.

The main sources of air pollutants during construction are :

- Heavy vehicle traffic (conveying the pipes, concrete, equipment etc) in the construction zone and the nearby roads
- Use of heavy equipment for trenching and laying the pipeline. (line source)

The main atmospheric pollutants expected are dust (Particulate Matter or PM) from trenching and vehicle traffic and CO & NOx from traffic and heavy machinery operation.

It is obvious that this study does not allow a precise configuration registry of construction site equipment (eg types of equipment, the actual time of operation, projects construction schedules, etc). These will be determined after the selection of the Contractor and will be adopted in the context of better exploitation of the project. In order to draw conclusions regarding the impact on air quality during construction only approximate scenarios can be utilized.

So in the context of this study, the calculation of emissions from the combined overall operation of a typical worksite (with hypothetical composition) as described in Ch 6 (Table 6.3) was performed.

During the construction phase heavy vehicles are also used for the transport of materials. The calculations of emissions of air pollutants due to material transport with heavy vehicles were performed with the conservative assumption that the peak day twenty movements of heavy vehicles are performed at 30 km/h and the distance travelled by the heavy vehicle traffic is 15 km per movement.

The analysis of air pollutant emissions is based on fuel types used, fuel consumption and (conservative) emission factors for air pollutants, according to the methodology proposed by the Environmental Protection Agency of the USA (Mobile 2008, EPA / USA) as presented in the table 7.1a below. The analysis was conducted for 10 hours of worksite operation, ie that the following equipment, operating at different percentages of time according to the following table 7.1a.

With the conservative assumption that said equipment / vehicles run as stated in the relevant table, air pollutant emissions per day and full year of worksite activities are computed as shown in the table below and are assessed as small.



**TABLE 7.1a** Air pollutant emissions during construction.

FEED & EIA for Natural Gas Interconnector Greece – Bulgaria (IGB) Project						
CALCULATION OF AIR POLLUTANT EMISSIONS FROM CONSTRUCTION ACTIVITIES						
SURFACE WORKSITE						
WORKSITE OPERATION TIME			10 h/day			
A. ΣΥΝΤΕΛΕΣΤΕΣ ΕΚΠΟΜΠΗΣ / EMISSION COEFFICIENTS						
	ΠΗΓΕΣ / SOURCES	CO	NOx	VOC	SO2	PM
	Μηχανήματα / Equipment (kg/h)					
1	ΒΑΡΥ ΦΟΡΤΗΓΟ / HEAVY TRUCK 35t 310KW	0.429	1.294	0.142	0.000	0.048
2	ΦΟΡΤΩΤΗΣ / LOADER 410KW	0.440	1.181	0.125	0.000	0.044
3	ΠΡΟΩΘΗΤΗΡΑΣ / DOZER 200 KW	0.214	0.876	0.085	0.000	0.029
4	ΔΙΑΜΟΡΦΩΤΗΣ ΕΔΑΦΟΥΣ / GRADER 168 KW	0.263	0.974	0.103	0.000	0.036
5	ΓΕΡΑΝΟΣ ΣΩΛΗΝΩΝ / SIDEBOOM 51KW	0.156	0.131	0.075	0.000	0.015
6	ΜΗΧΑΝΙΚΗ ΣΦΥΡΑ / ROCK HAMMER - 220KW	0.373	0.842	0.117	0.000	0.046
7	ΕΚΣΚΑΦΕΑΣ / EXCAVATOR - 220KW	0.211	0.834	0.086	0.000	0.030
8	ΑΕΡΟΣΥΜΠΙΕΣΤΗΣ / CUMPRESSOR 17m3/min με/with ΔΥΟ ΑΕΡΟΣΦΥΡΕΣ / TWO DRILLS 14Kg	0.133	0.112	0.065	0.000	0.013
9	ΓΕΡΑΝΟΣ / CRANE 100 KW	0.210	0.412	0.080	0.000	0.038
	Φορτηγά (ντίζελ) - Diesel Trucks (gr/km)	1.896	7.395	0.409	0.000	0.169
B. ΛΕΙΤΟΥΡΓΙΑ / OPERATION						
	ΜΗΧΑΝΗΜΑ / EQUIPMENT	Αριθμός / Number	Λειτουργία / Operation (h)	Ποσοστό χρόνου / Percentage (%)		
1	ΒΑΡΥ ΦΟΡΤΗΓΟ / HEAVY TRUCK 35t 310KW	2	6.0	60		
2	ΦΟΡΤΩΤΗΣ / LOADER 410KW	1	6.0	60		
3	ΠΡΟΩΘΗΤΗΡΑΣ / DOZER 200 KW	2	6.0	60		
4	ΔΙΑΜΟΡΦΩΤΗΣ ΕΔΑΦΟΥΣ / GRADER 168 KW	1	6.0	60		
5	ΓΕΡΑΝΟΣ ΣΩΛΗΝΩΝ / SIDEBOOM 51KW	3	6.0	60		
6	ΜΗΧΑΝΙΚΗ ΣΦΥΡΑ / ROCK HAMMER - 220KW	1	6.0	60		
7	ΕΚΣΚΑΦΕΑΣ / EXCAVATOR - 220KW	2	6.0	60		
8	ΑΕΡΟΣΥΜΠΙΕΣΤΗΣ / CUMPRESSOR 17m3/min με/with ΔΥΟ ΑΕΡΟΣΦΥΡΕΣ / TWO DRILLS 14Kg	1	0.5	5		
9	ΓΕΡΑΝΟΣ / CRANE 100 KW	1	3.0	30		
	ΜΗΧΑΝΗΜΑ	Ημερήσιες Κινήσεις / Daily Trips	Μήκος / Length (Km)	Km/Day		
10	ΒΑΡΥ ΦΟΡΤΗΓΟ / HEAVY TRUCK 35t 310KW (Εκτός Εργοταξίου / Outside the Worksite)	20	15	300		

**TABLE 7.1b** Air pollutant emissions during construction (Continued).

FEED & EIA for Natural Gas Interconnector Greece – Bulgaria (IGB) Project						
CALCULATION OF AIR POLLUTANT EMISSIONS FROM CONSTRUCTION ACTIVITIES SURFACE WORKSITE						
C. ΕΚΠΟΜΠΕΣ / EMISSIONS						
		CO	NOx	VOC	SO2	PM
ΚΙΝΗΣΕΙΣ ΦΟΡΤΗΓΩΝ (ΜΕΤΑΦΟΡΑΣ ΥΛΙΚΩΝ) ΕΚΤΟΣ ΕΡΓΟΤΑΞΙΟΥ (kg/d) / TRUCKS (CARRYING SUPPLIES) OUTSIDE THE WORKSITE (Kg/d)						
ΗΜΕΡΗΣΙΕΣ / DAILY (kg/d)		0.57	2.22	0.12	0.00	0.05
ΕΚΠΟΜΠΕΣ ΕΝΤΟΣ ΕΡΓΟΤΑΞΙΟΥ / EMISSIONS INSTDE THE WORKSITE (kg/d)						
1	ΒΑΡΥ ΦΟΡΤΗΓΟ / HEAVY TRUCK 35t 310KW	5.14	15.53	1.70	0.00	0.57
2	ΦΟΡΤΩΤΗΣ / LOADER 410KW	2.64	7.09	0.75	0.00	0.27
3	ΠΡΟΩΘΗΤΗΡΑΣ / DOZER 200 KW	2.57	10.51	1.02	0.00	0.35
4	ΔΙΑΜΟΡΦΩΤΗΣ ΕΔΑΦΟΥΣ / GRADER 168 KW	1.58	5.85	0.62	0.00	0.22
5	ΓΕΡΑΝΟΣ ΣΩΛΗΝΩΝ / SIDEBOOM 51KW	2.81	2.36	1.35	0.00	0.28
6	ΜΗΧΑΝΙΚΗ ΣΦΥΡΑ / ROCK HAMMER - 220KW	2.24	5.05	0.70	0.00	0.28
7	ΕΚΣΚΑΦΕΑΣ / EXCAVATOR - 220KW	2.53	10.01	1.03	0.00	0.36
8	ΑΕΡΟΣΥΜΠΙΕΣΤΗΣ / CUMPRESSOR 17m3/min με/with ΔΥΟ ΑΕΡΟΣΦΥΡΕΣ / TWO DRILLS 14Kg	0.07	0.06	0.03	0.00	0.01
9	ΓΕΡΑΝΟΣ / CRANE 100 KW	0.63	1.24	0.24	0.00	0.12
ΜΗΧΑΝΗΜΑΤΑ/EQUIPMENT (ΕΝΤΟΣ/ INSIDE)		20.20	57.69	7.44	0.00	2.44
ΣΥΝΟΛΙΚΕΣ ΕΚΠΟΜΠΕΣ ΚΑΤΑΣΚΕΥΗΣ / TOTAL CONSTRUCTION EMISSIONS (kg/d)						
ΓΕΝΙΚΟ ΣΥΝΟΛΟ / GRAND TOTAL		20.77	59.90	7.57	0.00	2.49
ΣΥΝΟΛΙΚΕΣ ΕΤΗΣΙΕΣ ΕΚΠΟΜΠΕΣ ΚΑΤΑΣΚΕΥΗΣ / TOATAL YEARLY CONSTRUCTION EMISSIONS (tn/y)						
ΣΥΝΟΛΟ ΕΤΗΣΙΩΝ ΕΚΠΟΜΠΩΝ / EMISSIONS TOTAL		6.23	17.97	2.27	0.00	0.75
D. ΕΚΠΟΜΠΕΣ ΣΚΟΝΗΣ ΑΠΟ ΤΗΝ ΚΑΤΑΣΚΕΥΗ / DUST EMISSIONS FROM CONSTRUCTION						
ΣΥΝΤΕΛΕΣΤΗΣ ΕΚΠΟΜΠΗΣ ΕΡΑ - AP42		2.7 Mg/(He.Month)				
EMISSION COEFFICIENT ΕΡΑ - AP42		0.27 Kg/m2.Month				
ΠΑΡΑΔΟΧΕΣ / ASSUMPTIONS						
			Length (m)	Width (m)	Area (m2)	Duration (months)
ΕΝΕΡΓΟ ΜΕΤΩΠΟ ΠΕΔΙΑΔΑ / ACTIVE FRONT PLAINS			1000	26	26000	0.2
ΕΝΕΡΓΟ ΜΕΤΩΠΟ ΔΑΣΟΣ / ACTIVE FRONT FOREST			1000	16	16000	0.3
ΕΚΠΟΜΠΕΣ / EMISSIONS						
ΕΚΠΟΜΠΕΣ ΑΝΑ ΧΙΛΙΟΜΕΤΡΟ / EMISSIONS PER KILOMETER (Kg/Km)					Km	Kg
ΕΝΕΡΓΟ ΜΕΤΩΠΟ ΠΕΔΙΑΔΑ / ACTIVE FRONT PLAINS			1404	x	15	21060
ΕΝΕΡΓΟ ΜΕΤΩΠΟ ΔΑΣΟΣ / ACTIVE FRONT FOREST			1296	x	16.5	21384
ΣΥΝΟΛΙΚΕΣ ΕΚΠΟΜΠΕΣ / TOTAL EMISSIONS (Tn)						
			42.4			

From the above table it is concluded that the project does not incur significant emissions of the atmospheric environment and the majority of these happen in areas away from human activities. No climate impacts are expected.

The impacts to the atmospheric environment during the construction phase are expected to be localized and negligible.

### 7.1.3

Impacts to the Atmospheric environment during the operation phase of the project.

Regarding emissions from the NG itself from leakages, the initial design of the pipeline according to the standards is such that Natural Gas leakages in no case expected during the normal operational phase of the project.

However, the operation of the project leads to significant reduction of atmospheric emissions from the use NG instead of heavier fuels that produce more pollutants per delivered energy unit.

This can be clearly shown with the use of the emission coefficients of several fuels compared to those of NG as presented below :

**Table 7.2:** Emission coefficient from burning various fuels (energy production).

FUEL	LHV - $\Theta_x$ (kWh/kg)	Air pollutant emissions [ $\lambda_{k,v}$ ] (g/kg fuel)					
		CO <sub>2</sub>	SO <sub>2</sub>	CO	NO <sub>x</sub>	HC	PM
Fuel Oil No 1 (1500) Low Sulfur Content	11,45	3175	14	0,565	5,363	0,188	1,832
Fuel Oil No 1 (1500) High Sulfur Content	11,11	3109	64	0,553	5,251	0,184	1,832
Fuel Oil No 3 (3500) Low Sulfur Content	11,40	3175	14	0,565	5,363	0,188	1,832
Fuel Oil No 3 (3500) High Sulfur Content	11,05	3091	64	0,550	5,221	0,183	1,832
Diesel	11,92	3142	0,7	0,572	2,384	0,191	0,286
LPG	12,73	3030	0,0	0,332	2,102	0,080	0,100
<b>Natural Gas</b>	<b>13,83</b>	<b>2715</b>	<b>0,0</b>	<b>0,332</b>	<b>2,102</b>	<b>0,080</b>	<b>0,100</b>
Other Fuels	According to Literature						

Source : ΥΠ.ΑΝ. 2002

The data from the above table can demonstrate that the effect of the increase in NG use promoted by the pipeline under study will lead to positive impacts to several other environmental media (except the atmosphere where the positive effects are obvious).

## 7.2

**Impacts to the Water Resources & Aquatic environment – Liquid waste.**

### 7.2.1

Impacts to the Aquatic environment during the construction phase of the project.

The Impacts to the Water Resources & Aquatic Environment can be divided to the following categories:

- Impacts to the water resources of the works area (rivers, lakes, springs & wells)
- Impacts to the potable water distribution networks of the municipalities along the pipeline route.
- Impacts to the irrigation networks of the regions along the pipeline route.
- Possible surface & groundwater pollution from construction activities.

The pipeline route does NOT cross rivers. The crossings of watercourses / streams will be constructed by open cut taking special bed and banks erosion protection measures. The main goal will be NOT to disrupt in any case their flow. Impacts to lakes, springs & wells are not expected.

As a whole, **the impacts to the water resources and aquatic environment during the construction phase are expected to be minimal and reversible.**

#### 7.2.2

#### Impacts to the Water Resources and the Aquatic environment during the operation phase of the project.

The initial design of the pipeline according to the standards is such that surface and groundwater pollution are in no case expected during the operational phase of the project. Specifically measures shall be taken to:

- Ensure full pipeline air tightness (hydraulic test, welding tests) to avoid leakage.
- Ensure corrosion protection
- Ensure all the necessary test after the pipeline construction and before commission.

Furthermore, even in the extreme case of a rupture and leakage no pollution to the surface and/or groundwater is expected due to the very low solubility of NG to water.

As a whole, **the impacts to the water resources and aquatic environment during the operations phase of the project are expected to be negligible.**

### **7.3**

#### **Impacts to the Ground / Landscape – Solid waste**

#### 7.3.1

#### Impacts to the ground / Landscape during the construction & operation phases of the project

The impacts to the ground and landscape arise mainly from:

- Topsoil Removal
- Trench Excavation (see Figure 7.1)
- Trench Backfilling
- Remediation Works – Planting etc

and mainly result to the temporary change of soil structure along the route of the pipeline and the texture and color of the reinstated topsoil and plants that will differ from the surrounding environment.

The worksites produce municipal type solid waste, while the trenching activities are going to produce some excavation surplus.

It is expected that there will be an excavation surplus of the order of magnitude of 63.000 m<sup>3</sup> based on the assumption of a typical NG pipeline (32”) trench and the conservative assumption of about 2m<sup>3</sup> surplus per meter of trench.

The following table shows the analysis of the slope (along and across) the pipeline route.

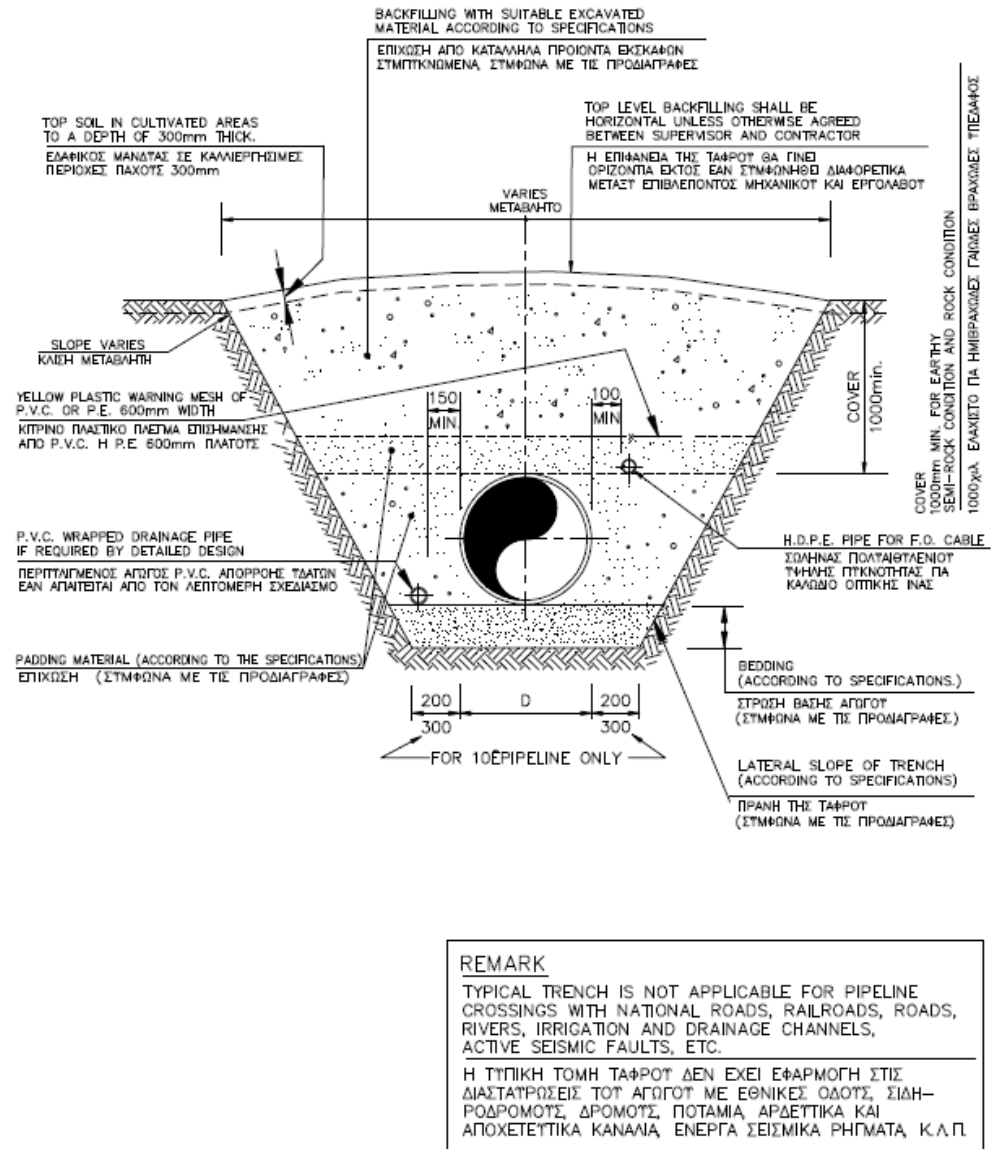
**TABLE 7.3:** Ground slope along the pipeline route.

		LONGITUDINAL SLOPE / ΚΑΤΑ ΜΗΚΟΣ ΚΛΙΣΗ			LATERAL SLOPE / ΕΓΚΑΡΣΙΑ ΚΛΙΣΗ		
		0-15%	15-30%	>30%	0-15%	15-30%	>30%
<b>TOTAL / ΣΥΝΟΛΟ</b>	<b>31479.87</b>	<b>22373.83</b>	<b>4637.53</b>	<b>4468.51</b>	<b>22665.96</b>	<b>5690.47</b>	<b>3123.44</b>

From the above table we observe that the greater part of the pipeline (71% of total length) travels in mild gradients (0-15%) wherein substantially minimum impact to the ground is expected. Particular attention is needed to the remaining part (about 9Km) which is located in more pronounced gradients (> 15%) and in which erosion impacts may occur.

These impacts can be prevented by taking protective & reinstatement measures, especially for areas with steep slopes, which are described in detail in Chapter 8.

Figure 7.1 Typical Trench for NG pipelines Cross Section



TYPICAL TRENCH SECTION IN EARTHY, SEMI ROCKY OR ROCKY SOILS IN OPEN COUNTRY  
ΤΥΠΙΚΗ ΔΙΑΤΟΜΗ ΤΑΦΡΟΥ ΣΕ ΓΑΙΩΔΗ, ΗΜΙΒΡΑΧΩΔΗ Η ΒΡΑΧΩΔΗ ΕΔΑΦΗ ΣΤΗΝ ΉΠΙΑΙΩΡΟ

As a whole, the impacts to the ground and landscape during the construction phase are expected to be minimal and reversible provided that the necessary measures are taken .

### 7.3.2

### Optical Intrusion



The construction activities are performed inside a zone of 26 meters for 32” pipeline. Especially for forested areas and high agricultural production areas this zone can be reduced to 16 meters.

However, all topsoil and plants present in this zone will be removed and a temporary linear color and texture discrepancy to the whole view will be evident.

This optical impact is of course temporary during the construction phase and can be mitigated mainly by using the same type of soil material for backfilling the top-layer and the same kind of plants for planting over the affected zone.

Summarizing, **the optical intrusion impacts during the operation phase are expected to be minimal and reversible provided that the necessary measures are taken.**

## 7.4 Impacts to Flora & Fauna

### 7.4.1 Impacts to Flora During the Construction phase of the Project

During the construction phase of the project there are Impacts to the Flora:

Agricultural plantations are affected but can be returned back to their use after the construction is over. The impact (mainly economical) is greater if the construction period co-incides with the crop season, so this problem can be avoided by careful design of the construction schedule. Over the installed NG pipeline vineyards and all single-year plantations can be raised but planting of trees will be prohibited in a zone spanning 5m from the axis of the pipeline.

Forested areas will suffer impact from the removal of trees during the construction phase. However forest trees will be planted out of the zone spanning 5m from the axis of the pipeline in order to makeup for the lost trees.

As a whole, **the impacts to the Flora during the construction phase are expected to be minimal and reversible provided that the necessary measures are taken.**

### 7.4.2 Impacts to Flora During the Operation phase of the Project

The optical impact from plant removal during the construction phase will be suppressed by the remediation measures and natural re-creation during the operational phase. Usually in such projects more new trees are planted than they are removed in order to make-up for the loss of vegetation. **There are no impacts from the operation phase of the project to the Flora.**

#### 7.4.3 Impacts to Fauna During the Construction & Operation phase of the Project

##### Mammal Species

All large mammals, such as the Canis Lupus, may be disturbed during the construction period, since they are sensitive to human presence and overall annoyance, but no serious long- term effects are to be expected. Concerning the operation phase of the project no impact to the mammal species is expected.

It must be stressed that the N.G. pipelines, in contrast with the highway construction projects, DO NOT cut and separate the species habitats because they do not inhibit the crossing from the two sides of the project.

##### Avifauna Species

Most of the bird species present in the study area (Picus canus, Picus viridis, Dryocopus martius, Dendrocopos major, Dendrocopos medius, Dendrocopos leucotos, Dendrocopos minor) might be subjected to a moderate disturbance, since part of their habitat is going to be destroyed during construction. The number of mature, old trees that are going to be destroyed should be minimized to the absolutely necessary.

**Summarizing, the impacts to fauna during the Construction & Operation phase are expected to be localized, minimal and reversible provided that the necessary measures are taken.**

### **7.5 Impact from Noise**

#### 7.5.1 Impact from Noise during the construction phase of the project

The main sources of noise during construction are :

- Heavy vehicle traffic (conveying the pipes, concrete, equipment etc) in the construction zone and the nearby roads
- Use of heavy equipment for trenching and laying the pipeline. (line source)

The duration of the noise impact, near populated areas, is expected to last from 08.00 am to 17.00 pm. And in the summer up to 18.00 pm.

The applicable Hellenic laws concerning noise emissions from construction activities are :

- 56206/1613, ΦΕΚ 570/Β/9.9.86
- 69001/1921, ΦΕΚ 751/Β/18.10.88
- Α5/2375, ΦΕΚ 689/Β/18

From experience of similar projects in Greece it is concluded that due to the type of the project (line source) **only limited impacts are expected from noise** during the construction phase only in areas near cities or settlements. All these impacts are temporary can be mitigated by using the equipment suggested by the local laws & regulations.

However, given the scale of the project and the scope of this environmental study the combined overall noise level  $L_{Aeq}(T)$ , (for operation time  $T = 10$  hours of a typical worksite composition), for a receiver located at a reasonable distance from the location of project sites (200m).

The analysis was conducted in accordance with British Standard BS 5228 and for 10 hours operation of the site construction. Consistent with details of BS5228 should be noted that the following calculations were elaborated for equipment types that are characterized by high noise emission values ie an adverse scenario of a construction site specifically only for the case of the evaluation of the effects of noise.

The analysis was conducted for 10 hours of pipeline construction, ie the operation of the following equipment, operating at different levels of time according to the table below, which presents the results of predicting the noise level of the index  $L_{Aeq}$  (10 hours) derived from this scenario of "hypothetical-adverse" synthesis worksite for 10 hours (Table 7.4).

The effect on the acoustic environment near the roads from which there is a heavy vehicle traffic due transfer of material (Table 7.5) is also calculated.

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

TABLE 7.4: Noise level calculations – Construction activities (worksite)

FEED & EIA for Natural Gas Interconnector Greece – Bulgaria (IGB) Project

NOISE LEVEL CALCULATION Leq(T) FROM CONSTRUCTION ACTIVITIES ACCORDING TO BS5228:Part 1:1984  
SURFACE WORKSITE



CONTROL POINT RECEIVER IN DISTANCE  
WORKSITE OPERATION TIME

200m - FROM WORKSITE BORDER - WITHOUT NOISE SUPPRESSION MEASURES  
10 h

A. STATIONARY WORKSITE NOISE SOURCES

Α/Α	ΤΥΠΟΣ ΜΗΧΑΝΗΜΑΤΟΣ / EQUIPMENT TYPE	L <sub>Aeq</sub> στα 10m	ΑΠΟΣΤΑΣΗ / DISTANCE (m)	ΔΙΟΡΘΩΣΕΙΣ / CORRECTIONS					ΔΙΟΡΘ. / CORR. L <sub>Aeq</sub>	ΔΙΑΡΚΕΙΑ ΕΡΓΟΥ / DURATION (h)		ΤΕΛΙΚΗ / FINAL ΣΤΑΘΜΗ ΘΟΡΥΒΟΥ / NOISE LEVEL
				ΑΠΟΣΤΑΣΗ / DISTANCE	ΛΕΙΤΟΥΡΓΙΑ ΦΥΣΙΚΟΥ ΠΕΤΑΣΜΑΤΟΣ	ΕΔΑΦΟΣ % SOFT = 50%	ΑΝΑΚΛΑΣΕΙΣ / REFLECTIONS			ΑΠΟΛΥΤΗ ΔΙΑΡΚΕΙΑ / DURATION	% επί 10h	
1	ΑΕΡΟΣΥΜΠΙΕΣΤΗΣ / CUMPRESSOR 17m <sup>3</sup> /min με/with ΔΥΟ ΑΕΡΟΣΦΥΡΕΣ / TWO DRILLS 14Kg	80	200	-26.02	0.00	-1.00	0.00	52.98	0.50	0.05		39.97
2	ΓΕΡΑΝΟΣ / CRANE. 100 KW	79	200	-26.02	0.00	-1.00	0.00	51.98	3.00	0.30		46.75

B. MOVING WORKSITE NOISE SOURCES

Α/Α	ΤΥΠΟΣ ΜΗΧΑΝΗΜΑΤΟΣ / EQUIPMENT TYPE	Μέση Τιμή / Mean Value LWA	ΑΠΟΣΤΑΣΗ / DISTANCE (m)	ΔΙΟΡΘΩΣΕΙΣ / CORRECTIONS					ΔΙΟΡΘ. / CORR. L <sub>PA</sub>	ΣΥΝΤΕΛΕΣΤΗΣ ΑΠΟΣΤΑΣΗΣ / DISTANCE COEFF	ΧΡΟΝΟΙΣΟΔΥΝΑΜΟ / TIMEEQUIVALENT (to)	ΔΙΑΡΚΕΙΑ ΔΡΑΣΤΗΡ. / DURATION (h)	ΔΙΟΡΘ. ΧΡΟΝΟΥ ΣΥΝ. ΔΙΑΡΚ. ΕΡΓΟΥ. % 10h	ΤΕΛΙΚΗ ΣΤΑΘΜΗ ΘΟΡΥΒΟΥ / FINAL NOISE LEVEL
				Διαν. Μήκος / Length	MIN	ΑΠΟΣΤΑΣΗ / DISTANCE	ΛΕΙΤΟΥΡΓΙΑ ΦΥΣΙΚΟΥ ΠΕΤΑΣΜΑΤΟΣ	ΕΔΑΦΟΣ % SOFT = 50%	ΑΝΑΚΛΑΣΕΙΣ / REFLECTIONS					
1	ΒΑΡΥ ΦΟΡΤΗΓΟ / HEAVY TRUCK 35t 310KW	104	200	180	-53.11	0.00	-1.00	0.00	49.89	1.11	0.63	6.00	0.38	45.67
1	ΒΑΡΥ ΦΟΡΤΗΓΟ / HEAVY TRUCK 35t 310KW	104	200	180	-53.11	0.00	-1.00	0.00	49.89	1.11	0.63	6.00	0.38	45.67
2	ΦΟΡΤΩΤΗΣ / LOADER 410KW	104	200	180	-53.11	0.00	-1.00	0.00	49.89	1.11	0.63	6.00	0.38	45.67
3	ΠΡΟΩΘΗΤΡΑΣ / DOZER 200 KW	104	200	180	-53.11	0.00	-1.00	0.00	49.89	1.11	0.63	6.00	0.38	45.67
3	ΠΡΟΩΘΗΤΡΑΣ / DOZER 200 KW	104	200	180	-53.11	0.00	-1.00	0.00	49.89	1.11	0.63	6.00	0.38	45.67
4	ΙΣΟΠΕΔΩΤΗΣ / GRADER 168 KW	110	200	180	-53.11	0.00	-1.00	0.00	55.89	1.11	0.63	6.00	0.38	51.67
5	ΓΕΡΑΝΟΣ ΣΩΛΗΝΩΝ / SIDEBOOM 51KW	104	200	180	-53.11	0.00	-1.00	0.00	49.89	1.11	0.63	6.00	0.38	45.67
5	ΓΕΡΑΝΟΣ ΣΩΛΗΝΩΝ / SIDEBOOM 51KW	104	200	180	-53.11	0.00	-1.00	0.00	49.89	1.11	0.63	6.00	0.38	45.67
5	ΓΕΡΑΝΟΣ ΣΩΛΗΝΩΝ / SIDEBOOM 51KW	104	200	180	-53.11	0.00	-1.00	0.00	49.89	1.11	0.63	6.00	0.38	45.67
6	ΜΗΧΑΝΙΚΗ ΣΦΥΡΑ / ROCK HAMMER - 220KW	108	200	180	-53.11	0.00	-1.00	0.00	53.89	1.11	0.63	6.00	0.38	49.67
7	ΕΚΣΚΑΦΕΑΣ / EXCAVATOR - 220KW	100	200	180	-53.11	0.00	-1.00	0.00	45.89	1.11	0.63	6.00	0.38	41.67
7	ΕΚΣΚΑΦΕΑΣ / EXCAVATOR - 220KW	100	200	180	-53.11	0.00	-1.00	0.00	45.89	1.11	0.63	6.00	0.38	41.67

COMBINED NOISE  
INDICATOR (10h) 57.9 dB(A)

**TABLE 7.5:** Noise level calculations – Construction activities (heavy vehicle traffic)

**C. MOVING NOISE SOURCES - MATERIAL CARRYING TRUCKS**

	CARRYING EQUIPMENT	MEAN VALUE	Hourly Peak Traffic Volume	Distance from receiver (m)			
				30	50	70	100
		LWA	veh/h	FINAL NOISE LEVEL dB(A)			
1	HEAVY TRUCK / ΒΑΡΥ ΦΟΡΤΗΓΟ 35t	104	10	51.5	49.2	47.8	46.2
			20	42.8	40.5	39.1	37.5
			30	42.9	40.7	39.3	37.7
			50	43.2	40.9	39.5	37.9

From the calculations above, it can be concluded that **no substantial effects from noise are expected during the construction of the project.**

**7.5.2**

**Impact from Noise during the operation phase of the project**

**No Impacts to the Acoustic Environment** are expected during the operation phase of the project and no extra protective measure should be taken.

For the Metering / Regulating & Pigging stations, the limits set by the Hellenic Law should be met at the perimeter of the installation as follows :

Presidential Decree 1180/81, (emission limits for noise dependent upon the type of area).

- 70 dB(A) in industrialized areas
- 65 dB(A) in semi industrialized areas
- 55 dB(A) near limited-use installations
- 50 dB(A) in urban areas

Having in mind that the abovementioned installation do not emit noise by themselves, these noise levels can be easily met by the use of sound suppression equipment and noise insulation (if needed).

**7.6**

**Impacts to Infrastructure & Networks**

**7.6.1**

**Impacts during the construction phase**

**Roads**

As it has already been discussed the pipeline route crosses with highways, regional & local roads of the area under study. The type of crossing is presented in appendix B. Minor impacts to road traffic, mainly due to safety reasons during the crossing construction works is expected. This impact will be temporary (a few days) and fully reversible. As it has already been stated there will be some traffic increase in the local roads due to the transport of the construction materials. In any case this impact is temporary (some days) and fully reversible. **Full Interruption of Traffic is not expected in any major road.**

**Power Grid**

No impacts to the Public Power Grid are expected during the construction phase of the project.

#### 7.6.2 Impacts during the operational phase

**No Impacts to the Infrastructure & Networks** are expected during the operation phase of the project and no extra protective measure should be taken.

**However, the operation of the NG pipeline under study will give the opportunity for future NG use in the areas along its route, if distribution networks are constructed. This is considered a positive impact.**

### **7.7** **Impacts to Land Use**

#### 7.7.1 Impacts during the construction phase

The consequences of a project of this type to the land use occur mainly during the construction phase and can be summarized as:

Temporary disruption of all land uses at the ROW area during the construction

- Cultivated land shall be cleared and any plants removed, so care should be taken for the construction works not to co-incide with crop collection. If this is not possible the farmers are compensated for their crops.
- In forest areas the ROW is limited to 16 m in order to minimize environmental impact. However all trees and vegetation in this zone should be cut and removed. No consequence outside this zone is expected.
- Special care has been taken during the design phase in order to avoid passing through Residential Areas. However if any NG pipeline passes through residential areas building is prohibited in a zone spanning 20m from each side of the pipeline axis.

Having in mind that after the completion of the construction works the affected area will be re-instated the **consequences to land use of the project during construction can be kept to a minimum.**

#### 7.7.2 Impacts during the operational phase

The impacts to each type of land use during the operational phase of the project are:

Agricultural land: The only impact to the cultivated areas shall be the prohibition of planting deep-rooted trees in a zone 5m from each side of the pipeline axis. This impact is in fact minimal because the usual spacing of trees is 8-10m. Over the pipeline, every kind of single-year crop and vines can be cultivated. Considering the above, the consequences to the agricultural land shall be minimal.



Forests: After the construction of the pipeline the forest area shall be reinstated with the planting of trees to cover the affected ROW except from the zone 5m from each side of the pipeline axis. This zone shall be planted with bushes & shrubs in order not to affect the forest character of the area. If the local forest inspection authorities ask for it, the ROW may be left unplanted in order to act as a fire-suppression zone.

Residential use: Considering that the proposed route does not pass through the limits of cities, towns or other settlements, no impacts are expected during the operational phase of the project, although building shall be prohibited in a zone spanning 20m from each side of the pipeline axis.

Summarizing, the impact to agricultural land and forests shall be minimal and reversible, while no significant impact is expected to the residential land use during the operation phase of the project. Positive impact is expected in areas with industrial development (Industrial Zones).

## 7.8 Impacts to the Historic & Cultural heritage

### 7.8.1 Impacts during the construction phase

The research produced a number of monuments and sites of archaeological interest along the general area of the pipeline, as the regions of Thrace has a very long history.

The sites that exist in the general area of the pipeline (or the alternatives) an could be potentially affected by the project are presented in APPENDIX C.

From them the sites that lie in the general area within the 4 km zone.

- the Byzantine antiquities of Papikio Mountain archaeological area north of Komotini (including the remains of a byzantine castle) and ,
- Classical antiquities (remains of prehistoric fences and the sanctuary of hero horseman (“Ἱερο ἥρωα Ἰππῆα” in greek) in the mountaintops near Nymphaea village.

Although the pipeline routing does not cross these sites directly, it is possible that antiquities may come up during the excavation or specific protection measures may be requested to be undertaken due to the proximity to the pipeline route. In principle all works should be under the supervision of the Archaeological Service, while test pits might be requested in advance as well as small scale alterations of the pipeline routing.

The opinions of the Archaeological Authorities, as well as the Report of Detailed Archaeological Documentation which was elaborated by the Ministry of Culture and Tourism during the Preliminary Assessment of Environmental Requirements Procedure are included in Appendix A.

#### 7.8.2 Impacts during the operational phase

**No Impacts to the Historic & Cultural Heritage** are expected during the operation phase of the project and no extra protective measure should be taken.

### **7.9 Social & Economical Impact**

#### 7.9.1 Impacts during the construction phase

The proposed routing corridor does not pass through continuous Urban Fabric so no special measures have to be taken. The only socio-economical impacts are related with the small scale damage to the agricultural areas from which the pipeline passes (which, however are not of high productivity or protected cultures) for which there will be financial compensation as dictated by the Greek law.

For the areas close to major cities and settlements, If the measures that the relevant authorities recommend are employed **no Major Social & Economical adverse Impacts are expected during the Construction Phase. On the contrary positive impacts are expected to the local economy and employment.**

#### 7.9.2 Impacts during the operational phase

**The whole Project, in its Operational Phase, is expected to have significant Positive Social & Economical Impact to the country in general.**

Specifically the participation of Greece in the IGB Project:

- Turns Greece into a major European player in Natural Gas Distribution
- Increases the energy resources independence of Greece & Bulgaria
- Further promotes the use of Natural gas in the nearby regions of Bulgaria with significant positive environmental impact.

### **7.10 Trans-Boundary Impact**

#### 7.10.1 Impacts during the construction phase

The project type is such that, as it was stated before, during the construction :

- Large quantities of air, water and solid pollutants, which could potentially have trans-boundary impacts are not emitted.
- Does not affect large areas of habitats and protected ecotopes so that the impacts could possibly have trans-boundary character.

- Does not cross, or affect any trans-boundary large river or lake, in the Greek territory.
- Does not affect the climate adversely.

However, in any case, the routing of the pipeline enters into the Bulgarian territory in an area designated in the NATURA 2000 network BG0001032 (Rodopi – IZTOCHNI). It is possible that the Bulgarian permitting authorities may impose special protection measures for the construction works in this area.

It is concluded that If the measures that the relevant authorities recommend are employed **no Trans-Boundary Impacts are expected during the Construction Phase.**

#### 7.10.2

#### Impacts during the operational phase

**The whole Project, in its Operational Phase, is expected to have significant Positive Trans-Boundary Impact to the two countries in general.**

#### **7.11**

#### **Characterization of the Environmental Impacts**

The characterization of the Environmental Impacts of the Project during both its construction and its operational phases are presented in the following tables.

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

7.11.1

Impacts during the construction phase – Tabulated presentation

**Table 7.6:** Impacts to the Natural & Man-made Environment during the construction phase.

Environmental Aspect	IMPACT			MAGNITUDE			DURATION		REVERSIBILITY			MITIGATION		
	Positive	Neutral - NO	Negative	Weak-Negligible	Medium-Non significant	Strong-Significant	Temporary -short duration	Permanent –long duration	Fully-Reversible	Partially-Reversible	Non-Reversible	Can be Fully mitigated	Can be Partially mitigated	Can Not be mitigated
<b>Natural Environment</b>														
Microclimatic Characteristics		P												
Landscape		P		P										
Visual Intrusion			P				P		P			P		
Geology		P												
Ground-Soil			P	P			P		P			P		
Surface Water			P	P			P		P			P		
Groundwater		P												
Atmospheric environment			P	P			P		P			P		
Noise			P	P			P		P			P		
Ecosystems		P												
Flora			P		P		P			P		P		
Fauna		P												
<b>Man-made Environment</b>														
Land Use		P												
Urban Development		P												
Employment	P					P		P						
Local Economy	P					P		P						
Housing		P												
Infrastructure & Networks		P												
National Economy		P				P		P						
Historic & Cultural Heritage			P											
<b>Trans-Boundary Impacts</b>		P												

7.11.2

Impacts during the operational phase – Tabulated presentation

**Table 7.7:** Impacts to the Natural & Man-made Environment during the operational phase.

Environmental Aspect	IMPACT			MAGNITUDE			DURATION		REVERSIBILITY			MITIGATION		
	Positive	Neutral - NO	Negative	Weak- Negligible	Medium- Non significant	Strong- Significant	Temporary -short duration	Permanent -long duration	Fully- Reversible	Partially- Reversible	Non- Reversible	Can be Fully mitigated	Can be Partially mitigated	Can Not be mitigated
<b>Natural Environment</b>														
Microclimatic Characteristics		P												
Landscape		P												
Visual Intrusion		P												
Geology		P												
Ground-Soil		P												
Surface Water		P												
Groundwater		P												
Atmospheric environment		P												
Noise		P												
Ecosystems		P												
Flora		P												
Fauna		P												
<b>Man-made Environment</b>														
Land Use		P												
Urban Development		P												
Employment		P												
Local Economy		P												
Housing		P												
Infrastructure & Networks	P					P		P						
National Economy	P					P		P						
Historic & Cultural Heritage		P												
<b>Trans-Boundary Impacts</b>	P					P		P						





## **8. Protection and Restoration Measures**

### **8.1 Protection and Restoration Measures for the Atmospheric environment.**

To prevent and mitigate the effects to the environment during the construction of the project:

The construction contractor should make use of well maintained equipment in accordance with EU emissions standards and should apply some simple management practices (spraying water during excavation, washing the wheels of trucks leaving the worksite etc.).

Specifically measures shall be taken to:

- Ensure full pipeline air tightness (hydraulic test, welding tests) to avoid leakage.
- Ensure corrosion protection
- Ensure all the necessary test after the pipeline construction and before commission.

### **8.2 Protection and Restoration Measures for the Water Resources & Aquatic environment**

The impacts to the major irrigation networks (if any) can be minimized by execution of the necessary fieldwork when the irrigation needs are minimal.

In order to prevent possible surface and groundwater pollution from construction activities, no liquid and solid waste will be left behind without being collected and disposed properly.

Similar effects can be prevented if sludges from drilling are collected and recirculated properly thus preventing pollution of surface water bodies. Local regulations concerning liquid & solid waste management must be observed in order to avoid such phenomena.

Some quantities of water will be used for the hydraulic testing of the pipeline. Since the testing is done in parts as the pipeline construction proceeds, the same amount of water can be used again and again, thus minimizing the quantity needed. Having in mind that the pipeline will be internally protected with an epoxy resin cover the water quality will not be affected. In any case the quantity of water used for the hydraulic testing will be filtered and its quality tested by the constructor in order to find, in co-operation with the local authorities the most suitable disposal method.

The final form of the project after the backfilling of the pipeline should allow stormwater runoff to prevent erosion of the soil. To strongly sloping soils will construct embankments in herringbone shape (see below) so

that stormwater runoff be driven to the forest and not return to the area of the pipeline.

### 8.3

### Protection and Restoration Measures for the Ground / Landscape

As it has been already mentioned in Chapter 7, the change to the soil structure may lead to topsoil erosion in areas with high lateral slopes so some kind of soil protection is needed as shown below :

**Figure 8.1** Typical protection measures utilizing cement / sand bags

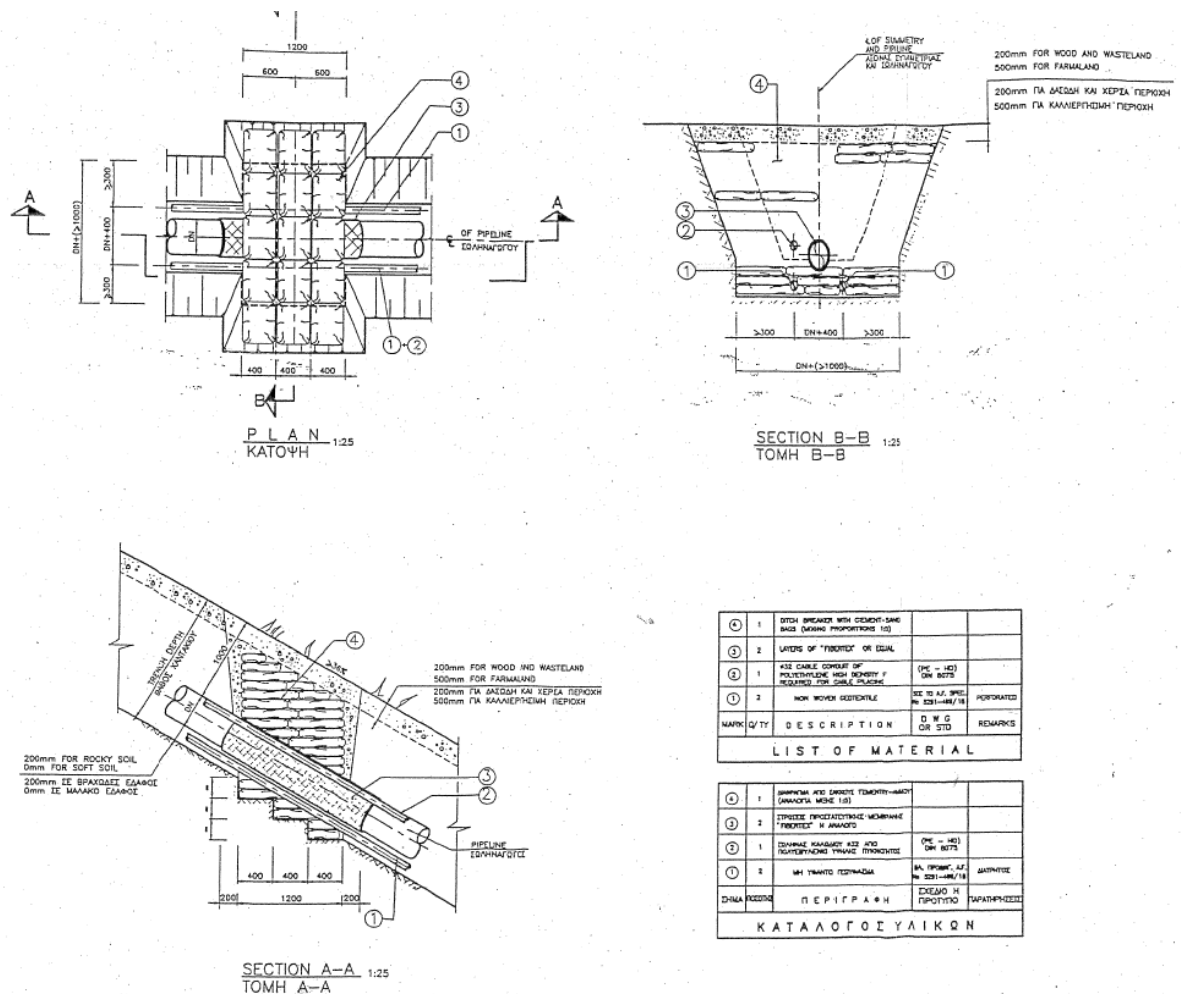
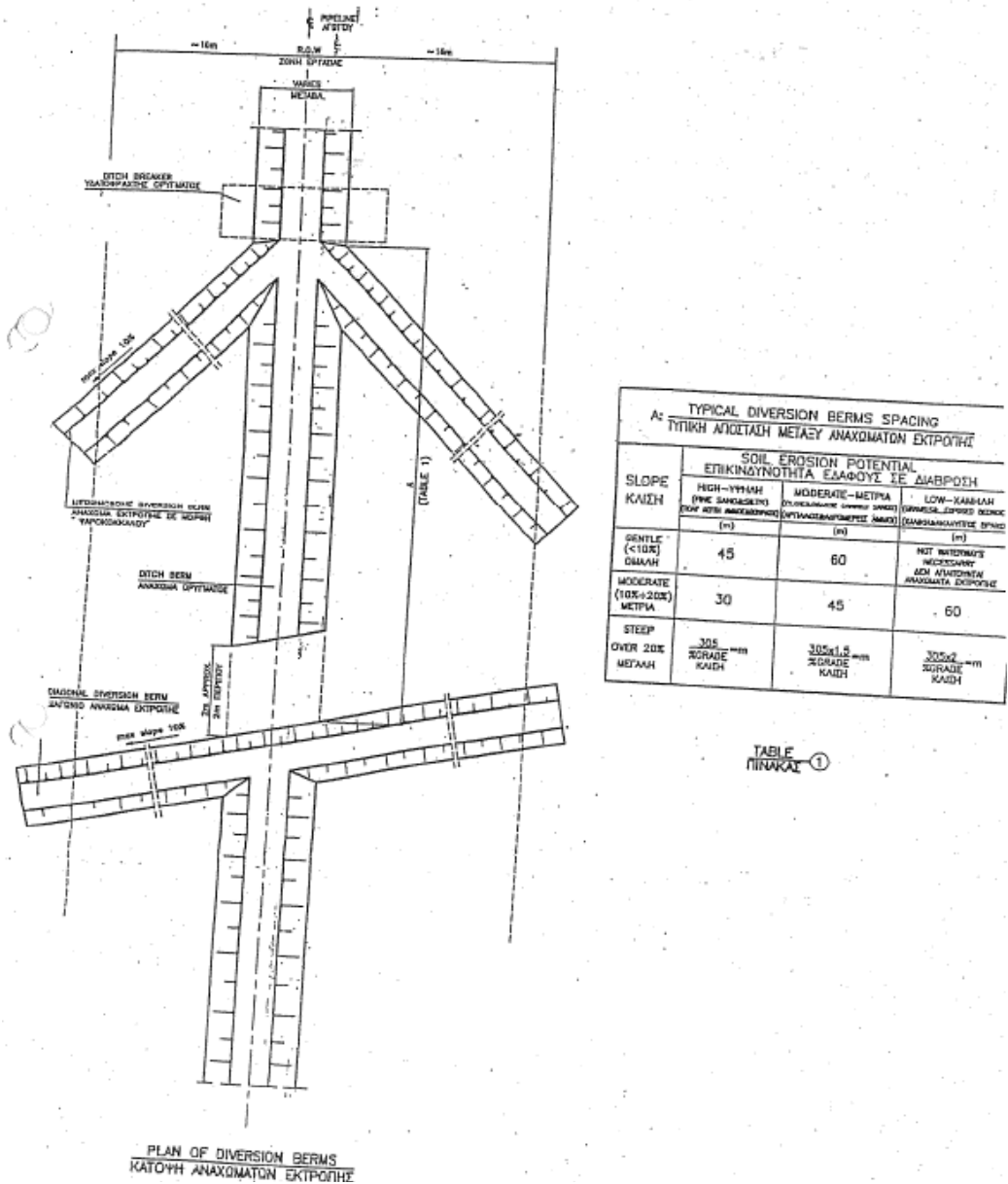
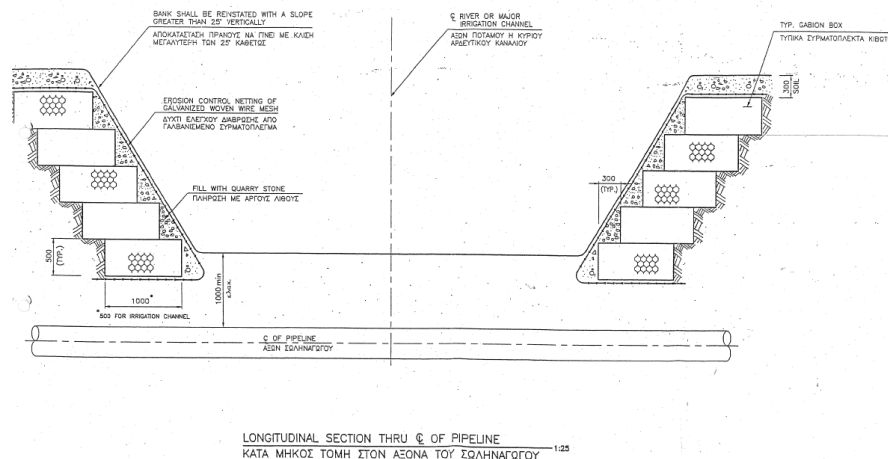


Figure 8.2 Typical Diversion Berms for Soil Erosion Prevention



**Figure 8.3** Typical Gabion Box Bank Erosion Prevention



Characteristic photographs of reinstatement and erosion prevention works are presented in APPENDIX F.

the project's construction materials will come from the legally operating quarries in the area.

The surplus excavated material that will occur will be allocated on a priority basis in consultation with the local Forest Service to restore old quarries (if any) following a restoration study. If, however, some amount of material should be deposited in forest character the approval required by the provisions of N.998/79 will be obtained. In each case the excess soil would be placed appropriately in cooperation with local and regional authorities, which will be kept in close contact on the issue.

There will be no disposal of surplus excavated material into streams and torrents to ensure the free flow of the water and also in areas with significant vegetation. The disposal of used oils from the equipment of the worksite to the sea, streams, archaeological areas or on the ground is strictly prohibited. These will be collected and placed in appropriate places, according to the provisions of Presidential Decree 82/2004 (Government Gazette 64A/2.3.2004).

The municipal type solid waste produced by the worksite activities should also be disposed properly to the local Landfills operated by the Municipalities along the pipeline corridor (Komotini Sanitary Landfill).

The worksite will be located within the zone of occupation of the project and the owner will take remedial measures for these sites after the construction work.

The excavation will be done mechanically. If deemed necessary to use explosives, this will be done after a special agreement with the competent authorities and all necessary measures are taken to effectively address potential impacts. The use of explosives within any kind of protected areas is not permitted.

#### 8.4

#### Protection and Restoration Measures for the Flora & Fauna

##### Flora

Agricultural plantations are affected but can be returned back to their use after the construction is over. The impact (mainly economical) is greater if the construction period co-incides with the crop season, so this problem can be avoided by careful design of the construction schedule. Over the installed NG pipeline vineyards and all single-year plantations can be raised but planting of trees will be prohibited in a zone spanning 5m from the axis of the pipeline.

Forested areas will suffer impact from the removal of trees during the construction phase (ROW of 16m). However forest trees will be planted out of the zone spanning 5m from the axis of the pipeline in order to makeup for the lost trees.

Especially for this project the local forest inspection authority proposed, during the Preliminary Assessment of Environmental Requirements Procedure, the following :

- In the area between the points K101 to K105 (of the initial routing REC), where a reforested area is affected, it is proposed to reforest five times the affected area in a point that will be indicated by the local forest authority. A reforestation area at least equal to the affected area is considered reasonable.
- In the context of taking fire protection measures it is proposed that the project owner constructs two (2) water tanks (with the additional capability of helicopter filling) one in the “Nymfea” forest and one in the “Frouros” military post in specific points that will be indicated by the local forest authority. It is proposed to install two black prefabricated reservoirs, made of linear polyethylene with protection against solar UV radiation, with a capacity of about 40,000 liters of water. These tanks are cylindrical with dimensions: diameter 5,1 m and height about 2 m, bearing inlet and outlet manifolds for water at the bottom of the side walls (where the thickness of the tank is at least 10mm), with valve and STORZ 65 coupling along with waterproof cap. These tanks will be able to supply aerial fire fighting means.

The local forest inspection authority imposed also the following terms.

- Any intervention in forest areas will be done after the approval of relevant permissions. The cutting of trees and shrubs required for the installation of the pipeline will be limited to the

minimum required for the project construction, avoiding, where possible, cutting the old trees. Before commencement of works the project owner will elaborate a logging table drafted by a private forester, for the produced forest products, that will be officially approved. The forest products will be allocated in accordance with the provisions of the Forest Law.

- The topsoil will be preserve suitable to use in Landscaping restorations.
- The forest roads affected will be restored.
- The restoration works will be done according to a study, which will be drafted by a private forester and approved officially. The forest species selected will be endemic.
- In areas with steep slopes the project owner will take the required measures to protect forest land from erosion.
- The affected area will not be fenced off.

It is mentioned here that along with the abovementioned protection measures the following will also be applied :

Any damage to vegetation, from the construction works will be reduced to the minimum possible. Logging and eventual eradication of trees will be in accordance with the instructions of the local Forest Service. Disposal of timber products will be in accordance with the provisions of the Forest Law.

The fertile topsoil that will result from the excavation will be kept in the ROW and will be used for restoration works. The elaboration of a forest study for the restoration of forest vegetation and improve the aesthetics of the landscape from the interventions of the construction of the project will be done in cooperation with the competent Forestry Service and in accordance with Article 16 of Law 998/79 while using native forest species.

Characteristic photographs of reinstatement and erosion prevention works are presented in APPENDIX F.

### Fauna

All large mammals, such as the Canis Lupus, may be disturbed during the construction period, since they are sensitive to human presence and overall annoyance, but no serious long- term effects are to be expected. The construction personnel should be informed for these animals and the protection status for them. The destruction of large and old trees should in general be minimized, and of course the destruction of any caves should be altogether prevented.

It is suggested that the works leave a vertical column of available soil above the pipeline at least 50cm deep, so that species that live in underground tunnels (Microtus, Spermophilus) and especially those that normally do not disperse aboveground (Talpa, Nanno-spalax) can dig their runnels through it.



Considering the birds, the number of mature, old trees which usually are nesting points for birds, that are going to be destroyed, should be minimized to the absolutely necessary.

## 8.5 Protection and Restoration Measures for Noise

The worksite equipment should be certified according to EU standards regarding noise emissions.

In the case of work areas near sensitive uses (eg, Psychiatric Hospital of Komotini) the compliance with a strict work timetable is required and the use of portable noise barriers if any complaints occur.

In any case, the project owner should take precautions to minimize noise emissions.

## 8.6 Protection and Restoration Measures for the Infrastructure & Networks

The movement of vehicles should be done as possible through the existing road network and avoid opening new roads. If this is impossible, all measures required by the forest legislation, as well as all the necessary permits should be acquired.

Special care should be taken to protect irrigated areas, corrosion protection should be provided along the pipeline and the irrigation and drainage systems and networks affected (if any) should be immediately restored.

All intersections will be restored to its original natural, soil, ecological and technical conditions. The asphalt layer should be restored on roads also.

## 8.7 Protection and Restoration Measures for Land Use

The protection and restoration measures for each case of land use are :

Agricultural land: The only impact to the cultivated areas shall be the prohibition of planting deep-rooted trees in a zone 5m from each side of the pipeline axis. This impact is in fact minimal because the usual spacing of trees is 8-10m. Over the pipeline, every kind of single-year crop and vines can be cultivated.

Forests: After the construction of the pipeline the forest area shall be reinstated with the planting of trees to cover the affected ROW except from the zone 5m from each side of the pipeline axis. This zone shall be planted with bushes & shrubs in order not to affect the forest character of the area. If the local forest inspection authorities ask for it, the ROW may be left unplanted in order to act as a fire-suppression zone.

Residential use: Considering that the proposed route does not pass through the limits of cities, towns or other settlements, no impacts are expected during the operational phase of the project, although building shall be prohibited in a zone spanning 20m from each side of the pipeline axis.

## 8.8 Protection and Restoration Measures for the Historic & Cultural heritage

All the observations of competent Antiquities Authorities should be met. All work will be conducted upon request in writing (at least 15 days in advance) to those Authorities. Upon detection of antiquities, work will cease and will be followed by a rescue excavation, the costs of which will be included in the project budget under the provisions of Article 37 of N 3028/2002.

These terms apply to all kinds of trenching work, regardless of depth, as well as for landscaping works.

In the case of any archaeological findings during the construction of the pipeline, the owner has the obligation to comply with the special conditions appointed by the Archaeological Service. These might be surveillance of the construction works, rescue excavation of the site, conservation and publication of the findings financed by the developer according to the legislation.

In any case, according to the Law 3905/2010 (ΦΕΚ 219Α' 23-12-2010) Article 43) a Special Memorandum of Understanding and co-operation (MOU) will be signed with the project owner and the relevant authorities. This MOU can contain additional terms concerning the project in question that are not in conflict with the provisions of the General MOU Model. The MOU contents will be legally binding for the two parts.

## 8.9 Protection and Restoration Measures for Social & Economical Impacts

The proposed routing corridor does not pass through continuous Urban Fabric so no special measures have to be taken. The only socio-economical impacts are related with the small scale damage to the agricultural areas from which the pipeline passes (which, however are not of high productivity or protected cultures) for which there will be financial compensation as dictated by the Greek law.

## 8.10 Protection and Restoration Measures from possible Accidents

The project owner must implement strict safety rules during construction of the project and take all necessary fire prevention measures.

Until the completion of the works and before any test filling of the pipeline, even partial, the responsible operator and project management should prepare a management plan, which will detail all the activities and actions

to be taken in case of failure of the pipeline, accidents, extreme weather conditions, fire, earthquake, etc. This management plan will also provide ways to restore any environmental damage. The implementation of the restoration work shall and the relevant expense are the owners responsibility.

## 8.11

### **Protection and Restoration Measures for Trans-Boundary Impacts**

The project type is such that, as it was stated before, during the construction :

- Large quantities of air, water and solid pollutants, which could potentially have trans-boundary impacts are not emitted.
- Does not affect large areas of habitats and protected ecotopes so that the impacts could possibly have trans-boundary character.
- Does not cross, or affect any trans-boundary large river or lake in the Greek territory.
- Does not affect the climate adversely.

However, in any case, the routing of the pipeline enters into the Bulgarian territory in an area designated in the NATURA 2000 network BG0001032 (Rodopi – IZTOCHNI). It is possible that the Bulgarian permitting authorities may impose special protection measures for the construction works in this area.



## **9. Environmental Management and Monitoring System (EMMS)**

### **9.1 General considerations**

According to the recent Greek Law 4014/2011 (ΦΕΚ 209/Α' - Appendix II) the EIA study should contain a Plan for Environmental Management and Monitoring that will be implemented in order to assure the effective protection of the environment and implementation of the proposed measures which will also include.

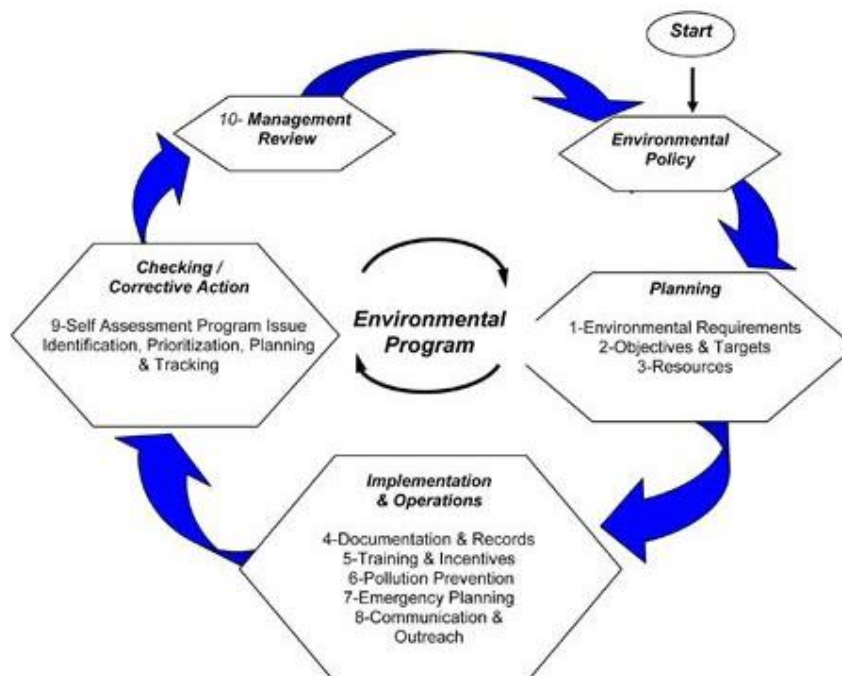
In this context, an Environmental Management and Monitoring System (EMMS) shall be employed and maintained during the whole process of the design, construction and operation of the proposed pipeline. The main elements of the system (Policy, Organization chart, Monitoring program etc). This system will include the monitoring program, will be in accordance with the abovementioned Law, and is outlined below :

It is proposed that the system shall be based on the basic principles of ISO 14001:2004 :

- Environmental Policy
- Environmental Requirements
- Environmental Aspects & Impacts
- Environmental Objectives & Targets
- Organization chart, Roles/Responsibilities -Resources
- Documentation & Records
- Environmental Personnel Training & Incentives
- Pollution Prevention and Monitoring
- Planning for Emergencies
- Communication & Outreach
- Self Assessment Program and Internal Audits
- Management Review

The System shall address ALL the requirements of the Environmental Terms Document issued for the project by the authorities and shall ensure continuous improvement of the environmental performance of the project.

**Figure 9.1** Environmental Management & Monitoring Systems Structure



## 9.2 Environmental Policy

The Construction Contractor should prepare and communicate its environmental policy which must be approved by the project owner (in the case he is not certified according to ISO 14001 - so it has its own Environmental Policy).

## 9.3 Environmental Requirements

The environmental requirements of the project consist primarily of the specific demands of the Environmental terms Document and the enforcement of environmental legislation in general.

A specification of the requirements of the Environmental Management and Monitoring is listed below :

- Construct the pipeline with minimal disruption to landowners and the local community.
- Implement all environmental measures on noise, vibration, dust and lighting to minimize environmental impact.
- Effective traffic management to reduce the impact on local road users.
- Maintain cleanliness and order throughout the project.
- Minimize the impact on any affected Utility with the protection and / or replacement during the construction.



- Regular updating of residents and local authorities on the construction progress and creation of an efficient management scheme of any complaints.
- Respond to all local concerns about the construction of the Project.
- Make reports on the environmental performance of the Construction Contractor during construction of the Project.
- Minimize the impact on the natural environment during pipeline construction.
- Ensure continued protection and monitoring of flora and fauna affected by the Project
- Minimize the potential for pollution by ensuring that environmental protection measures are effectively implemented.

#### **9.4 Environmental Aspects & Impacts**

The Environmental Aspects and Impacts of the project both during construction and during operation were analyzed in the preceding chapters of this EIA study.

The developer, under the EMMS, is proposed to prepare a table of Environmental Aspects and Impacts and to identify the significant of them, and those which result from certain obligations from the Environmental Terms Document and / or legislation.

#### **9.5 Environmental Programs - Objectives & Targets**

For each of the significant environmental aspects the owner and / or the CC, under the EMMS, is proposed to set targets and prepare programs to achieve these goals.

Examples include:

- Air pollution monitoring Program.
- Noise monitoring program.
- Water Pollution Monitoring Program.
- Program for monitoring Solid waste emissions and surplus excavation material disposal.
- Program for monitoring impacts on flora and fauna and recording land reclamation / reforestation and deforestation.
- Program for Monitoring Impact in Cultural Heritage and recording of possible archaeological findings.

#### **9.6 Organization Chart / Roles & Responsibilities - Resources**

The intention of the Owner for the environmental management of the project is supported by the allocation of resources (human, material and financial) for monitoring, prevention and control of environmental impacts of the project, both during construction and during operation. These resources should be explicitly stated.

Human resources, which are the most significant should be determined by a detailed chart that defines the roles and responsibilities of persons in its staff. In particular, the chart should refer to those responsible for the implementation of the EMMS in all the levels of administration as well as the person responsible for compliance to the Environmental Terms Document.

## **9.7 Documentation & Records**

The project Owner and the CC will develop within the EMMS a documentation and archiving system, so that all the procedures, work instructions and documents that are used to record and document the environmental performance of the project are organized and easily accessible for any internal and external audit.

## **9.8 Environmental Personnel Training & Incentives**

The project Owner, under the EMMS is proposed to draw up an environmental education program for his staff and the staff of the Construction Contractor.

The Effective environmental education and staff awareness program should include :

- Introductory Program in Environmental Education
- Environmental Education Program for this Project
- Regular meetings of Educational Personnel
- Advanced Environmental Education.

Further training can be done when necessary.

## **9.9 Pollution Prevention and Monitoring**

### Identifying and Reducing Risk

Prevention is one of the most effective means of control of any environmental pollution. Before starting any work or activity in a specific project, an assessment of the environmental risks associated with this activity is made and appropriate measures are taken to prevent such risks. Each Procedure of the CC should include environmental risk assessment and identification of appropriate measures to avoid potential environmental impacts during the project.

### Education and Awareness

The CC ensures that project staff are trained and aware of the appropriate measures to prevent pollution during construction work.

### Inspections and Monitoring

Work during construction must be continuously monitored and controlled by the CC and a representative of the Owner. Continuous monitoring and control ensures that pollution prevention measures are implemented and all activities are compatible with the EMMS.

### Spill prevention and control

All the necessary measures should be taken to prevent environmental incidents during construction, however, preparations should be made for the successful confrontation of an environmental incident.

In case of an emergency such as the oil spill on the ground, the staff of the Contractor is required to follow the procedure for dealing with spills.

Especially in case of use of the collection vessel for leakages, after dealing with the emergency, the contents of the container should be replaced immediately with new materials for leak control.

## 9.10 Planning for Emergencies

Having in mind that the requirements of the recent Hellenic No. Δ3/A/OIK. 4303 ΠΕ 26510 (ΦΕΚ 603Β' 5-3-2012) Technical Regulation “Natural Gas Transmission Systems with Maximum Operating Pressure over 19 bar” should be met, the following actions must be taken :

Until the completion of the works and before any test filling of the pipeline, even partial, the responsible operator and project management should prepare a management plan, which will detail all the activities and actions to be taken in case of failure of the pipeline, accidents, extreme weather conditions, fire, earthquake, etc. This management plan will also provide ways to restore any environmental damage. The implementation of the restoration work shall and the relevant expense are the owners responsibility.

The CC is obliged to construct a list of contacts for emergencies that will be available to all staff of the Project and included in the EMMS. The contact list will include individuals specifically trained to deal with emergency environmental incidents.

### Incident management

In the event of an environmental incident in the Project the CC must ensure that the event will be recorded in the Book of environmental incidents. The record of environmental incidents include the following:

- Any malfunction of the environmental protection systems.
- Any event with possible environmental pollution.
- Any emergency.

## 9.11 Communication & Outreach

The proper and immediate communication is essential for the effective implementation of the EMMS. The owner, under the EMMS is proposed to prepare a communications program to determine the internal and external communications systems to be used for the effective management of environmental communication.

### Internal Environmental Communication

The internal communication refers to environmental issues relevant to the Project and will be held during the meetings of the Contractor and

subcontractors with representatives of Supervision and the Owner to discuss environmental issues such as monitoring, measurement, any complaints, advancement of education and other areas of concern.

External Environmental Communication

This is the rest of communication on environmental issues (eg with authorities, NGOs and citizens).

**9.12 Self Assessment Program and Internal Audits**

The performance of the EMMS must be derived both from self-assessment and internal audits. It is proposed to develop procedures for Internal Environmental Inspections (Audits) by the CC and external Audits by the Owner (or Third Party) whose results are submitted to the permitting authority.

**9.13 Management Review**

It is proposed that the EMMS and its performance are reviewed by the management at regular time intervals.

## **10. Public Consultation**

### **10.1 Stakeholder Identification**

The stakeholders for a project of this magnitude and geographical span are various and can be categorized as :

- Authorities directly (by law) involved in the Environmental Permitting Procedure.
- Authorities indirectly involved in the permitting process (need to provide their consent due to the constraints posed by existing infrastructure and land use planning).
- Infrastructure Networks constructors & Operators.
- NGOs (like Hellenic Ornithological Society etc.).
- Local environmental Groups and the general public.

A comprehensive list of the Authorities directly or indirectly involved in the permitting process is presented in Appendix E. Working with these Authorities has been continuous and fruitful and all their comments were taken into account to achieve the best environmental project design.

### **10.2 Stakeholder Engagement Stages**

The stakeholders above engage the permitting procedure during the phases of :

- A. Preliminary Assessment of Environmental Requirements Procedure (ΠΠΠΑ in Greek).
- B. Final environmental assessment and Environmental Terms Document Issuance.

As dictated by the Joint Ministerial decision Η.Π. 37111/2021/2003, "Determination of the means of public information and participation during the environmental permitting procedure according to paragraph 2 of article 5 of Law N. 1650/1986 as replaced by paragraphs 2 & 3 of article 3 of Law 3010/2002", (National Gazette Issue 1391/29-9-03). According to the recent Law 4014/2011 ΦΕΚ 209/Α', the public information and involvement phase is mandatory and can be achieved either through the Regional Council or independently (Article 19)

Furthermore the stakeholders get involved according with the provisions of the Espoo Convention.





## 11. **Safety Measures**

A Qualitative Project Risk assessment will be carried out and all findings will be recorded to a Risk Register. This Risk Register will be a live document that will be constantly updated with risks arising during the design period.

The risks to be considered in the design stage are: Design risks Approval required from the various entities involved with the project (Client, Government and 3rd parties etc) Security of supply (gas) risk Procurement risks Construction risks Commissioning risks General risks such as environmental, terrain, seismic etc.

A Qualitative Risk Analysis (QRA) of the pipeline system will be performed when the route is finalized. The possible areas of the largest population clusters will be assessed for the risk from external interference and seismic ground movement.

In any case the minimum requirements of the recent Hellenic No. Δ3/A/OIK. 4303 ΠΕ 26510 (ΦΕΚ 603Β' 5-3-2012) Technical Regulation “Natural Gas Transmission Systems with Maximum Operating Pressure over 19 bar” should be met.



12.

**Conclusions - Recommendations**

The Proposed Routing is the best both technically and environmentally, compared with two (2) other options that were examined. The present Environmental Impact Assessment report has examined any impacts that may arise from this and proposes the necessary measures of protection. Special emphasis has been given in the identification of areas that may create problems in the development of the project.

It is concluded that the project, during its construction and operation phases, does not cause any significant, long-lasting and irreversible impacts both to the physical and the man-made environment.

The benefits generated by the project are mainly related to the reduction of air pollution that arises from burning natural gas instead of liquid and solid fuels that are currently consumed in the region and the gradual replacement of the fuel in central heating and industries at the cities that will be serviced by the pipeline.

Finally, the project is associated with social and economic benefits generated by reducing energy costs, increasing jobs during the implementation / operation of the project and general development activities carried out in the region of Thrace.

The pipeline design work was done in close cooperation with local authorities and utilized all the suggestions that emerged during the Preliminary Assessment of Environmental Requirements Procedure to achieve an optimum environmental design.

For all these reasons, the Proposed Routing of the IGB Gas Pipeline, is environmentally acceptable and **the issuance of a decision approving the environmental terms document is proposed.**

For the Engineer "Penspen Ltd. - C&M Engineering S.A.

  
Emmanuel Kalliorakis  
Dipl. Mech. Engineer NTUA

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17. Webpage of DESFA [www.desfa.gr](http://www.desfa.gr)
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19. EUNIS Database <http://eunis.eea.europa.eu>





**APPENDIX A: POSITIVE PRONOUNCEMENT ON PEIA STUDY -  
CORRESPONDENCE & OPINIONS**

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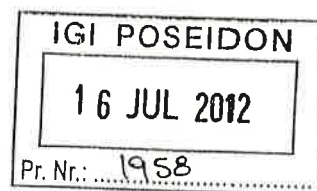


**ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ, ΕΝΕΡΓΕΙΑΣ  
& ΚΛΙΜΑΤΙΚΗΣ ΑΛΛΑΓΗΣ  
ΓΕΝΙΚΗ ΔΙΕΥΘΥΝΣΗ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΕΥΠΕ  
(ΕΙΔΙΚΗ ΥΠΗΡΕΣΙΑ ΠΕΡΙΒΑΛΛΟΝΤΟΣ)  
ΤΜΗΜΑ Α'**

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ΑΔΑ: Β41Ξ0-Υ5Θ  
Αθήνα, 12 Ιουλίου 2012

Α.Π. οικ. 200504



ΠΡΟΣ: ΠΙΝΑΚΑ ΑΠΟΔΕΚΤΩΝ

**Θέμα :** Προκαταρκτική Περιβαλλοντική Εκτίμηση και Αξιολόγηση του σταθμού μέτρησης και συμπίεσης του έργου: «ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ (ΑΦΑ) ΥΨΗΛΗΣ ΠΙΕΣΗΣ ΓΙΑ ΤΗ ΔΙΑΣΥΝΔΕΣΗ ΕΛΛΑΔΑΣ-ΒΟΥΛΓΑΡΙΑΣ & ΤΙΣ ΣΥΝΟΔΕΥΤΙΚΕΣ ΕΓΚΑΤΑΣΤΑΣΕΙΣ».

**Έχοντας υπόψη:**

1. Το Ν.1650/1986 «για την προστασία του περιβάλλοντος» (ΦΕΚ Α' 160), όπως τροποποιήθηκε και ισχύει.
2. Το Ν. 998/1979 (ΦΕΚ Α' 289) περί δασών όπως τροποποιήθηκε και ισχύει.
3. Το Ν. 3028/2002 (ΦΕΚ Α' 153) για την προστασία των Αρχαιοτήτων και εν γένει της Πολιτιστικής Κληρονομιάς.
4. Το Ν. 3852/2010 (ΦΕΚ Α' 87) περί Προγράμματος Καλλικράτη
5. Το Ν. 4014/2011 (ΦΕΚ Α' 209) περί Περιβαλλοντικής Αδειοδότησης Έργων και Δραστηριοτήτων κλπ.
6. Την με α.π. 1958/2012 (ΦΕΚ Β'21) ΥΑ για κατάταξη δημόσιων και ιδιωτικών έργων και δραστηριοτήτων σε κατηγορίες και υποκατηγορίες σύμφωνα με το Άρθρο 1 παράγραφος 4 του Ν. 4014/21.09.2011 (ΦΕΚ Α' 209).
7. Την ΥΑ 15277/2012 (ΦΕΚ Β' 1077) «Εξειδίκευση διαδικασιών για την ενσωμάτωση στις ΑΕΠΟ της προβλεπόμενης από τις διατάξεις της Δασικής Νομοθεσίας έγκρισης επέμβασης, για τα έργα και δραστηριότητες κατηγοριών Α και Β της ΥΑ 1958/2012 (ΦΕΚ Β'21), σύμφωνα με το άρθρο 12 του Ν. 4014/2011».
8. Την ΚΥΑ Η.Π. 15393/2332/2002 (ΦΕΚ Β' 1022) που αναφέρεται στην «κατάταξη δημόσιων και ιδιωτικών έργων και δραστηριοτήτων σε κατηγορίες σύμφωνα με το άρθρο 3 του Ν.1650/1986 όπως αντικαταστάθηκε με το άρθρο 1 του Ν.3010/2002».
9. Την ΚΥΑ 11014/703/Φ104/2003 (ΦΕΚ Β' 332) «Διαδικασία Προκαταρκτικής Περιβαλλοντικής Εκτίμησης και Αξιολόγησης (Π.Π.Ε.Α.) και Έγκρισης Περιβαλλοντικών Όρων (Ε.Π.Ο.) σύμφωνα με το άρθρο 4 του Ν. 1650/1986 όπως αντικαταστάθηκε με το άρθρο 2 του Ν.3010/2002».
10. Την ΚΥΑ 37111/2021/2003 (ΦΕΚ Β' 1391) «Καθορισμός τρόπου ενημέρωσης κοινού κατά τη διαδικασία έγκρισης περιβαλλοντικών όρων των έργων και δραστηριοτήτων».

11. Το Π.Δ. 221/2.7.98 (ΦΕΚ Α' 174) «Σύσταση Ειδικής Υπηρεσίας Περιβάλλοντος στο ΥΠΕΧΩΔΕ» όπως αυτό τροποποιήθηκε με τα Π.Δ. 269/2001 (ΦΕΚ Α' 192) και 35/2009 (ΦΕΚ Α' 51).
12. Τα υπ. αρ. 189/05.11.2009 Π.Δ. (ΦΕΚ Α' 221) και 85/21.06.2012 (ΦΕΚ Α' 141) για Καθορισμό, ίδρυση και μετονομασία Υπουργείων.
13. Το υπ. αρ. 86/21.06.2012 Π.Δ. (ΦΕΚ Α' 141) για Διορισμό Υπουργών, Αναπληρωτών Υπουργών και Υφυπουργών.
14. Τα με α.π. XI-23/29.11.11 και XII-13/20.12.11 έγγραφα του ΙCGB A.D. με τα οποία υποβλήθηκε ο φάκελος Προμελέτης Περιβαλλοντικών Επιπτώσεων του αναφερομένου στο θέμα έργου και κατατέθηκαν συμπληρωματικά αντίγραφα ΠΠΕ αντίστοιχα (α.π. Ε.Υ.ΠΕ. 205570/29.11.11, 206193/20.12.11).
15. Το με α. π. οικ. 206280/22.12.11 έγγραφο της ΕΥΠΕ με το οποίο διαβιβάστηκε από ένα τεύχος της ΠΠΕ προς τις συναρμόδιες υπηρεσίες για απόψεις.
16. Το υπ. αρ. 56/11.01.12 έγγραφο της ΙΘ' Εφορείας Προϊστορικών & Κλασικών Αρχαιοτήτων του ΥΠΠΟΤ στο οποίο δεν εκφράζεται αντίρρηση (υπό όρους γνωμοδότηση) για το προτεινόμενο έργο (α.π. ΕΥΠΕ 195316/17.01.12).
17. Το υπ. αρ. 825/19.01.12 έγγραφο της Δ/σης Χωροταξίας & Αστικού Περιβάλλοντος του ΥΠΕΚΑ στο οποίο δεν εκφράζεται αντίρρηση για το προτεινόμενο έργο (α.π. ΕΥΠΕ 195605/25.01.12).
18. Το υπ. αρ. 20/24.01.12 έγγραφο της 15<sup>ης</sup> Εφορείας Βυζαντινών Αρχαιοτήτων του ΥΠΠΟΤ, στο οποίο δεν εκφράζεται αντίρρηση για το έργο-υπό όρους γνωμοδότηση (α.π. ΕΥΠΕ 195740/30.01.12)
19. Το με α.π. 38/3552/03.02.12 έγγραφο της Δ/σης Χωροταξίας και Προστασίας Περιβάλλοντος του Υπ. Αγροτικής Ανάπτυξης & Τροφίμων, σύμφωνη γνώμη για την προτεινόμενη χάραξη (α.π. ΕΥΠΕ 195900/3.02.12, 196582/2.03.12)
20. Το με α.π. Δ3/Α/437/9.02.12 έγγραφο της Δ/σης Εγκαταστάσεων Πετρελαιοειδών του ΥΠΕΚΑ με το οποίο δεν εκφράζεται αντίρρηση για το προτεινόμενο έργο (α. π. ΕΥΠΕ 196053/13.02.12, 196261/21.02.12)
21. Το υπ. αρ. 151/13.02.12 έγγραφο της Δ/σης Αγροτικής Οικονομίας & Κτηνιατρικής της Π.Ε. Ροδόλης με συνημμένο το Νο 5/2012 Πρακτικό ΝΕΧΩΠ με το οποίο γνωμοδοτεί θετικά για το έργο.
22. Το με α.π. 10751/1.03.12 έγγραφο της Δ/σης Συντονισμού & Επιθεώρησης Δασών της Αποκεντρωμένης Διοίκησης Μακεδονίας – Θράκης με συνημμένο το υπ. αρ. 311/3.02.12 έγγραφο της Δ/σης Δασών Ροδόλης, χωρίς αντίρρηση για το προτεινόμενο έργο-υπό όρους γνωμοδότηση (α.π ΕΥΠΕ 196792/13.03.12).
23. Το υπ. αρ. 165250/750/7.03.12 έγγραφο της Δ/σης Αισθητικών Δασών, Δρυμών & Θήρας του ΥΠΕΚΑ, χωρίς αντίρρηση για το έργο (α.π. ΕΥΠΕ 196823/13.03.12)
24. Το με α.π. ΑΡΧ/Α1/Φ40/4029/225/20.02.12 έγγραφο της Δ/σης Προϊστορικών και Κλασικών Αρχαιοτήτων του ΥΠΠΟΤ, όπου δεν εκφράζεται αντίρρηση για το έργο-γνωμοδότηση υπό όρους (α.π. ΕΥΠΕ 196848/13.03.12)
25. Το με α. π. Φ.916.74/78/412092/Σ926/30.04.12 έγγραφο της Δ/σης Υποδομής του ΓΕΣ χωρίς αντίρρηση-υπό όρους γνωμοδότηση για το έργο (α.π. ΕΥΠΕ 198046/7.05.12, 196818/13.03.12, 196399/24.02.12, 196016/15.02.12, 196182/17.02.12)

26. Το με α.π. Φ.550/ΑΔ 635097/Σ.772/25.04.12 έγγραφο της Δ/σης Υποδομών (Γ2) του ΓΕΑ, χωρίς αντίρρηση για το έργο (α.π. ΕΥΠΕ 198151/10.05.12, 197514/10.04.12)
27. Το γεγονός ότι το προτεινόμενο έργο είναι εθνικής σημασίας για την ενεργειακή διασύνδεση Ελλάδας-Βουλγαρίας.

### Γνωμοδοτούμε

Θετικά - ύστερα από τη διαδικασία της Προκαταρκτικής Περιβαλλοντικής Εκτίμησης και Αξιολόγησης - ως προς την κατασκευή και λειτουργία του έργου:

ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΥΨΗΛΗΣ ΠΙΕΣΗΣ ΓΙΑ ΤΗ ΔΙΑΣΥΝΔΕΣΗ ΕΛΛΑΔΑΣ-ΒΟΥΛΓΑΡΙΑΣ & ΣΥΝΟΔΕΥΤΙΚΕΣ ΕΓΚΑΤΑΣΤΑΣΕΙΣ, όπως εμφανίζεται στην οριζοντιογραφία Ρ513-100-91-001, κλίμακας 1:50.000, της Προμελέτης Περιβαλλοντικών Επιπτώσεων (ΠΠΕ), που συνοδεύει την παρούσα γνωμοδότηση.

Το προτεινόμενο έργο αφορά στην εγκατάσταση και λειτουργία του ελληνικού τμήματος του Ελληνοβουλγαρικού αγωγού μεταφοράς φυσικού αερίου υψηλής πίεσης, διαμέτρου 28 ιντσών και μήκους 30 χλμ περίπου, από την Κομοτηνή έως τα Ελληνοβουλγαρικά σύνορα. Το συνολικό μήκος του αγωγού θα είναι 180 χλμ, από τα οποία τα 150 θα αναπτυχθούν στο Βουλγαρικό έδαφος και θα καταλήγει στην πόλη Στάρα Ζαγόρα. Στο ελληνικό έδαφος προτείνεται να κατασκευαστεί ένας μετρητικός σταθμός στην Κομοτηνή καθώς και ένα βαλβιδοστάσιο (BV1) στη θέση «Νυμφαία». Ο εν λόγω αγωγός θα έχει αρχικά δυναμικότητα 3 δ. κ.μ./έτος που μελλοντικά μπορεί να επεκταθεί στα 5 δ. κ.μ./έτος.

Κατά την παρούσα γνωμοδότηση λήφθηκαν κατ' αρχήν υπόψη τα ακόλουθα:

1. Οι γενικές και ειδικές κατευθύνσεις της χωροταξικής πολιτικής, που προκύπτουν από εγκεκριμένα χωροταξικά, ρυθμιστικά και πολεοδομικά σχέδια ή άλλα σχέδια χρήσεων γης. Σύμφωνα με τα Περιφερειακά Πλαίσια Χωροταξικού Σχεδιασμού και Αειφόρου Ανάπτυξης των Περιφερειών της χώρας, η μεταφορά και η διανομή Φυσικού Αερίου θεωρείται σημαντικός παράγοντας ανάπτυξης για όλη τη χώρα, καθιστώντας την ενεργειακό κέντρο των Βαλκανίων και της Δυτικής Ευρώπης.
2. Η περιβαλλοντική ευαισθησία της περιοχής που ενδέχεται να θιγεί από το έργο. Σύμφωνα με την προτεινόμενη χάραξη, το έργο δεν διέρχεται από περιοχές οι οποίες έχουν ενταχθεί στο δίκτυο NATURA 2000.
3. Τα χαρακτηριστικά των ενδεχόμενων σημαντικών περιβαλλοντικών επιπτώσεων όπως το μέγεθος, η πολυπλοκότητα, η ένταση και η έκτασή τους, η διάρκεια, η συχνότητα και η αναστρεψιμότητά τους. Από την εγκατάσταση του προτεινόμενου έργου αναμένεται να υπάρξουν μικρές επιπτώσεις στο φυσικό περιβάλλον κατά μήκος του αγωγού, οι οποίες είναι βραχυπρόθεσμες και αναστρέψιμες με τα κατάλληλα μέτρα αποκατάστασης. Από τη λειτουργία του ΑΦΑ αναμένονται μικρές επιπτώσεις στο περιβάλλον, δεδομένου ότι ο αγωγός θα είναι υπόγειος σε όλο του το μήκος.
4. Τα οφέλη για την εθνική οικονομία, την εθνική ασφάλεια, τη δημόσια υγεία και η εξυπηρέτηση άλλων λόγων δημοσίου συμφέροντος. Το εν λόγω έργο αποτελεί τμήμα του συστήματος αγωγών ITGI, δίνοντας τη δυνατότητα πρόσβασης της Βουλγαρίας και άλλων χωρών της ΝΑ Ευρώπης σε νέες πηγές προμήθειας φυσικού αερίου.
5. Οι θετικές επιπτώσεις στο φυσικό και ανθρωπογενές περιβάλλον σε μία ευρύτερη περιοχή από εκείνη που επηρεάζεται άμεσα από το έργο.

Επίσης η θετική γνωμοδότηση δίδεται με τους ακόλουθους όρους και προϋποθέσεις:

- α. ότι δεν έρχεται σε αντίθεση με περιορισμούς, που έχουν τεθεί στην περιοχή με ειδικές διατάξεις και που ενδεχομένως δεν επιτρέπουν την κατασκευή του υπόψη έργου
- β. ότι θα ληφθούν υπόψη οι παρατηρήσεις και υποδείξεις των αρμόδιων Αρχαιολογικών Υπηρεσιών
- γ. ότι θα ληφθούν υπόψη οι παρατηρήσεις που αναφέρονται στο έγγραφο της Δ/νσης Δασών Ροδόπης
- δ. ότι θα ληφθούν υπόψη οι παρατηρήσεις που αναφέρονται στα έγγραφα των Δ/νσεων Υποδομών του ΓΕΣ και ΓΕΑ.

Ο φορέας του έργου οφείλει στο στάδιο της έγκρισης των περιβαλλοντικών όρων να υποβάλει στην Ειδική Υπηρεσία Περιβάλλοντος (ΕΥΠΕ) του ΥΠΕΚΑ Μελέτη Περιβαλλοντικών Επιπτώσεων (ΜΠΕ), η οποία θα πρέπει να περιλαμβάνει τουλάχιστον τα εξής:

1. Περιγραφή του έργου συμπεριλαμβανομένων των εναλλακτικών λύσεων
2. Περιγραφή της υφιστάμενης κατάστασης του περιβάλλοντος με τα απαραίτητα στοιχεία και τεκμηριώσεις προκειμένου να γίνει αξιολόγηση και εκτίμηση των κυριότερων άμεσων και έμμεσων περιβαλλοντικών επιπτώσεων του έργου:
  - στον άνθρωπο, στην πανίδα και στην χλωρίδα
  - στο έδαφος, στα νερά, στον αέρα, στο κλίμα και στο τοπίο
  - στα υλικά αγαθά και στην πολιτιστική κληρονομιά
  - στην αλληλεπίδραση μεταξύ των παραγόντων που αναφέρονται στις προηγούμενες περιπτώσεις
3. Περιγραφή των μέτρων που προβλέπονται να ληφθούν προκειμένου να αποφευχθούν, να μειωθούν και εφόσον είναι δυνατόν να επανορθωθούν σημαντικές δυσμενείς επιπτώσεις στο περιβάλλον.
4. Να περιγράφονται οι τρόποι αποκατάστασης των χώρων επέμβασης (εκσκαφές θεμελιώσεων, τυχόν διάνοιξη οδών προσπέλασης κ.λπ.).
5. Να εξερευνηθούν και να αναφέρονται οι χώροι απόθεσης πλεοναζόντων υλικών και παραπροϊόντων εκσκαφής, για τους οποίους θα έχουν εξασφαλιστεί οι απαραίτητες άδειες.
6. Συνοπτική περιγραφή των κύριων εναλλακτικών λύσεων που μελετά ο κύριος του έργου και υπόδειξη των κύριων λόγων της επιλογής του, λαμβανομένων υπόψη των επιπτώσεων τους στο περιβάλλον.
7. Απλή (μη τεχνική) περίληψη των πληροφοριών που αναφέρονται στις προηγούμενες παραγράφους.
8. Τα απαιτούμενα δικαιολογητικά της παρ. 1 του άρθρου 2 της ΥΑ 15277/2012 (ΦΕΚ Β' 1077).

Επίσης ο φάκελος της ΜΠΕ θα πρέπει να συνοδεύεται από την παρούσα θετική γνωμοδότηση (ΠΠΕΑ) του Γενικού Δ/ντή Περ/ντος του ΥΠΕΚΑ μαζί με αντίγραφο των θεωρημένων από την ΕΥΠΕ του ΥΠΕΚΑ τοπογραφικών σχεδίων από όπου θα φαίνεται η προεπιλεγείσα όδευση του έργου.

Όλα τα αντίγραφα της ΜΠΕ θα πρέπει να είναι υπογεγραμμένα και σφραγισμένα από τον μελετητή και τον φορέα του έργου. Επίσης πρέπει να συνοδεύονται από υπεύθυνη δήλωση του μελετητή που θα αναφέρει ότι είναι κάτοχος Μελετητικού Πτυχίου της κατηγορίας 27, με ημερομηνία κτήσης και διάρκεια ισχύος.

Τα κείμενα και οι χάρτες της ΜΠΕ υποβάλλονται και σε ηλεκτρονική μορφή.

Η παρούσα αποτελεί Προκαταρκτική Περιβαλλοντική Εκτίμηση και Αξιολόγηση της προγραμματιζόμενης δραστηριότητας και συνίσταται σε γνωμοδότηση ως προς τη θέση, το



μέγεθος, το είδος, την εφαρμοζόμενη τεχνολογία, τα γενικά τεχνικά χαρακτηριστικά, τη χρήση των φυσικών πόρων, τη συσσωρευτική δράση με άλλα έργα, την παραγωγή αποβλήτων, τη ρύπανση και τις οχλήσεις, καθώς και τον κίνδυνο ατυχημάτων ιδίως από τη χρήση ουσιών και τεχνολογίας και δεν υποκαθιστά πιθανές απαιτούμενες άδειες και εγκρίσεις από άλλους φορείς (Δασαρχείο, Αρχαιολογική Υπηρεσία, κλπ).

Η οριστική και δεσμευτική άποψη της Διοίκησης, επί των προαναφερόμενων και συναφών θεμάτων, θα δοθεί με την αξιολόγηση της ΜΠΕ και την Απόφαση Έγκρισης Περιβαλλοντικών Όρων με την οποία μπορεί να επιβάλλει προϋποθέσεις, όρους, περιορισμούς και διαφοροποιήσεις για την πραγματοποίηση του έργου ή της δραστηριότητας ή και να αποφασίσει τη μη υλοποίησή του, σύμφωνα με τις εκάστοτε ισχύουσες διατάξεις.

Η παρούσα Γνωμοδότηση κοινοποιείται στο Περιφερειακό Συμβούλιο Ανατολικής Μακεδονίας-Θράκης, συνοδευόμενη από ένα αντίγραφο του φακέλου Π.Π.Ε. προκειμένου να δημοσιοποιηθεί σύμφωνα με τα αναφερόμενα στην ΚΥΑ 37111/2021/2003 (ΦΕΚ Β' 1391). Η δαπάνη δημοσιοποίησης βαρύνει το φορέα του έργου.

**Ο ΓΕΝΙΚΟΣ ΔΙΕΥΘΥΝΤΗΣ ΠΕΡΙΒΑΛΛΟΝΤΟΣ ΥΠΕΚΑ**

**ΕΛ. ΤΗΛΙΓΑΔΑΣ**



**ΑΚΡΙΒΕΣ ΑΝΤΙΓΡΑΦΟ**

**Ε. ΑΛΕΥΡΑ**

**ΠΙΝΑΚΑΣ ΑΠΟΔΕΚΤΩΝ**

1. ICGB-IGI POSEIDON  
Μαρίνου Αντύπα 92, 141 21 Αθήνα  
(συν. 1 αντ. ΠΠΕ)
2. ΥΠΕΚΑ  
α) Δ/νση Χωροταξίας  
Αμαλιάδος 17, 115 23 Αθήνα  
β) Δ/νση Αισθητικών Δασών, Δρυμών & Θήρας  
Χαλκοκονδύλη 31, 10164 Αθήνα  
γ) Δ/νση Εγκαταστάσεων Πετρελαιοειδών  
Μεσογείων 119, 101 92 Αθήνα
3. Υπ. Αγροτικής Ανάπτυξης & Τροφίμων  
Δ/νση Χωροταξίας & Προστ. Περ/ντος  
Πατησίων 207 & Σκαλιστήρη 19, 10164 Αθήνα
4. Υπ. Παιδείας, Θρησκευμάτων, Πολιτισμού & Αθλητισμού  
α) Δ/νση Προϊστ.& Κλασ. Αρχαιοτήτων  
β) Δ/νση Βυζ/νων και Μεταβυζ/νων Αρχαιοτήτων  
Μπουμπουλίνας 20, 10682 Αθήνα  
γ) ΙΘ' ΕΠΚΑ, Α. Συμεωνίδη 4, 691 00 Κομοτηνή  
δ) 15η ΕΒΑ, Σωκράτους 11, 691 00 Κομοτηνή
5. Υπ. Αγροτικής Ανάπτυξης & Τροφίμων  
Δ/νση Χωροταξίας & Προστ. Περ/ντος  
Πατησίων 207 & Σκαλιστήρη 19, 10164 Αθήνα
6. ΥΠΕΘΑ/ΓΔΟΣΥ/ΔΙΣΤΥ/ΤΥΠΟ  
Μεσογείων 227-231, 154 51 Αθήνα
7. Περιφερειακό Συμβούλιο  
Περιφέρειας Ανατολικής Μακεδονίας- Θράκης  
Κακουλίδου 1, 691 00 Κομοτηνή  
(συν. 1 αντ. ΠΠΕ)
9. Δ/νση Δασών Π.Ε. Ροδόπης  
3ο χλμ. Ε.Ο. Κομοτηνής - Αλεξανδρούπολης  
691 00 Κομοτηνή
10. Περιφερειακή Ενότητα Ροδόπης  
Δ/νση Αγροτικής Οικονομίας  
Δημοκρατίας 1, 691 00 Κομοτηνή

**ΕΣΩΤ. ΔΙΑΝΟΜΗ**

1. ΕΥΠΕ (συν. 1 αντ. ΠΠΕ)
2. Χρον. Αρχείο
3. Τμήμα Α'
4. Κ. Γιαβής

ΑΝΑΡΤΗΤΕΑ ΠΡΑΞΗ



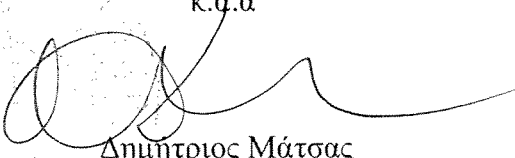
Αναφορικά με την προτεινόμενη προκαταρκτική όδευση του αγωγού ΦΑ η Εφορεία μας έχει αναλυτικά εκθέσει τις απόψεις της με το ανωτέρω σχετικά 3 έγγραφο της οι οποίες συμπεριλαμβάνονται και στο ανωτέρω σχετικά 2 έγγραφο του ΥΠΠΟΤ.

Ως εκ τούτου η Εφορεία μας δεν έχει κατ' αρχήν αντίρρηση για την υλοποίηση του ως άνω έργου διατηρώντας ως κύριο άξονα την προκαταρκτική όδευση ΦΑ, σύμφωνα με τα συνημμένα τοπογραφικά. Ωστόσο, καθώς στο τμήμα 17+ 00 μέχρι και 31+00 υπάρχει σοβαρή πιθανότητα εντοπισμού και άλλων μη καταγεγραμμένων αρχαιοτήτων, η έγκριση για την εκτέλεση του έργου χορηγείται με τους εξής όρους:

α) Όλες οι εκσκαφικές εργασίες που θα γίνουν στο πλαίσιο εκτέλεσης του έργου θα πραγματοποιηθούν υπό την άμεση και συνεχή επίβλεψη της Εφορείας μας, με την προϋπόθεση ότι η εταιρεία θα προχωρήσει στην πρόσληψη αρχαιολόγου, ελλείψει μόνιμου προσωπικού στην ΙΘ'ΕΠΚΑ, η δαπάνη του οποίου θα βαρύνει τον κύριο του έργου.

β) Σε περίπτωση αποκάλυψης αρχαιοτήτων κατά τη διάρκεια εκτέλεσης εκσκαφικών εργασιών, οι εργασίες θα διακοπούν άμεσα και θα ακολουθήσει ανασκαφική έρευνα, από τα αποτελέσματα της οποίας θα εξαρτηθεί η συνέχιση ή μη των εργασιών. Τη δαπάνη της ανασκαφικής έρευνας, σύμφωνα με το άρθρο 37 του Ν.3028/02, θα αναλάβει ο φορέας του έργου.

**Συνημμένα:** Η ΠΠΕ του έργου του θέματος (1 Τεύχος) με συμπληρωματικά στοιχεία (με επιστροφή).

Ο Προϊστάμενος της Εφορείας  
κ.α.α  
  
Δημήτριος Μάτσας  
Αρχαιολόγος με βαθμό Β'

Πίνακας Αποδεκτών κοινοποίησης

- 1) 15<sup>η</sup> Ε.Β.Α
- 2) ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΕΝΕΡΓΕΙΑΣ & ΚΛΙΜΑΤΙΚΗΣ  
ΑΛΛΑΓΗΣ.  
Γενική Δ/νση Περιβάλλοντος  
ΕΥΠΕ  
(Ειδική Υπηρεσία Περιβάλλοντος)  
Τμήμα Β'  
Λ. Αλεξάνδρας 11, 114 73 ΑΘΗΝΑ
- 3) C&M Engineering Α.Ε. Πρατινού 99 116 34 Αθήνα

✓



ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΕΝΕΡΓΕΙΑΣ & ΚΛΙΜΑΤΟΣ  
ΕΙΔΙΚΗ ΥΠΗΡΕΣΙΑ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΑΡΙΘΜ. ΠΡΩΤ. 195605  
ΗΜΕΡΟΜΗΝΙΑ 28.1.12

A  
Γιαβύ 25.01.12  
26/1/12

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΕΝΕΡΓΕΙΑΣ ΚΑΙ  
ΚΛΙΜΑΤΙΚΗΣ ΑΛΛΑΓΗΣ  
Γεν. Γραμματεία Χωροταξίας  
και Αστικού Περιβάλλοντος  
Δ/νση : Χωροταξίας  
Τμήμα : Γ'

Αθήνα, 19 / 1 / 2012  
Αρ. Πρωτ : 825

ΠΡΟΣ:

Ε.Υ.Π.Ε.  
Λεωφ. Αλεξάνδρας  
11473 Αθήνα

ΚΟΙΝ:

Ταχ. Δ/νση : Αμαλιάδος 17  
Ταχ. Κώδικας : 11523  
TELEFAX : 210-64 58 690  
Πληροφορίες : Ι. Ράμμος  
Τηλέφωνο : 213 1515369

**ΘΕΜΑ:** ΠΠΕΑ του έργου «Αγωγός Φυσικού Αερίου Διασύνδεσης Ελλάδας-Βουλγαρίας και συνοδευτικές εγκαταστάσεις. »

**ΣΧΕΤ:** Το με α.π. οικ. 206280/22.12.11 έγγραφο της ΕΥΠΕ (α.π. ΥΠΕΚΑ 825/9.1.12)

Σε συνέχεια του παραπάνω σχετικού και περιοριζόμενοι σε θέματα αρμοδιότητας της Διεύθυνσής μας, σας γνωρίζουμε ότι το Περιφερειακό Πλαίσιο Χωροταξικού Σχεδιασμού και Αειφόρου Ανάπτυξης Περιφέρειας Ανατολικής Μακεδονίας - Θράκης (αρ.ΥΑ 29310/21.7.2003, ΦΕΚ 1471Β9.10.2003), θεωρεί ότι η Περιφέρεια, με βάση τους ενεργειακούς της πόρους, αλλά και την ευκαιρία διέλευσης του αγωγού Φυσικού Αερίου, εξελίσσεται σε αναδυόμενο ενεργειακό κέντρο της Χώρας.

Το αιτούμενο έργο, θα μεταφέρει φυσικό αέριο μέσω των συνόρων Ελλάδας Βουλγαρίας, διασυνδέοντας τον υφιστάμενο σταθμό Φυσικού Αερίου στην Κομοτηνή, με υφιστάμενο Αγωγό Φυσικού Αερίου που βρίσκεται στην Βουλγαρία, συμβάλλοντας έτσι, στην περαιτέρω ενεργειακή αναβάθμιση της Περιφέρειας.

Για τον λόγο αυτό σας γνωρίζουμε ότι δεν έχουμε αντίρρηση για την υλοποίησή του.

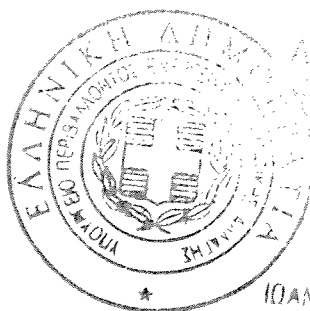
**Συν.** 1 Φάκελος

Ε. Δ. :

1. Δ/νση Χωροταξίας
2. Χρον. Αρχείο
3. Ι. Ράμμος

Η ΔΙΕΥΘΥΝΤΡΙΑ

ΠΟΛΥΞΕΝΗ ΖΕΪΚΟΥ



ΑΚΤΩΣ ΔΕΛΤΑ  
21.1.2012  
ΙΟΑΝΝΗΣ ΑΝΤΩΝΙΟΥ



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ ΠΟΛΙΤΙΣΜΟΥ  
15<sup>η</sup> ΕΦΟΡΕΙΑ ΒΥΖΑΝΤΙΝΩΝ ΑΡΧΑΙΟΤΗΤΩΝ

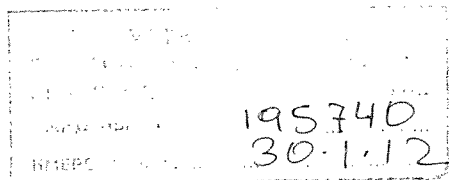
Ταχ. Δ/ση : Σωκράτους 11  
Τ.Κ. : 691 00 Κομοτηνή  
Πληροφορίες: Ζ.Μιλτσακάκη  
Τηλέφωνο : 25310-35870  
Fax : 25310-29492  
E-mail : l5eba@culture.gr

Βαθμός Ασφαλείας:

Βαθμός προτεραιότητας:

Κομοτηνή, 24 Ιανουαρίου 2012

Αριθ. Πρωτ.: 20



ΠΡΟΣ

ΥΠΟΥΡΓΕΙΟ ΠΟΛΙΤΙΣΜΟΥ ΚΑΙ  
ΤΟΥΡΙΣΜΟΥ  
ΓΕΝΙΚΗ ΔΙΕΥΘΥΝΣΗ  
ΑΡΧΑΙΟΤΗΤΩΝ ΚΑΙ  
ΠΟΛΙΤΙΣΤΙΚΗΣ ΚΛΗΡΟΝΟΜΙΑΣ  
ΔΙΕΥΘΥΝΣΗ ΠΡΟΪΣΤΟΡΙΚΩΝ ΚΑΙ  
ΚΛΑΣΙΚΩΝ ΑΡΧΑΙΟΤΗΤΩΝ  
ΤΜΗΜΑ ΑΡΧΑΙΟΛΟΓΙΚΩΝ  
ΧΩΡΩΝ, ΜΝΗΜΕΙΩΝ ΚΑΙ  
ΑΡΧΑΙΟΓΝΩΣΤΙΚΗΣ ΕΡΕΥΝΑΣ  
ΓΡΑΦΕΙΟ ΣΥΝΤΟΝΙΣΜΟΥ ΚΑΙ  
ΠΑΡΑΚΟΛΟΥΘΗΣΗΣ  
ΑΡΧΑΙΟΛΟΓΙΚΩΝ ΕΡΓΑΣΙΩΝ ΣΤΟ  
ΠΛΑΙΣΙΟ ΜΕΓΑΛΩΝ ΕΡΓΩΝ  
Μπουμπουλίνας 20  
10682 Αθήνα

ΚΟΙΝ

Πίνακας Αποδεκτών

- ΘΕΜΑ : Γνωμοδότηση επί της Προμελέτης Περιβαλλοντικών Επιπτώσεων του έργου : «Αγωγός Φυσικού Αερίου Διασύνδεσης Ελλάδας – Βουλγαρίας & Συνοδευτικές Εγκαταστάσεις».
- ΣΧΕΤ. : 1) Το αριθ. πρωτ. 2529/29-9-2011 έγγραφό μας στην C&M Engineering A.E.  
2) Το υπ.αριθ. πρωτ. 2807/19-10-2011 έγγραφό μας στην Υπηρεσία σας  
3) Το οικ. 206280/22-12-2011 έγγραφο της Γενικής Διεύθυνσης Περιβάλλοντος ΕΥΠΕ (Τμήμα Α')

Σε συνέχεια των παραπάνω σχετικών (1-2) και σε απάντηση του σχετικού (3) με το οποίο μας ζητήθηκε να γνωμοδοτήσουμε επί της Προμελέτης Περιβαλλοντικών Επιπτώσεων του έργου του θέματος, σας αναφέρουμε τα εξής: σύμφωνα με τα υποβληθέντα στοιχεία το έργο συνίσταται από τον Αγωγό Μεταφοράς Φυσικού Αερίου και τις συνοδές του εγκαταστάσεις (Βανοστάσια, Σταθμοί αποστολής-παραλαβής ξέστρου, Μετρητικοί και ρυθμιστικοί σταθμοί κ.λ.π). Ο ανωτέρω Αγωγός Μεταφοράς Φυσικού Αερίου, υψηλής πίεσης, θα έχει αφετηρία στη βιομηχανική περιοχή της Κομοτηνής και αφού διασχίσει τα ελληνο-βουλγαρικά σύνορα θα τερματίσει κοντά στην πόλη Στάρα Ζαγόρα, στη Βουλγαρία. Το συνολικό μήκος του Αγωγού θα είναι περί τα 180 χλμ. (30 χλμ στην Ελλάδα και 150 χλμ στη Βουλγαρία).

Σε συνέχεια των ανωτέρω, σας γνωρίζουμε ότι η εν λόγω περιοχή όπως υποδεικνύεται από την προτεινόμενη και τις εναλλακτικές χαράξεις (ALT1, ALT2) εντός της ελληνικής επικράτειας βρίσκεται κοντά στα όρια του κηρυγμένου αρχαιολογικού χώρου του Παπικίου Όρους (ΥΑ ΥΠΠΟ/ΑΡΧ/Β1/Φ37/15352/389πε/9-2-1987 (ΦΕΚ 284/Β/9-6-1987). Ωστόσο, δεν έχουμε αντίρρηση για την υλοποίηση του εν λόγω έργου με τους εξής όρους :

1. Να ακολουθηθεί η προτεινόμενη χάραξη (REC).
2. Μετά την ολοκλήρωση της διαδικασίας έγκρισης του έργου και προ της έναρξης του ο υπεύθυνος του έργου υποχρεούται να ειδοποιήσει εγκαίρως (τουλάχιστον 15 ημέρες νωρίτερα) και εγγράφως την Εφορεία μας.
3. Όλες οι εκσκαφικές εργασίες θα πραγματοποιηθούν ευθύς εξ αρχής υπό τη συνεχή επίβλεψη αρχαιολόγου που θα ορίσει η Εφορεία μας. Η δαπάνη αμοιβής και πρόσληψης θα βαρύνει τον προϋπολογισμό του έργου.
4. Σε περίπτωση που κατά την εκτέλεση του έργου εντοπισθούν ή αποκαλυφθούν αρχαιότητες οι εργασίες θα διακοπούν αμέσως, προκειμένου να διεξαχθεί σωστική ανασκαφική έρευνα, από τα αποτελέσματα της οποίας θα εξαρτηθεί η περαιτέρω πορεία του έργου. Η συνολική δαπάνη της ανασκαφής (αμοιβή, πρόσληψη εξειδικευμένου προσωπικού ανασκαφών που θα προσληφθεί καθ' υπόδειξη της Εφορείας μας- σχεδιαστική και φωτογραφική



τεκμηρίωση των αρχαιοτήτων που θα αποκαλυφθούν, καθαρισμός, συντήρηση, καταγραφή, σχεδίαση, φωτογράφιση και αποθήκευση των κινητών ευρημάτων), καθώς και το κόστος μελέτης και δημοσίευσης θα βαρύνουν τον προϋπολογισμό του έργου, σύμφωνα με τις διατάξεις του άρθρου 37 του νόμου 3028/2002 «Για προστασία των αρχαιοτήτων και εν γένει της Πολιτιστικής Κληρονομιάς».

Συν. : ένα (1) τεύχος της Προμελέτης Περιβαλλοντικών Επιπτώσεων



Π.Α.

1) Διεύθυνση Βυζαντινών και  
Μεταβυζαντινών Αρχαιοτήτων  
Μπουμπουλίνας 20-22, 106 82 Αθήνα

2) Γενική Διεύθυνση Αρχαιοτήτων και  
Πολιτιστικής Κληρονομιάς  
Μπουμπουλίνας 20-22, 106 82 Αθήνα

3)ΙΘ' Εφορεία Προϊστορικών και  
Κλασσικών Αρχαιοτήτων  
Αρχαιολογικό Μουσείο  
691 00 Κομοτηνή

4)Υπουργείο Περιβάλλοντος,  
Ενέργειας & Κλιματικής Αλλαγής  
Γενική Διεύθυνση Περιβάλλοντος  
ΕΥΠΕ  
(Ειδική Υπηρεσία Περιβάλλοντος)  
Τμήμα Α'  
Λ.Αλεξάνδρας 11  
114 73 Αθήνα



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ ΑΓΡΟΤΙΚΗΣ  
ΑΝΑΠΤΥΞΗΣ & ΤΡΟΦΙΜΩΝ  
ΓΕΝ. Δ/ΝΣΗ ΓΕΩΡΓΙΚΩΝ  
ΕΦΑΡΜΟΓΩΝ & ΕΡΕΥΝΑΣ  
Δ/ΝΣΗ ΧΩΡΟΤΑΞΙΑΣ &  
ΠΡΟΣΤΑΣΙΑΣ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΤΜΗΜΑ Γ'

Ταχ. Δ/ση: Πατησίων 207 & Σκαλιστήρη 19  
112 53 Αθήνα

Πληροφορίες: Κ. Παπαδόπουλος  
Τηλ.: 210 2128164  
Fax: 210 8663496

Αθήνα, 03-02-2012  
Αρ.Πρωτ.: 38/3552

✓  
196582  
2.3.12  
ΠΡΟΣ  
Υπουργείο Περιβάλλοντος  
Ενέργειας & Κλιματικής Αλλαγής  
Γενική Δ/ση Περιβάλλοντος  
Ε Υ Π Ε [Ειδική Υπηρεσία  
Περιβάλλοντος]  
Τμήμα Α'  
Λ. Αλεξάνδρας 11  
11473 ΑΘΗΝΑ

5/3/12  
A  
02.03.12  
ΘΕΜΑ: Απόψεις επί της Π.Π.Ε για το έργο: «Αγωγός Φυσικού Αερίου (ΑΦΑ)  
διασύνδεσης Ελλάδας – Βουλγαρίας και συνοδευτικές εγκαταστάσεις», Περιφερ.  
Ενότητα Ροδόπης.  
ΣΧΕΤ: Το υπ. αριθμ. 206280/22.12.11 έγγραφό σας.

Το εν λόγω έργο αφορά στην κατασκευή υπόγειου αγωγού φυσικού αερίου ως τμήμα του Διασυνδετήριου Αγωγού Φυσικού Αερίου μεταξύ της Ελλάδας και της Βουλγαρίας (IGB Project) και σύμφωνα με το άρθρο 176 του Ν. 4001/2011 το έργο είναι εθνικής σημασίας και δημόσιας ωφέλειας. Ο υπό εξέταση αγωγός θα ξεκινά από τη Βιομηχανική περιοχή Κομοτηνής και θα καταλήγει στο σημείο σύνδεσης του ελληνικού τμήματος του αγωγού με το βουλγαρικό τμήμα του στα σύνορα Ελλάδας – Βουλγαρίας. Εξετάζονται, μέσω της Προμελέτης, τρεις (3) εναλλακτικές χαράξεις διέλευσης του αγωγού εκ των οποίων όλες στην αρχική τους διαδρομή διέρχονται από γεωργικές εκτάσεις μονοετών καλλιεργειών (βαμβάκι, σιτάρι). Παρ' όλα αυτά δε θα υπάρξει απώλεια γεωργικής γης, δεδομένου ότι ο αγωγός είναι υπόγειος. Επιπλέον για την επιλογή της βέλτιστης χάραξης του αγωγού, λήφθηκε υπόψη, σύμφωνα με τη Μελέτη, η διασταύρωσή του με ποταμούς, ρέματα, κανάλια άρδευσης κλπ προκειμένου να μην θιγούν τα εν λόγω δίκτυα.

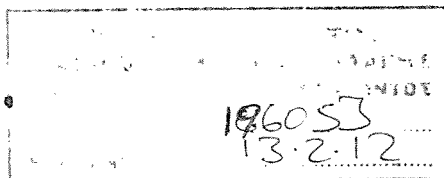
Κατόπιν των ανωτέρω η Υπηρεσία μας συμφωνεί με την προτεινόμενη χάραξη του έργου καθώς και με την εν γένει κατασκευή του, με την προϋπόθεση να ληφθεί υπόψη για τη χωροθέτηση του έργου και η γνωμοδότηση της αρμόδιας Επιτροπής Χωροταξίας και Περιβάλλοντος ΠΕ Ροδόπης (ΝΕΧΩΠ). Τις τελικές μας απόψεις σχετικά με τους όρους και τις προϋποθέσεις κατασκευής του έργου, θα εκφράσουμε με την υποβολή της Μελέτης Περιβαλλοντικών Επιπτώσεων.

**Συνημμένα: Π.Π.Ε.**

**Η ΠΡΟΪΣΤΑΜΕΝΗ ΤΗΣ ΔΙΕΥΘΥΝΣΗΣ**

**M. NANOY**





ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΕΝΕΡΓΕΙΑΣ & ΚΛΙΜΑΤΙΚΗΣ ΑΛΛΑΓΗΣ

ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑΣ ΕΝΕΡΓΕΙΑΣ & ΚΛΙΜΑΤΙΚΗΣ ΑΛΛΑΓΗΣ

ΓΕΝΙΚΗ Δ/ΝΣΗ ΕΝΕΡΓΕΙΑΣ

Δ/ΝΣΗ ΕΓΚΑΤΑΣΤΑΣΕΩΝ ΠΕΤΡΕΛΑΙΟΕΙΔΩΝ

Τμήμα Α'

Αθήνα, 09 Φεβρουαρίου 2012  
Αρ. Πρωτ.: Δ3/Α/437

Ταχ. Δ/ση : Μεσογείων 119  
Ταχ. Κώδικας : 101 92  
Πληροφορίες : Σ. Τσιαντούλας  
Τηλ. : 210-6969409  
Fax : 210-6969402  
E-mail : [egatpetrel@eka.ypeka.gr](mailto:egatpetrel@eka.ypeka.gr)

16/2/12  
ΠΡΟΣ: Υπουργείο Περιβάλλοντος  
Ενέργειας και Κλιματικής  
Αλλαγής  
Γεν. Δ/ση Περιβάλλοντος  
ΕΥΠΕ - ΤΜΗΜΑ Α'  
Λ. Αλεξάνδρας 11  
114 73 ΑΘΗΝΑ

ΘΕΜΑ: Απόψεις για την Προμελέτη Περιβαλλοντικών Επιπτώσεων του έργου:  
«Αγωγός Φυσικού Αερίου (ΑΦΑ) Διασύνδεσης Ελλάδας - Βουλγαρίας &  
Συνοδευτικές Εγκαταστάσεις».

ΣΧΕΤ: Το οικ.206280/22-12-2011 έγγραφό σας (Α.Π. ΥΠΕΚΑ 437/10.01.2012)

Σε απάντηση του ανωτέρω σχετικού εγγράφου σας, στα πλαίσια των αρμοδιοτήτων μας και σύμφωνα με τις διατάξεις της παρ. 2 του άρθρου 3 της ΚΥΑ 11014/703/Φ.104/14.03.2003 (ΦΕΚ 332/Β/20.03.2003), σας γνωστοποιούμε ότι δεν έχουμε αντίρρηση για την προώθηση της διαδικασίας έγκρισης της Προκαταρκτικής Περιβαλλοντικής Εκτίμησης και Αξιολόγησης του έργου, βάσει της εν θέματι Προμελέτης Περιβαλλοντικών Επιπτώσεων, υπό την προϋπόθεση ότι θα τηρηθούν οι νόμιμες διαδικασίες και θα εκδοθούν οι απαραίτητες εγκρίσεις για την κατασκευή του.

Η Προϊσταμένη της Δ/νσης

Καλή Περδίου

Εσωτερική Διανομή:  
1. Δ3/Α (3)Ν



ΑΚΡΙΒΕΣ ΑΝΤΙΓΡΑΦΟ  
Η ΠΡΟΪΣΤΑΜΕΝΗ ΤΗΣ ΓΡΑΜΜΑΤΕΙΑΣ

Μ. ΜΑΣΤΟΡΑΝΤΩΝΑΚΗ

**ΠΡΟΣ :** ΥΠΕΘΑ/ΓΔΟΣΥ/ΔΙΣΤΥ/ΤΥΠΟ

ΓΕΝΙΚΟ ΕΠΙΤΕΛΕΙΟ ΕΘΝΙΚΗΣ ΑΜΥΝΑΣ  
Γ' ΚΛΑΔΟΣ/Γ2  
ΤΜΗΜΑ ΕΘΝΙΚΗΣ ΥΠΟΔΟΜΗΣ  
ΓΡΑΦΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
Τηλ. : 210-6572233

**ΚΟΙΝ :** ΓΕΕΘΑ/Γ2/ ΓΡ. ΠΕΡΙΒΑΛ.  
ΥΠΕΚΑ-ΓΕΝ. ΔΝΣΗ ΠΕΡΙΒΑΛ.  
ΕΥΠΕ-ΤΜ Α'  
Λ. ΑΛΕΞΑΝΔΡΑΣ 11-ΤΚ 11473  
ΥΠΟΨΗ Κου Γιαβή

Φαξ :  
Φ.900/2 /166949  
Σ.1 559  
Αθήνα, 8 Φεβ 2012  
Συνημμένα : α) Ενα (1) τευχος Προμελέτης  
β) Ενα CD

**ΘΕΜΑ :** Διαβίβαση Προμελέτης Περιβαλλοντικών επιπτώσεων του έργου : "ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ (ΑΦΑ) ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ-ΒΟΥΛΓΑΡΙΑΣ & ΣΥΝΟΔΕΥΤΙΚΕΣ ΕΓΚΑΤΑΣΤΑΣΕΙΣ"

**ΣΧΕΤ :**

1. Διαβιβάζονται τα συνημμένα που αφορούν στη μελέτη θέματος λόγω αρμοδιότητας και παρακαλούμε για τις δικές σας ενέργειες.

2. Προς ΥΠΕΚΑ προς το οποίο κοινοποιείται το παρόν, γνωρίζεται ότι αρμόδια Διεύθυνση αλληλογραφίας σχετικών θεμάτων στο ΥΠ.ΕΘ.Α είναι η ΥΠ.ΕΘ.Α/ΓΔΟΣΥ/ΔΙΣΤΥ (Υπ'όψη Επγού Γιακουμάκη) τηλ 210-6598554/8596/8587.

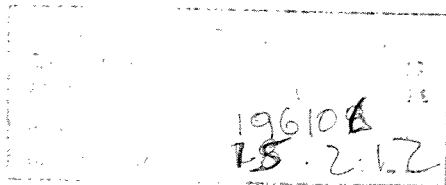


Ακριβές Αντίγραφο

Αντιπλοίαρχος (Ο) Ν. Καλιτσούνακης ΠΝ

Ταξίαρχος (Μ) Γεώργιος Οικονόμου  
Διευθυντής Γ2/ΓΕΕΘΑ

3 16/2/12  
150212





ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ ΠΟΛΙΤΙΣΜΟΥ ΚΑΙ ΤΟΥΡΙΣΜΟΥ  
ΓΕΝΙΚΗ ΔΙΕΥΘΥΝΣΗ ΑΡΧΑΙΟΤΗΤΩΝ & ΠΟΛΙΤΙΣΤΙΚΗΣ  
ΚΛΗΡΟΝΟΜΙΑΣ  
ΔΙΕΥΘΥΝΣΗ ΠΡΟΪΣΤΟΡΙΚΩΝ &  
ΚΛΑΣΙΚΩΝ ΑΡΧΑΙΟΤΗΤΩΝ  
ΤΜΗΜΑ ΑΡΧΑΙΟΛΟΓΙΚΩΝ ΧΩΡΩΝ, ΜΝΗΜΕΙΩΝ &  
ΑΡΧΑΙΟΓΝΩΣΤΙΚΗΣ ΕΡΕΥΝΑΣ

ΓΡΑΦΕΙΟ ΣΥΝΤΟΝΙΣΜΟΥ & ΠΑΡΑΚΟΛΟΥΘΗΣΗΣ  
ΑΡΧΑΙΟΛΟΓΙΚΩΝ ΕΡΓΑΣΙΩΝ  
ΣΤΟ ΠΛΑΙΣΙΟ ΜΕΓΑΛΩΝ ΕΡΓΩΝ

Διεύθυνση : Μπουμπουλίνας 20, 106 82 Αθήνα  
Πληροφορίες : Α. Σαλίχου  
Τηλ. : 210-8201 840, Τηλ/τυπία : 210-8201 417  
Ηλεκτρ. Δ/νση : [dpkar@culture.gr](mailto:dpkar@culture.gr)

Αρ. Πρωτ.:  
ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/4029/225

ΠΡΟΣ: Το Υ.Π.Ε.Κ.Α.  
ΕΥΠΕ/ Τμήμα Α'  
Λ. Αλεξάνδρας 11  
114 73 Αθήνα

ΚΟΙΝ.: 1. Γ.Δ.Α.Π.Κ.  
2. Δ.Β.Μ.Α.  
3. ΙΘ' Ε.Π.Κ.Α.  
4. 15<sup>η</sup> Ε.Β.Α.

**ΘΕΜΑ:** Προμελέτη Περιβαλλοντικών Επιπτώσεων (Π.Π.Ε.) του έργου «Αγωγός Φυσικού Αερίου (ΑΦΑ) Διασύνδεσης Ελλάδας Βουλγαρίας και Συνοδευτικές Εγκαταστάσεις».

**ΣΧΕΤ.:** 1. Το υπ' αρ. ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/108145/4643/21-11-2011 έγγραφο.  
2. Το υπ' αρ. οικ.206280/22-12-2011 έγγραφο του Υ.Π.Ε.Κ.Α.  
3. Το υπ' αρ. 56/11-01-2012 έγγραφο της ΙΘ' Ε.Π.Κ.Α.  
4. Το υπ' αρ. 20/24-01-2012 έγγραφο της 15<sup>ης</sup> Ε.Β.Α.

Σε συνέχεια των παραπάνω σχετικών που αφορούν στο θέμα, σας γνωρίζουμε ότι, από πλευράς της κείμενης αρχαιολογικής Νομοθεσίας, δεν υπάρχει αντίρρηση για την υλοποίηση του έργου «Αγωγός Φυσικού Αερίου (ΑΦΑ) Διασύνδεσης Ελλάδας Βουλγαρίας και Συνοδευτικές Εγκαταστάσεις», σύμφωνα με την υποβληθείσα Προμελέτη Περιβαλλοντικών Επιπτώσεων (Π.Π.Ε.), με την προϋπόθεση να τηρηθούν οι ακόλουθοι όροι:

1. Θα ληφθούν υπ' όψη οι διατάξεις του Ν. 3028/2002 (ΦΕΚ 153/Α/28-6-2002) «Για την Προστασία των Αρχαιοτήτων και εν γένει της Πολιτιστικής Κληρονομιάς».
2. Θα ακολουθηθεί η προτεινόμενη χάραξη (REC).
3. Οι εργασίες θα γίνουν υπό την άμεση και συνεχή επίβλεψη των συναρμοδίων ΙΘ' Ε.Π.Κ.Α. και 15<sup>η</sup> Ε.Β.Α., οι οποίες θα πρέπει να ειδοποιηθούν εγκαίρως, τουλάχιστον δέκα πέντε (15) ημέρες πριν την έναρξη αυτών, και εγγράφως για τον σκοπό αυτό. Η ανωτέρω υποχρέωση ισχύει και για περιπτώσεις επανάληψης των εργασιών μετά από διακοπή.
4. Θα υπογραφεί Μνημόνιο Συναντίληψης και Συνεργασίας μεταξύ του ΥΠ.ΠΟ.Τ. και του Κυρίου του Έργου.
5. Σε περίπτωση ανεύρεσης αρχαιοτήτων, οι εργασίες θα διακοπούν και θα ακολουθήσει σωστική ανασκαφική έρευνα, από τα αποτελέσματα της οποίας θα εξαρτηθεί η περαιτέρω



πορεία του έργου.

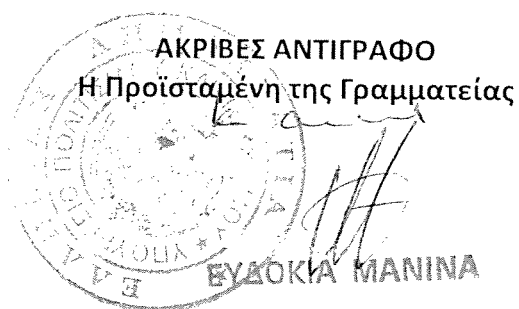
6. Οι δαπάνες για την αρχαιολογική παρακολούθηση των εργασιών από τις συναρμόδιες Υπηρεσίες του ΥΠ.ΠΟ.Τ., για τυχόν σωστική ανασκαφική έρευνα που θα προκύψει, για την αμοιβή του απαιτούμενου επιστημονικού και εργατικού προσωπικού και για τις απαιτούμενες προμήθειες σε υλικά και εργαλεία, καθώς και το κόστος μελέτης συντήρησης και δημοσίευσης των ευρημάτων, θα καλυφθούν σύμφωνα με τα οριζόμενα στο αρ. 37, παρ. 6 του Ν. 3028/2002 «Για την Προστασία των Αρχαιοτήτων και εν γένει της Πολιτιστικής Κληρονομιάς».

Η έναρξη των εργασιών σημαίνει αυτόματα και την αποδοχή των ανωτέρω όρων, ενώ σε περίπτωση παράβασής τους αίρεται αυτομάτως η χορηγηθείσα έγκριση.

Η άδεια αυτή εκδίδεται από πλευράς Αρχαιολογικού Νόμου και δεν αντικαθιστά άλλη άδεια συναρμόδιας αρχής.

Εσωτ. Διανομή: Α1 (Γρ.Μ.Ε.)

Η Προϊσταμένη της Γενικής Διεύθυνσης  
Αρχαιοτήτων και Πολιτιστικής Κληρονομιάς  
Μαρία Ανδρεαδάκη - Βλαζάκη





ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ ΠΟΛΙΤΙΣΜΟΥ ΚΑΙ ΤΟΥΡΙΣΜΟΥ  
ΓΕΝΙΚΗ ΔΙΕΥΘΥΝΣΗ ΑΡΧΑΙΟΤΗΤΩΝ &  
ΠΟΛΙΤΙΣΤΙΚΗΣ ΚΛΗΡΟΝΟΜΙΑΣ  
ΔΙΕΥΘΥΝΣΗ ΠΡΟΪΣΤΟΡΙΚΩΝ &  
ΚΛΑΣΙΚΩΝ ΑΡΧΑΙΟΤΗΤΩΝ  
ΤΜΗΜΑ ΑΡΧΑΙΟΛΟΓΙΚΩΝ ΧΩΡΩΝ, ΜΝΗΜΕΙΩΝ  
& ΑΡΧΑΙΟΓΝΩΣΤΙΚΗΣ ΕΡΕΥΝΑΣ

ΓΡΑΦΕΙΟ ΣΥΝΤΟΝΙΣΜΟΥ & ΠΑΡΑΚΟΛΟΥΘΗΣΗΣ  
ΑΡΧΑΙΟΛΟΓΙΚΩΝ ΕΡΓΑΣΙΩΝ  
ΣΤΟ ΠΛΑΙΣΙΟ ΜΕΓΑΛΩΝ ΕΡΓΩΝ

Διεύθυνση : Μπουμπουλίνας 20, 106 82 Αθήνα  
Πληροφορίες : Α. Σαλίχου  
Τηλ. : 210-8201 820, Τηλ/τυπία : 210-8201 260  
Ηλεκτρ. Δ/ση : [dpkar@culture.gr](mailto:dpkar@culture.gr)

ΕΞ. ΕΠΕΙΓΟΝ

Αθήνα, 21 - 11 - 2011

Αρ. Πρωτ.:  
ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/108145/4643

ΠΡΟΣ: Την "C&M Engineering A.E."  
Πρατίνου 99  
116 34 Αθήνα

ΚΟΙΝ.: 1. Γ.Δ.Α.Π.Κ.  
2. Γ.Δ.Α.Μ.Τ.Ε.  
3. Δ.Β.Μ.Α.  
4. ΙΘ' Ε.Π.Κ.Α.  
5. 15<sup>η</sup> Ε.Β.Α.  
6. Υ.Ν.Μ.Τ.Ε.Α.Μ.Θ.

ΘΕΜΑ: Έκθεση Αναλυτικής Αρχαιολογικής Τεκμηρίωσης (Ε.Α.Α.Τ.) για το έργο «Αγωγός Φυσικού Αερίου Διασύνδεσης Ελλάδας – Βουλγαρίας (IGB Project)».

ΣΚΕΤ.: 1. Η υπ' αρ. 36869/11/13-09-2011 επιστολή της εταιρείας C&M Engineering A.E.  
2. Το υπ' αρ. ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/92826/4037/29-09-11 έγγραφο.  
3. Το υπ' αρ. 3558/03-11-2011 έγγραφο της ΙΘ' Ε.Π.Κ.Α.  
4. Το υπ' αρ. 2807/19-10-2011 έγγραφο της 15<sup>ης</sup> Ε.Β.Α.  
5. Το υπ' αρ. 509/26-09-11 έγγραφο της Υ.Ν.Μ.Τ.Ε.Α.Μ.Θ.

Σε συνέχεια των ανωτέρω σχετικών και σε εφαρμογή του αρ. 44 του Ν. 3905/2010 (ΟΕΚ 219/Α/23-12-2010) και της υπ' αρ. ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/94539/4613/04-10-10 εγκυκλίου της Γενικής Γραμματέως του ΥΠ.Π.Ο.Τ., σας αποστέλλουμε την Έκθεση Αναλυτικής Αρχαιολογικής Τεκμηρίωσης (Ε.Α.Α.Τ.), που αφορά στο έργο «Αγωγός Φυσικού Αερίου Διασύνδεσης Ελλάδας – Βουλγαρίας (IGB Project)», και παρακαλούμε να ληφθούν υπ' όψη τα σχετικά αρχαιολογικά στοιχεία κατά τη φάση σχεδιασμού της χωροθέτησης του ως άνω έργου.

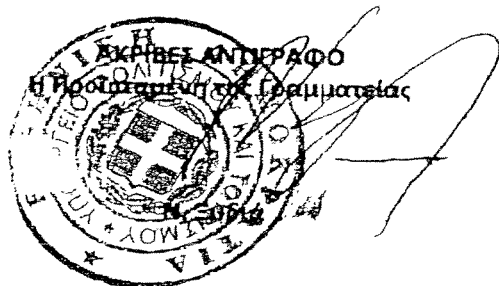
Επιπλέον, σας επισημαίνουμε ότι φωτοαντίγραφα των επιμέρους αναλυτικών εκθέσεων αρχαιολογικής τεκμηρίωσης των συναρμοδίων Περιφερειακών Υπηρεσιών του ΥΠ.Π.Ο.Τ. μπορούν να σας παρασχεθούν, κατόπιν αιτήματος από την πλευρά σας, εάν αυτό κριθεί σκόπιμο, και σας ενημερώνουμε ότι το Γραφείο Συντονισμού και Παρακολούθησης

Αρχαιολογικών Εργασιών στο πλαίσιο Μεγάλων Έργων του ΥΠ.ΠΟ.Τ. παραμένει στη διάθεσή σας για οποιαδήποτε διευκρίνιση και συνεργασία επί του θέματος.

Συν.: Η Ε.Α.Α.Τ. (τρία φύλλα).

Εσωτ. Διανομή: Α1 (Γρ. Μ.Ε.).

Η Προϊσταμένη της Γενικής Διεύθυνσης  
Αρχαιοτήτων και Πολιτιστικής Κληρονομιάς  
Μαρία Ανδρεαδάκη – Βλαζάκη



**ΕΚΘΕΣΗ ΑΝΑΛΥΤΙΚΗΣ ΑΡΧΑΙΟΛΟΓΙΚΗΣ ΤΕΚΜΗΡΙΩΣΗΣ (Ε.Α.Α.Τ.)  
ΓΙΑ ΤΟ ΕΡΓΟ «ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ  
(IGB PROJECT)»<sup>1</sup>**

**Αρμόδιες Περιφερειακές Υπηρεσίες του ΥΠ.ΠΟ.Τ.:  
ΙΘ' Ε.Π.Κ.Α., 15<sup>η</sup> Ε.Β.Α. και Υ.Ν.Μ.Τ.Ε.Α.Μ.Θ.**

Σε εφαρμογή του αρ. 44 του Ν. 3905/2010 (ΦΕΚ 219/Α/23-12-2010) και της υπ' αρ. ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/94539/4613/04-10-10 εγκυκλίου της Γενικής Γραμματέως του ΥΠ.ΠΟ.Τ., σας ενημερώνουμε σχετικά με τα αρχαιολογικά στοιχεία που αφορούν στην ύπαιθρο αρχαιολογικών χώρων και μνημείων, κηρυγμένων ή μη, στην ευρύτερη ζώνη κατάληψης του έργου «Αγωγός Φυσικού Αερίου Διασύνδεσης Ελλάδας – Βουλγαρίας (IGB Project)», ως προς τα ακόλουθα:

Από πλευράς αρμοδιοτήτων της ΙΘ' Ε.Π.Κ.Α. και της 15<sup>ης</sup> Ε.Β.Α. δεν υπάρχει αντίρρηση για την υλοποίηση του ως άνω έργου διατηρώντας ως κύριο άξονα την προτεινόμενη προκαταρκτική όδευση ΦΑ με περιορισμούς που τίθενται για την προστασία των αρχαιοτήτων στην ευρύτερη ζώνη κατάληψης του έργου.

Πιο συγκεκριμένα, δεν υπάρχει αντίρρηση για την υλοποίηση του τμήματος του έργου από την περιοχή της ΒΙ.ΠΕ. Ροδόπης (0+000) μέχρι και τον οικισμό Πανδρόσου (17+000), ενώ επισημαίνεται ότι στο τμήμα από την ορεινή περιοχή της Ροδόπης (17+000) έως και τα βουλγαρικά σύνορα (31+000) έχουν εντοπιστεί οι ακόλουθες αρχαιολογικές θέσεις αρμοδιότητας της ΙΘ' Ε.Π.Κ.Α.:

1. Θέση *Βεράν Μπαλάρ* (Παλιά Αμπέλια), η οποία βρίσκεται 6 χλμ. ΝΔ της θέσης *Γούσταου Ντερέ* (βλ. αρ. 6 του παρόντος καταλόγου),
2. Θέση *Σέλιστε*, η οποία βρίσκεται 7 χλμ. ΒΑ του χωριού *Νυμφαία* και 5 χλμ. ΝΔ της θέσης *Καλέ Τεπέ*. Στην εν λόγω θέση έχει εντοπιστεί περίβολος μήκους 260 μ., πάχους 1,40 μ. και ύψους 1,10 μ., μέσα στον οποίο υπάρχουν τετράπλευρα και κυκλικά κτίσματα.
3. Θέση *Αλή Τεπέ*, η οποία βρίσκεται 2 χλμ. ΝΔ του χωριού *Νυμφαία* και από την οποία έχουν περισυλλεγεί προϊστορικά όστρακα και σφονδύλια. Σε αυτή διακρίνονται κυκλικά κτίσματα. Στην ίδια θέση, σε υψηλότερη κορυφή από την προηγούμενη εντοπίστηκε ωοειδής περίβολος ύψους και πλάτους 1 μ.
4. *Υψωμα Καλέ Τεπέ*, μεταξύ των χωριών *Νυμφαία* και *Άνω και Κάτω Μύτικας*. Σε αυτή εντοπίστηκε ελλειψοειδής περίβολος μήκους 260 μ., πάχους 1,40 μ. και ύψους 1,75 μ.

<sup>1</sup> Το παρόν συνοδεύει το υπ' αρ. ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/108145/4643/21-11-2011 έγγραφο και συντάχθηκε σύμφωνα με τις απόψεις των συναρμοδίων Εφορειών Αρχαιοτήτων και της Υ.Ν.Μ.Τ.Ε.Α.Μ.Θ., οι οποίες κοινοποιήθηκαν στη Δι.Π.Κ.Α με το υπ' αρ. 3558/03-11-2011 έγγραφο της ΙΘ' Ε.Π.Κ.Α., το υπ' αρ. 2807/19-10-2011 έγγραφο της 15<sup>ης</sup> Ε.Β.Α. και το υπ' αρ. 509/26-09-11 έγγραφο της Υ.Ν.Μ.Τ.Ε.Α.Μ.Θ.

5. Ιερό του Ήρωα Ιππέα στην Πάνδροσο, στο ύψωμα 'Φαλακρό' (Μποζ τεπέ) (Χ=2.850, Ψ=6.900, Φ.Χ. Γ.Υ.Σ. Κομοτηνή 1:50.000). Βρίσκεται 1,2 χλμ. βορειοδυτικά του χωριού Πάνδροσος και 700 μ. ανατολικά του μεσαιωνικού φρουρίου της Νυμφαίας. Η κεραμεική που περισυλλέχθηκε από τη θέση περιλαμβάνει όστρακα της Πρώιμης Εποχής του Σιδήρου και όστρακα των Ρωμαϊκών χρόνων.
6. Ιερό του Ήρωα Ιππέα στη Νυμφαία Ροδόπης, στη θέση Τουστσου ντερέ, 4 χλμ. ΝΑ του χωριού και δίπλα ακριβώς σε χείμαρρο, όπου το 1971 εντοπίστηκαν στους παραποτάμιους αγρούς θεμέλια κτισμάτων και βρέθηκαν τμήματα αρράβδωτων κιονίσκων.

Ωστόσο, για το εν λόγω τμήμα του έργου, από 17+000 έως 31+000, σημειώνεται ότι στην περιοχή δεν έχει πραγματοποιηθεί μέχρι σήμερα συστηματική έρευνα. Συνεπώς, δεν μπορεί να αποκλειστεί το ενδεχόμενο εντοπισμού και άλλων αρχαιολογικών, μη καταγεγραμμένων, θέσεων.

Όσον αφορά στην προστασία νεώτερων μνημείων, η Υ.Ν.Μ.Τ.Ε.Α.Μ.Θ., στο υπ. αρ. 509/26-09-11 έγγραφό της, αναφέρει ότι «η περιοχή μέσω της οποίας θα διέρχεται ο αγωγός και η θέση των εγκαταστάσεών του δεν εντάσσονται σε περιοχή χαρακτηρισμένη από το ΥΠ.ΠΟ.Τ. ως 'ιστορικός τόπος', ούτε υπάρχουν εντός ή πλησίον αυτής κηρυγμένα νεώτερα μνημεία, η προστασία των οποίων να εμπίπτει στις αρμοδιότητές της, σύμφωνα με τις διατάξεις του Ν. 3028/2002 'Για την Προστασία των Αρχαιοτήτων και εν γένει της Πολιτιστικής Κληρονομιάς' (ΦΕΚ 153/τ.Α/28-06-02)». Ωστόσο, επισημαίνεται ότι ο Κύριος του Έργου οφείλει να ενημερώσει την αρμόδια Υ.Ν.Μ.Τ.Ε.Α.Μ.Θ. σε περίπτωση εντοπισμού νεώτερου – προς αξιολόγηση – μνημείου, που δεν έχει καταγραφεί στην ευρύτερη ζώνη κατάληψης του έργου και προστατεύεται σύμφωνα με τις διατάξεις του Ν. 3028/2002 (άρθρο 6).

Επιπλέον, λαμβάνοντας υπ' όψη το σύνολο των παραπάνω στοιχείων και με βάση τις απόψεις των συναρμοδίων Υπηρεσιών του ΥΠ.ΠΟ.Τ., σημειώνεται ότι, σε περίπτωση πρόκρισης της προτεινόμενης προκαταρκτικής όδευσης του αγωγού ΦΑ και έγκρισης του έργου «Αγ. αγωγός Φυσικού Αερίου Διασύνδεσης Ελλάδας – Βουλγαρίας (IGB Project)», οι περιορισμοί που κρίνεται σκόπιμο να τεθούν από πλευράς αρχαιολογικής Νομοθεσίας αφορούν στα ακόλουθα σημεία:

1. Όλες οι εκσκαφικές εργασίες, που θα γίνουν στο πλαίσιο εκτέλεσης του έργου, να πραγματοποιηθούν υπό την άμεση και συνεχή επίβλεψη των συναρμοδίων Εφορειών Αρχαιοτήτων, της ΙΘ' Ε.Π.Κ.Α. και της 15<sup>ης</sup> Ε.Β.Α. Ο Κύριος του Έργου θα πρέπει να ειδοποιήσει εγκαίρως και εγγράφως, τουλάχιστον δέκα πέντε (15) ημέρες πριν την έναρξη των εργασιών κατασκευής του έργου, τις συναρμόδιες Εφορείες Αρχαιοτήτων (ΙΘ' Ε.Π.Κ.Α. και 15<sup>η</sup> Ε.Β.Α.), προκειμένου να γίνουν οι απαραίτητες συνεννοήσεις.
2. Σε περίπτωση εντοπισμού αρχαιοτήτων οι εργασίες θα διακόπτονται και θα ακολουθεί σωστική ανασκαφική έρευνα, από τα αποτελέσματα της οποίας θα εξαρτηθεί σε κάθε περίπτωση η συνέχιση ή μη αυτών.

Επισημαίνεται ότι οι δαπάνες για την αρχαιολογική παρακολούθηση των εργασιών από τις συναρμόδιες Υπηρεσίες του ΥΠ.ΠΟ.Τ. (ΙΘ' Ε.Π.Κ.Α. και 15<sup>η</sup> Ε.Β.Α.), για τυχόν ανασκαφική έρευνα που θα προκύψει, για την αμοιβή του απαιτούμενου επιστημονικού και εργατικού προσωπικού και για τις απαιτούμενες προμήθειες σε υλικά και εργαλεία, καθώς και το κόστος

μελέτης συντήρησης και δημοσίευσης των ευρημάτων, θα καλυφθούν σύμφωνα με τα οριζόμενα στο αρ. 37, παρ. 6 του Ν. 3028/2002 «Για την Προστασία των Αρχαιοτήτων και εν γένει της Πολιτιστικής Κληρονομιάς».

Συν.: 1. Ένας (1) χάρτης από την ΙΘ' Ε.Π.Κ.Α.  
2. Ένα (1) CD.





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13 3-12

Θεσσαλονίκη 01-3-2012

Αριθ. Πρωτ. 10751

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΑΠΟΚΕΝΤΡΩΜΕΝΗ ΔΙΟΙΚΗΣΗ  
ΜΑΚΕΔΟΝΙΑΣ – ΘΡΑΚΗΣ  
ΓΕΝΙΚΗ ΔΙΕΥΘΥΝΣΗ ΔΑΣΩΝ  
& ΑΓΡΟΤΙΚΩΝ ΥΠΟΘΕΣΕΩΝ  
**Δ/ΝΣΗ ΣΥΝΤΟΝΙΣΜΟΥ ΚΑΙ  
ΕΠΙΘΕΩΡΗΣΗΣ ΔΑΣΩΝ**

Προς : Υ.Π.Ε.Κ.Α.  
Δ/νση Αισθητικών Δασών  
Δρυμών & Θήρας  
Χαλκοκονδύλη 31  
101 64 - ΑΘΗΝΑ

Ταχ. Δ/νση : Λεωφ. Γεωργικής Σχολής 46  
Ταχ. Κώδικας : 551 34  
Ταχ. Θυρίδα : 22487  
Πληροφορίες : Ελισάβετ Κίκα  
Τηλέφωνο : 2313309341  
Fax : 2313309540  
Email : [elkika@damt.gov.gr](mailto:elkika@damt.gov.gr)

Κοιν.:1. Υ.Π.Ε.Κ.Α.  
Ειδική Υπηρεσία Περιβάλλοντος  
(ΕΥΠΕ)  
Λ. Αλεξάνδρας 11 – 114 73 ΑΘΗΝΑ  
2. Δ/νση Δασών Ροδόπης  
3<sup>ο</sup> χλμ. Ε.Ο Κομοτηνής – Αλεξ/πολης  
691 00 ΚΟΜΟΤΗΝΗ

**Θέμα: Απόψεις επί της ΠΠΕ του έργου «ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ  
ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ & ΣΥΝΟΔΕΥΤΙΚΕΣ ΕΓΚΑΤΑΣΤΑΣΕΙΣ»**

**Σχετ:** Το αριθ. 206280/22-12-2011 έγγραφο της ΕΥΠΕ του ΥΠΕΚΑ

Κατόπιν του παραπάνω σχετικού εγγράφου της ΕΥΠΕ σας αποστέλλουμε συνημμένα το αριθ. 311/3-2-2012 έγγραφο της Δ/νσης Δασών Ροδόπης με το οποίο εκφράζονται οι απόψεις επί της ΠΠΕ του έργου του θέματος και σύμφωνα με το οποίο προτείνεται να εξεταστεί σε ορισμένα σημεία η τροποποίηση της όδευσης και να ληφθούν μέτρα, προκειμένου να προστατευθούν ιδιαίτερης αξίας δασικές εκτάσεις.

Ο προϊστάμενος  
της Δ/νσης Συντονισμού και Επιθεώρησης Δασών

Αλέξιος Αναστασίου  
Δασολόγος με Β' βαθμό

α/α



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΑΠΟΚΕΝΤΡΩΜΕΝΗ ΔΙΟΙΚΗΣΗ  
ΜΑΚΕΔΟΝΙΑΣ – ΘΡΑΚΗΣ  
ΓΕΝΙΚΗ Δ/ΝΣΗ ΔΑΣΩΝ &  
ΑΓΡΟΤΙΚΩΝ ΥΠΟΘΕΣΕΩΝ  
Δ/ΝΣΗ ΔΑΣΩΝ Ν. ΡΟΔΟΠΗΣ

Κομοτηνή, 3-2-2012

Αριθμ. Πρωτ. 311

ΤΜΗΜΑ : Διοίκησης & Διαχείρισης Δασών  
ΓΡΑΦΕΙΟ : Προστασίας Δασών &  
Δημοσίου Κατηγόρου  
ΤΑΧ. Δ/ΝΣΗ : 3<sup>ο</sup> χλμ. Ε.Ο. Κομοτ. – Αλεξ/πόλης  
ΤΑΧ. ΚΩΔ. : 69100  
ΠΛΗΡΟΦ. : Αθανασίου Σπύρος  
ΤΗΛ. : 2531023326  
ΤΗΛΕΟΜ. : 2531037230  
ΗΛ. ΤΑΧ. : gpd-rod@damt.gov.gr

ΠΡΟΣ: ΥΠΟΥΡΓΕΙΟ Π.Ε. & Κ.Α.  
ΓΕΝΙΚΗ Δ/ΝΣΗ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΕΥΠΕ, ΤΜΗΜΑ Α'  
Λ. Αλεξάνδρας 11, 114 73 ΑΘΗΝΑ  
Διεύθυνση  
Δ/νσης Συντονισμού & Επιθεώρησης Δασών  
Λεωφ. Γεωργικής Σχολής 46, 551 34 Θεσ/νίκη

**ΘΕΜΑ:** «Απόψεις επί της Προμελέτης Περιβαλλοντικών Επιπτώσεων του έργου: ΔΙΧΤΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ (ΑΦΑ) ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΟΣ – ΒΟΥΛΓΑΡΙΑΣ & ΣΥΝΟΛΕΥΤΙΚΕΣ ΕΓΚΑΤΑΣΤΑΣΕΙΣ»

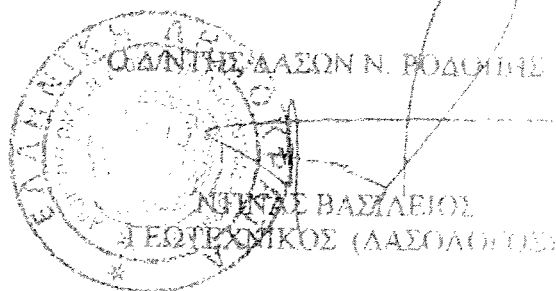
**ΣΧΕΤ. :** Το υπ' αριθμ. οικ. 206280/22-12-2011 της ΕΥΠΕ (παρελήφθη από την υπηρεσία μας 5-1-2012).

Απαντώντας στο ανωτέρω έγγραφο σας, σας γνωρίζουμε τα εξής:

1. Η προτεινόμενη οδευση του αγωγού φυσικού αερίου και όπως αυτή αποτυπώνεται στους χάρτες: α) κλίμακας 1:50.000 με θέμα «Προτεινόμενη οδευση αγωγού – οριζοντιογραφία – ελληνικό τμήμα» και αριθμό σχεδίου P513-100-91-001 και β) κλίμακας 1:5000 με θέμα «Οδευση σωληναγωγού – οριζοντιογραφία – ελληνικό τμήμα» με αριθμούς P513-100-92-006 έως και P513-100-92-012, που βρίσκονται στην προμελέτη περιβαλλοντικών επιπτώσεων του έργου, θίγει κατά θέσεις δημοσίου δασικού χαρακτήρα εκτάσεις. Διέρχεται δε, από δάση και δασικές εκτάσεις των παρ.1, 2 & 3 του άρθρου 3 του ν. 998/79 όπως αυτός τροποποιήθηκε με το άρθρο 1 παρ.1 του Ν.3208/03 και το άρθρο 9 παρ. 1 του Ν.3818/2010. Η δασική βλάστηση αποτελείται κυρίως από δρυ, ιξυά, πεύκη αλλά και αειφύλλα πλατύφυλλα.
2. Ο προτεινόμενος αγωγός φυσικού αερίου, διέρχεται κατά ένα τμήμα του από το καταφύγιο άγριας ζωής «Νυμφαία» Δήμου Κομοτηνής (υπ' αριθμ. 2704/15-6-2001 απόφαση Γενικού Γραμματέα Περιφέρειας Ανατολικής Μακεδονίας & Θράκης, ΦΕΚ 842/Β'3-7-2001). Ακόμα, διέρχεται, κατά ένα μικρό τμήμα του, από το προστατευτικό δάσος «στα διοικητικά όρια του Δήμου Κομοτηνής», το οποίο κηρύχθηκε ως προστατευτικό με την υπ' αριθμ. 1841/15-3-2006, απόφαση Γενικού Γραμματέα Περιφέρειας Ανατολικής Μακεδονίας & Θράκης (ΦΕΚ 253/Δ'3-4-2006).
3. Η Υπηρεσία μας, έχοντας υπόψη ότι το εν λόγω έργο, σύμφωνα με τα άρθρα 176 & 177 του Ν. 4001/2011 (ΦΕΚ 179/Α'), αποτελεί έργο εθνικής σημασίας, δημόσιας ωφέλειας και γενικά δημόσιου συμφέροντος, δεν έχει αντίρρηση για την κατασκευή του, σύμφωνα με τη λύση που προτείνεται στην μελέτη, (Οδευση αγωγού και θέση βελ βιδόστασιον), υπό τους παρακάτω όρους όρους και προϋποθέσεις:

α) Στην περιοχή ανάμεσα στα σημεία K32 -- K33, υπάρχει δάσος πεύκης προερχόμενο από αναδάσυντικές εργασίες, που έγιναν με σκοπό την προστασία

- των κατάντη οικισμών και της πόλης της Κομοτηνής από έντονα πλημμυρικά φαινόμενα. Ως εκ τούτου κρίνεται αναγκαία η παράκαμψη του εν λόγω δάσους και η μετακίνηση της όδευσης ανατολικά.
- Στην περιοχή ανάμεσα στα σημεία K37 - K39, όπου ο αγωγός γειτνιάζει με το δάσος «Νυμφαίας», για λόγους αντιτυρικής προστασίας, προτείνεται να μετακινηθεί ο αγωγός ανατολικά κατά τουλάχιστον 15 μ. περίπου, από το όριο του δάσους.
  - Επειδή, στην περιοχή των σημείων K101 μέχρι K105 περίπου, θίγονται αναδασώσεις, που έκανε η υπηρεσία μας κατά το παρελθόν, προτείνεται να αναδασωθεί πενταπλάσια σε έκταση περιοχή, η οποία θα υποδειχθεί από την υπηρεσία μας.
  - Στο πλαίσιο λήψης μέτρων αντιτυρικής προστασίας, προτείνεται να κατασκευαστούν από τον κύριο του έργου δύο (2) υδατοδεξαμενές, (με δυνατότητα λήψης νερού και από ελικόπτερα) μία στην ανωτέρω ευρύτερη περιοχή. (δάσος Νυμφαίας) και μία στην ευρύτερη περιοχή του φυλακίου «Φρουρός», οι ακριβείς θέσεις των οποίων θα προσδιοριστούν σε συνεννόηση με την υπηρεσία μας.
  - Η οποιαδήποτε επέμβαση σε δασικού χαρακτήρα εκτάσεις θα γίνει αφού ολοκληρωθεί η σχετική αδειοδοτική διαδικασία. Η υλοτομία δένδρων και θάμνων που προβλέπεται για την εγκατάσταση του αγωγού, να περιοριστεί στην απολύτως απαραίτητη για την κατασκευή του έργου, αποφεύγοντας, όπου είναι εφικτό, την κοπή δένδρων μεγάλης ηλικίας και πλατάνων. Πριν την εγκατάσταση δε, θα πρέπει με μέριμνα του κύριου του έργου, να συνταχθεί από ιδιώτη δασολόγο, πίνακας υλοτομίας των παραγόμενων δασικών προϊόντων, ο οποίος και θα εγκριθεί αρμοδίως. Τα δε δασικά προϊόντα θα διατεθούν σύμφωνα με τις διατάξεις της δασικής νομοθεσίας.
  - Η αφαιρούμενη γη να διαφυλαχθεί κατάλληλα, έτσι ώστε να χρησιμοποιηθεί στις φυτοτεχνικές αποκαταστάσεις.
  - Οι θιγόμενοι δασικοί δρόμοι να αποκατασταθούν.
  - Η αποκατάσταση θα γίνει σύμφωνα με μελέτη, η οποία θα συνταχθεί από ιδιώτη Δασολόγο και θα εγκριθεί αρμοδίως. Τα δασοπονικά είδη που θα επιλεγούν να είναι ενδημικά.
  - Σε περιοχές με μεγάλες κλίσεις να ληφθούν τα προβλεπόμενα μέτρα προστασίας των δασικών εδαφών από τη διάβρωση.
  - Να μην περιφραχθεί η θιγόμενη έκταση.





ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ,  
ΕΝΕΡΓΕΙΑΣ & ΚΛΙΜΑΤΙΚΗΣ ΑΛΛΑΓΗΣ  
ΕΙΔ. ΓΡΑΜΜΑΤΕΙΑ ΔΑΣΩΝ  
ΓΕΝΙΚΗ Δ/ΝΣΗ ΑΝΑΠΤΥΞΗΣ &  
ΠΡΟΣΤΑΣΙΑΣ ΔΑΣΩΝ &  
ΦΥΣΙΚΟΥ ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
Δ/ΝΣΗ ΑΙΣΘΗΤΙΚΩΝ ΔΑΣΩΝ, ΔΡΥΜΩΝ  
ΚΑΙ ΘΗΡΑΣ  
ΤΜΗΜΑ: Γ'

Αθήνα, 07/03/2012

Αρ. Πρωτ. : 165250/750

ΠΡΟΣ: Υ.Π.Ε.Κ.Α.  
Γεν. Δ/ση Περιβάλλοντος  
ΕΥΠΕ  
Τμήμα Α'  
Λ. Αλεξάνδρας 11  
11473 ΑΘΗΝΑ

ΚΟΙΝ.: ΠΙΝΑΚΑΣ ΑΠΟΔΕΚΤΩΝ

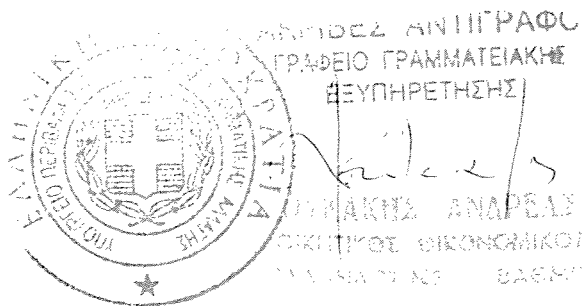
Ταχ. Δ/ση : Χαλκοκονδύλη 31  
101 64 ΑΘΗΝΑ  
Πληροφορίες : Α. Γκραικιώτου  
Τηλέφωνο : 210 212 4569  
Τηλεομοιοτυπία : 210 5242 663  
e-mail : xa31u068@minagric.gr

**ΘΕΜΑ:** Απόψεις επί της Π.Π.Ε. του έργου: «Αγωγός Φυσικού Αερίου (ΑΦΑ) Διασύνδεσης Ελλάδας – Βουλγαρίας (IGB Project) και Συνοδευτικές Εγκαταστάσεις».

**ΣΧΕΤ:** Το 206280/22-12-2011 έγγραφο του Υ.Π.Ε.Κ.Α.

Σύμφωνα με τη σχετική Π.Π.Ε., το έργο αφορά στον υπόγειο αγωγό IGB που θα μεταφέρει φυσικό αέριο μέσω των συνόρων μεταξύ της Ελλάδας και της Βουλγαρίας, διασυνδέοντας τον υφιστάμενο σταθμό Φυσικού Αερίου στην Κομοτηνή με έναν υφιστάμενο αγωγό Φυσικού Αερίου που βρίσκεται κοντά στη βουλγαρική πόλη Stara Zagora. Ο προτεινόμενος αγωγός θα διανύσει μια συνολική απόσταση περίπου 180 χλμ. (περίπου 30 χλμ. στην Ελλάδα και περίπου 150 χλμ. στη Βουλγαρία).

Δε διαφωνούμε κατ' αρχήν με την εκτέλεση του έργου, με την προϋπόθεση να ληφθούν υπ' όψη οι υποδείξεις της Δ/σης Δασών Ροδόπης. Επιφυλασσόμαστε για την αναλυτική γνωμοδότησή μας όταν υποβληθεί αρμοδίως η Μ.Π.Ε. του έργου.



Ο ΠΡΟΪΣΤΑΜΕΝΟΣ ΤΗΣ Δ/ΝΣΗΣ α.α.

ΔΗΜ. ΓΕΡΜΑΝΟΣ

## ΠΙΝΑΚΑΣ ΑΠΟΔΕΚΤΩΝ

### **1. C & M ENGINEERING A.E.**

Πρατίνου 99  
**11634 ΑΘΗΝΑ**

### **2. Αποκεντρωμένη Διοίκηση Μακεδονίας - Θράκης Γενική Δ/νση Δασών & Αγροτικών Υποθέσεων Δ/νση Δασών Ν. Ροδόπης 3<sup>ο</sup> χλμ. Κομοτηνής – Αλεξ/πολης **69100 ΚΟΜΟΤΗΝΗ****

198046  
7.5.12

ΠΡΟΣ : ΥΠΕΚΑ/ΕΥΠΕ  
Λ.Αλεξάνδρας 11  
Τ.Κ 11473-Αθήνα

ΚΟΙΝ : ΓΔΟΣΥ/ΔΙΣΤΥ/ΤΜ.ΥΠ  
ΓΕΣ/ΔΙΣΧΕΑ- ΔΥΠΟ/2°  
1<sup>Η</sup> ΣΤΡΑΤΙΑ/ΔΙΣΧΕΔ  
Δ'ΣΣ/ΔΙΣΧΕΔ  
29 ΤΑΞΠΖ/3° ΕΓ

12. Γ. Γ. Γ. 10/5/12  
Α  
090512  
Γ

ΓΕΝΙΚΟ ΕΠΙΤΕΛΕΙΟ ΣΤΡΑΤΟΥ  
ΔΙΕΥΘΥΝΣΗ ΥΠΟΔΟΜΗΣ/2°  
Τηλ.(Εσωτ.) 6553445  
Φ.916.74/ 78 / 412092  
Σ.926  
Αθήνα, 30 Απρ 2012  
Συνημμένα: Ένας (1) φάκελος

ΘΕΜΑ : Προμελέτη Περιβαλλοντικών Επιπτώσεων (ΠΠΕ) του Έργου "Αγωγός Φυσικού Αερίου Ελλάδος-Βουλγαρίας"

ΣΧΕΤ : α.Α.Π οικ. 206280/22 Δεκ. 2011/ΥΠΕΚΑ/ΕΥΠΕ  
β.Φ.900/16/11607/Σ.31/9 Απρ.2012/1<sup>Η</sup> ΣΤΡΑΤΙΑ/ΔΙΣΧΕΔ (ΟΣΣ)

Σας γνωρίζουμε, επί του(α) σχετικού, ότι το ΓΕΣ αφού έλαβε υπόψη τα αναφερόμενα στο (β) όμοιο, συμφωνεί για την κατασκευή του υπόψη έργου με τις παρακάτω προϋποθέσεις:

α. Την άμεση ενημέρωση της Στρατιωτικής Υπηρεσίας κατά την έναρξη των εργασιών, όπως διαλαμβάνονται στην τεχνική περιγραφή της μελέτης του έργου, οι οποίες θα εκτελούνται αυστηρά εντός της προταθείσας περιοχής χωροθέτησης του έργου.

β. Να υπάρχει έγκαιρη ενημέρωση της Στρατιωτικής Υπηρεσίας αλλά και της Βουλγαρικής πλευράς πριν την εκτέλεση εργασιών εγγύς του ορίου γραμμής και οποιαδήποτε βελτίωση ή επέκταση των καθοριζομένων ορίων εργασιών, θα υπόκεινται στην έγκριση της Στρατιωτικής Υπηρεσίας.

γ. Να μην επηρεασθούν τα έργα και οι εγκαταστάσεις του Πολεμικού Στρατηγείου της 29 Μ/Π ΤΑΞΠΖ, τα έργα οχύρωσης που υπάρχουν στην περιοχή, να αποκαταστήσει τον αύλακα της Ε/Β μεθορίου και οποιαδήποτε βλάβη προκύψει στις ενσύρματες επικοινωνίες της Ταξιαρχίας.

Σας επιστρέφουμε, συνημμένα, το φάκελο που μας υποβάλλατε με το(α) σχετικό και παρακαλούμε για τις ενέργειές σας.

Ακριβές Αντίγραφο

Ταξίαρχος Δημήτριος Μπαλαφούτης  
Διευθυντής Γ' Κλάδου

Αθανάσιος Γεωργελάς  
Αρχιτέκτων Μηχανικός

ΑΔΙΑΒΑΘΜΗΤΟ

ΕΠΕΙΓΟΝ

ΠΡΟΣ :

ΠΙΝΑΚΑΣ ΑΠΟΔΕΚΤΩΝ

ΚΟΙΝ.:

ΥΠΟΥΡΓΕΙΟ ΕΘΝΙΚΗΣ ΑΜΥΝΑΣ  
ΓΕΝΙΚΟ ΕΠΙΤΕΛΕΙΟ ΑΕΡΟΠΟΡΙΑΣ  
ΚΛΑΔΟΣ Γ' - ΔΝΣΗ ΥΠΟΔΟΜΩΝ (Γ2)  
ΤΜΗΜΑ 2  
ΑΡΙΘΜ. ΠΡΩΤ. 198151  
ΗΜΕΡΟΜΗΝΙΑ 10.5.12

ΥΠΟΥΡΓΕΙΟ ΕΘΝΙΚΗΣ ΑΜΥΝΑΣ  
ΓΕΝΙΚΟ ΕΠΙΤΕΛΕΙΟ ΑΕΡΟΠΟΡΙΑΣ  
ΚΛΑΔΟΣ Γ' - ΔΝΣΗ ΥΠΟΔΟΜΩΝ (Γ2)  
ΤΜΗΜΑ 2  
Τηλ.: 210-6593226  
Φαξ : 210-6593206  
Φ.550/ ΑΔ. 635097  
Σ. 772  
Αθήνα, 25 Απρ 12

ΘΕΜΑ: ΠΠΕ του έργου : «Αγωγός Φυσικού Αερίου Διασύνδεσης Ελλάδας – Βουλγαρίας & Συνοδευτικές Εγκαταστάσεις»

ΣΧΕΤ. : α. Το με Α.Π. οικ. 196224/20-2-12/ΥΠΕΚΑ/ΕΥΠΕ/ΤΜ. Α' β. Φ.900/112/46116/Σ.116/02 Απρ 12/ΥΠΕΘΑ/ΓΔΟΣΥ/ΔΙΣΤΥ/ΥΠ

1. Σε συνέχεια των σχετικών σας γνωρίζουμε ότι δεν έχουμε αντίρρηση για τη διέλευση του Αγωγού Φυσικού Αερίου Διασύνδεσης Ελλάδας – Βουλγαρίας & τις Συνοδευτικές Εγκαταστάσεις, όπως αποτυπώνονται στα σχεδιαγράμματα που μας αποστέilate με το (α) σχετικό.

2. Η παρούσα έγκριση δεν υποκαθιστά αναγκαίες πράξεις άλλων αρμοδίων Υπηρεσιών.

Υποπτέραρχος (Μ) Κ. Ζαγγογιάννης  
Δντής Γ' ΚΛ/ΓΕΑ

Ακριβές Αντίγραφο

Ασμίας (ΤΤΗ) Αν. Αφένδρα

ΠΙΝΑΚΑΣ ΑΠΟΔΕΚΤΩΝ

Αποδέκτες για Ενέργεια

-ΥΠΕΚΑ/Γενική Διεύθυνση Περιβάλλοντος/ΕΥΠΕ/Τμ. Α'  
Λ. Αλεξάνδρας 11  
ΤΚ 11473

Αποδέκτες για Κοινοποίηση

- ΥΠΕΘΑ/ΓΔΟΣΥ/ΔΙΣΤΥ/ΥΠ  
- ΓΕΑ/Γ2/2





ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΑΠΟΚΕΝΤΡΩΜΕΝΗ ΔΙΟΙΚΗΣΗ  
ΜΑΚΕΔΟΝΙΑΣ – ΘΡΑΚΗΣ  
ΓΕΝΙΚΗ Δ/ΝΣΗ ΔΑΣΩΝ &  
ΑΓΡΟΤΙΚΩΝ ΥΠΟΘΕΣΕΩΝ  
Δ/ΝΣΗ ΔΑΣΩΝ Ν. ΡΟΔΟΠΗΣ

Κομοτηνή, 27-8-2012  
Αριθμ. Πρωτ. 15052

ΤΜΗΜΑ : Διοίκησης & Διαχείρισης Δασών  
ΓΡΑΦΕΙΟ : Προστασίας Δασών &  
Δημοσίου Κατηγόρου  
ΤΑΧ. Δ/ΝΣΗ : 3<sup>ο</sup> χλμ. Ε.Ο. Κομοτ. – Αλεξ/πόλης  
ΤΑΧ. ΚΩΔ. : 69100  
ΠΛΗΡΟΦ. : Αθανασίου Σπύρος  
ΤΗΛ. : 2531023326  
ΤΗΛΕΟΜ. : 2531037230  
ΗΛ. ΤΑΧ. : gpd-rod@damt.gov.gr

ΠΡΟΣ: C & M ENGINEERING A.E.  
Πρατίνου 99, 116 34 Αθήνα

**ΘΕΜΑ:** «Απάντηση σε έγγραφο»

**ΣΧΕΤ.:** Το υπ' αριθμ. πρωτ. 37615/12/24-7-2012 έγγραφο της C & M ENGINEERING A.E.

Απαντώντας στο ανωτέρω σχετικό έγγραφό σας, σας γνωρίζουμε ότι στα τοπογραφικά διαγράμματα που μας προσκομίσατε, (αρ. σχεδίου Ρ513-100-92-007 κλίμακας 1:5000) έχουν αποτυπωθεί οι προτεινόμενες από την υπηρεσία μας τροποποιήσεις της χάραξης του αγωγού, σύμφωνα με τα διαλαμβανόμενα στο υπ' αριθμ. 311/3-2-2012 έγγραφό μας, που αφορούν στα τμήματα (Κ32 – Κ33) και (Κ37 – Κ39).



Η ΑΝΑΠΑΗΡΩΤΡΙΑ ΠΡΟΪΣΤΑΜΕΝΗ  
ΤΗΣ Δ/ΝΣΗΣ ΔΑΣΩΝ Ν. ΡΟΔΟΠΗΣ

ΓΚΟΤΖΑΡΙΔΟΥ ΜΑΡΙΝΑ  
ΓΕΩΤΕΧΝΙΚΟΣ (ΔΑΣΟΛΟΓΟΣ)



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΠΕΡΙΦΕΡΕΙΑ ΑΝ. ΜΑΚΕΔΟΝΙΑΣ & ΘΡΑΚΗΣ  
ΓΕΝΙΚΗ Δ/ΝΣΗ ΠΕΡΙΦΕΡΕΙΑΚΗΣ  
ΑΓΡΟΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ &  
ΚΤΗΝΙΑΤΡΙΚΗΣ  
Δ/ΝΣΗ ΑΓΡΟΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ &  
ΚΤΗΝΙΑΤΡΙΚΗΣ ΠΕΡΙΦΕΡΕΙΑΚΗΣ  
ΕΝΟΤΗΤΑΣ ΡΟΔΟΠΗΣ  
ΤΜΗΜΑ ΦΥΤΙΚΗΣ & ΖΩΙΚΗΣ ΠΑΡΑΓΩΓΗΣ

Κομοτηνή 13/02/2012  
Αριθ. πρωτ. 151

ΠΡΟΣ: ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ ΕΝΕΡΓΕΙΑΣ ΚΑΙ  
ΚΛΙΜΑΤΙΚΗΣ ΑΛΛΑΓΗΣ  
ΓΕΝΙΚΗ ΔΙΕΥΘΥΝΣΗ ΠΕΡΙΒΑΛΛΟΝΤΟΣ ΕΥΠΕ  
ΕΙΔΙΚΗ ΥΠΗΡΕΣΙΑ ΠΕΡΙΒΑΛΛΟΝΤΟΣ ΤΜΗΜΑ Β  
Λ. ΑΛΕΞΑΝΔΡΑΣ 11

Τ.Κ. 114 73 ΑΘΗΝΑ  
ΚΟΙΝ.: ΥΠΟΥΡΓΕΙΟ ΑΓΡΟΤΙΚΗΣ ΑΝΑΠΤΥΞΗΣ &  
ΤΡΟΦΙΜΩΝ  
ΔΙΕΥΘΥΝΣΗ ΧΩΡΟΤΑΞΙΑΣ & ΠΡΟΣΤΑΣΙΑΣ  
ΠΕΡΙΒΑΛΛΟΝΤΟΣ  
ΤΜΗΜΑ ΧΩΡΟΤΑΞΙΑΣ  
Πατησίων 207 & Σκαλιστηρι 19, 11253 ΑΘΗΝΑ

Ταχ. Διεύθυνση : Δημοκρατίας 1  
Ταχ. Κώδικας : 69100, Κομοτηνή  
Πληροφορίες : Τριανταφύλλου Αικατερίνη  
Τηλέφωνο : 2531350442  
Τηλεομοιότυπο : 2531036700

Θέμα: «Προμελέτη Περιβαλλοντικών Επιπτώσεων του έργου :ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ  
ΑΕΡΙΟΥ (ΑΦΑ) ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ-ΒΟΥΛΓΑΡΙΑΣ & ΣΥΝΟΔΕΥΤΙΚΕΣ  
ΕΓΚΑΤΑΣΤΑΣΕΙΣ ».

Σχετικά: Το με αριθμό Α.Π.: οικ.206280/22-12-2011 έγγραφό σας.

Σε απάντηση του παραπάνω σχετικού εγγράφου, σας στέλνουμε το με αριθμό 5/2012  
πρακτικό Χωροταξικής και Περιβαλλοντικής Γνωμοδότησης της Ν.Ε.ΧΩ.Π. Ροδόπης, σχετικό με  
το εν λόγω θέμα.

Ε.Π.  
Ο ΠΡΟΪΣΤΑΜΜΕΝΟΣ  
ΔΙΕΥΘΥΝΣΗΣ ΑΓΡΟΤΙΚΗΣ ΟΙΚΟΝΟΜΙΑΣ &  
ΚΤΗΝΙΑΤΡΙΚΗΣ Π.Ε.ΡΟΔΟΠΗΣ

ΔΗΜΗΤΡΙΟΣ ΡΑΠΤΗΣ

**Π Ρ Α Κ Τ Ι Κ Ο Νο 5/2012****ΧΩΡΟΤΑΞΙΚΗ ΚΑΙ ΠΕΡΙΒΑΛΛΟΝΤΙΚΗ ΓΝΩΜΟΔΟΤΗΣΗ**

Στην Κομοτηνή σήμερα 09/02/2012, ημέρα Πέμπτη και ώρα 10:00 οι παρακάτω:

1. Λεωνίδα Σταυρούλα- Γεωπόνος ως Πρόεδρος
2. Τηνούργιας Ελευθέριος- Δασολόγος ως τακτικό μέλος
3. Χατζοπούλου Αικατερίνη - Γεωπόνος ως τακτικό μέλος
4. Κυρκούδης Ιωάννης- Κτηνίατρος ως τακτικό μέλος
5. Ζάμπογλου Δημήτριος - Τοπογράφος ως τακτικό μέλος
6. Πατσιατζή Ασπασία - Ιχθυολόγος του ως τακτικό μέλος

ενεργούντες σαν μέλη της Ν.Ε.ΧΩ.Π. Ροδόπης που συστάθηκε με την υπ' αριθ. 10516/19-7-2010 απόφαση του Νομάρχη Ροδόπης και λαμβάνοντας υπόψη το υπ' αριθ. 423/22-02-2011 έγγραφο του Εκτελεστικού Γραμματέα της Π.Α.Μ.Θ. και το υπ' αριθμόν 03/01/57-27/01/2012 έγγραφο της Π.Α.Μ.Θ. συγκεντρωθήκαμε στα Γραφεία της Διεύθυνσης Αγροτικής Οικονομίας και Κτηνιατρικής Ροδόπης και αφού διαπιστώθηκε απαρτία, συζητήσαμε το θέμα Χωροταξικής και Περιβαλλοντικής Γνωμοδότησης του έργου: «Κατασκευή αγωγού φυσικού αερίου (ΑΦΑ) διασύνδεσης ΕΛΛΑΔΑΣ - ΒΟΥΛΓΑΡΙΑΣ & συνοδευτικές εγκαταστάσεις, στην Π.Ε. Ροδόπης».

Η επιτροπή αφού έλαβε υπόψη της όλα τα στοιχεία της μελέτης και μετά από επιτόπια μετάβαση στην περιοχή, όπου πρόκειται να γίνει το έργο, αποφάσισε ότι :

Το έργο θα κατασκευασθεί κατά ένα μέρος, από το ύψος του οικισμού της Πανδρόσου και μέχρι τα σύνορα Ελλάδας - Βουλγαρίας, σε δασική έκταση ή μεταβατικές δασώδεις -θαμνώδεις εκτάσεις (επιβάλλεται να τηρηθούν οι όροι και οι προϋποθέσεις που περιγράφονται από το υπ' αριθμό 311/03-02-2012 σχετικό έγγραφο της Δ/σης Δασών Ν.Ροδόπης), ως προς το υπόλοιπο τμήμα του, από τον οικισμό της Πανδρόσου έως την Βιομηχανική Περιοχή Κομοτηνής διέρχεται από καλλιεργήσιμη γη η οποία κατά μεγάλο μέρος αρδεύεται από γεωτρήσεις ή από επιφανειακά νερά. Η δε εγκατάσταση του σύμφωνα με την μελέτη περιβαλλοντικών επιπτώσεων προβλέπει την αποφυγή της υποβάθμισης του περιβάλλοντος κατά την φάση κατασκευής και κατά την φάση της λειτουργίας αυτού. Απαραίτητη προϋπόθεση κρίνεται η διαφύλαξη της τοπικής πανίδας - χλωρίδας, της αισθητικής του τοπίου και των προστατευόμενων περιοχών καθώς και να τηρηθούν τα προβλεπόμενα από την σχετική νομοθεσία ώστε να μην υπάρχουν επιπτώσεις στο ατμοσφαιρικό-υδάτινο περιβάλλον, το έδαφος και το τοπίο κατά τις φάσεις κατασκευής και λειτουργίας του έργου.

Η επιτροπή συμφωνεί με την χωροθέτηση του έργου, εφόσον τηρηθούν τα ανωτέρω.

**Η Ε Π Ι Τ Ρ Ο Π Η**

1. Στ. Λεωνίδα



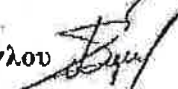
4. Ιωαν. Κυρκούδης




2. Ελ. Τηγανούριας



5. Δημ. Ζάμπογλου



3. Αικ. Χατζοπούλου



6. Ασπ. Πατσιατζή



**APPENDIX B: LIST OF CROSSINGS – LIST OF INTERSECTION POINTS –  
CLASS LOCATION TABLE**

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## B.1 LIST OF CROSSINGS

### B.1.1. Asphalt Roads

S/N / A/A	DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)	PASSAGE METHOD (Tentative)/ ΜΕΘΟΔΟΣ ΔΙΕΛΕΥΣΗΣ (Ενδεικτική)
C5	10760/PL/P1/02/421	K3+71.89	1+522.01	Regional road Fylakas - Thrylorio / Επαρχιακή οδός Φύλακας - Θρυλόριο	5.88	Open Cut / Ανοικτή Εκσκαφή
C17	10760/PL/P1/02/423	K8+88.56	5+221.81	Old National road Alexandroupoli - Komotini / Παλαιά Εθνική οδός Αλεξανδρούπολη - Κομοτηνή	11.08	Cased Boring / Οριζόντια Διάτρηση με Χιτώνιο
C31	10760/PL/P1/02/425	K16+80.92	8+685.54	Asphalt road Roditis - Stylario / Ασφαλτόδρομος Ροδίτης - Στυλάριο	6.75	Open Cut / Ανοικτή Εκσκαφή
C32	10760/PL/P1/02/425	K16+150.19	8+754.80	Asphalt road Roditis - Kalchas / Ασφαλτόδρομος Ροδίτης - Κάλχας	5.88	Open Cut / Ανοικτή Εκσκαφή
C39	10760/PL/P1/02/426	K19+989.66	10+787.47	Regional road Karydia - Kalchas / Επαρχιακή οδός Καρυδιά - Κάλχας	7.28	Open Cut / Ανοικτή Εκσκαφή
C48	10760/PL/P1/02/427	K25+21.68	12+443.67	Asphalt road to Tychiro / Ασφαλτόδρομος προς Τυχιρό	5.60	Open Cut / Ανοικτή Εκσκαφή
C55	10760/PL/P1/02/427	K32A+100.36	14+252.68	New National Road Komotini-Nymfea-GreekBulgarian Border - Axis 75 (under construction) / Νέα Εθνική οδός Κομοτηνή-Νυμφαία-Ελληνοβουλγαρικά σύνορα - Άξονας 75 (υπό κατασκευή)	30.10	Open Cut / Ανοικτή Εκσκαφή or / ή Cased Boring, if the road is constructed before the pipeline/ Οριζόντια Διάτρηση με Χιτώνιο, εάν ο δρόμος κατασκευασθεί πριν τον αγωγό

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

S/N / A/A	DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)	PASSAGE METHOD (Tentative)/ ΜΕΘΟΔΟΣ ΔΙΕΛΕΥΣΗΣ (Ενδεικτική)
C63	10760/PL/P1/02/427	K33+24.43	153+00.13	Asphalt road to Pandrosos / Ασφαλτόδρομος προς Πάνδροσο	5.41	Open Cut / Ανοικτή Εκσκαφή
C88	10760/PL/P1/02/431	K92+55.36	28+703.98	New National Road Komotini-Nymfea-GreekBulgarian Border - Axis 75 (Tunnel of Frourio) - Crossing above the tunnel / Νέα Εθνική οδός Κομοτηνή-Νυμφαία-Ελληνοβουλγαρικά σύνορα - Άξονας 75 (Σήραγγα Φρουρίου) – Διασταύρωση υπεράνω της Σήραγγας	10.86	Open Cut / Ανοικτή Εκσκαφή



### B.1.2. Earth Roads

S/N / A/A	DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)	PASSAGE METHOD (Tentative)/ ΜΕΘΟΔΟΣ ΔΙΕΛΕΥΣΗΣ (Ενδεικτική)
C1	10760/PL/P1/02/421	K1A+160.07	0+726.28	Earth road / Χωματόδρομος	3.31	Open Cut / Ανοικτή Εκσκαφή
C9	10760/PL/P1/02/421	K5+227.62	2+567.44	Earth road / Χωματόδρομος	4.02	Open Cut / Ανοικτή Εκσκαφή
C10	10760/PL/P1/02/422	K5+461.54	3+078.56	Earth road / Χωματόδρομος	3.75	Open Cut / Ανοικτή Εκσκαφή
C11	10760/PL/P1/02/422	K5+763.35	3+380.37	Earth road / Χωματόδρομος	3.71	Open Cut / Ανοικτή Εκσκαφή
C12	10760/PL/P1/02/423	K6+632.20	4+063.25	Earth road / Χωματόδρομος	4.55	Open Cut / Ανοικτή Εκσκαφή
C13	10760/PL/P1/02/423	K6+769.51	4+200.56	Earth road / Χωματόδρομος	7.25	Open Cut / Ανοικτή Εκσκαφή
C14	10760/PL/P1/02/423	K6+905.88	4+336.93	Earth road / Χωματόδρομος	3.33	Open Cut / Ανοικτή Εκσκαφή
C15	10760/PL/P1/02/423	K7+385.47	4+970.69	Earth road / Χωματόδρομος	3.66	Open Cut / Ανοικτή Εκσκαφή
C19	10760/PL/P1/02/423	K9+8.37	5+386.80	Earth road / Χωματόδρομος	3.38	Open Cut / Ανοικτή Εκσκαφή
C20	10760/PL/P1/02/423	K10+88.50	5+852.95	Earth road / Χωματόδρομος	7.15	Open Cut / Ανοικτή Εκσκαφή
C21	10760/PL/P1/02/423	K10+97.53	5+861.98	Earth road / Χωματόδρομος	6.28	Open Cut / Ανοικτή Εκσκαφή

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

S/N / A/A	DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)	PASSAGE METHOD (Tentative)/ ΜΕΘΟΔΟΣ ΔΙΕΛΕΥΣΗΣ (Ενδεικτική)
C23	10760/PL/P1/02/424	K11+258.61	6+232.60	Earth road / Χωματόδρομος	5.68	Open Cut / Ανοικτή Εκσκαφή
C25	10760/PL/P1/02/424	K12+249.77	6+521.25	Earth road / Χωματόδρομος	4.14	Open Cut / Ανοικτή Εκσκαφή
C26	10760/PL/P1/02/425	K13+98.63	6+824.78	Earth road / Χωματόδρομος	4.22	Open Cut / Ανοικτή Εκσκαφή
C27	10760/PL/P1/02/425	K13+344.06	7+070.21	Earth road / Χωματόδρομος	4.81	Open Cut / Ανοικτή Εκσκαφή
C28	10760/PL/P1/02/425	K13+566.15	7+292.30	Earth road / Χωματόδρομος	5	Open Cut / Ανοικτή Εκσκαφή
C30	10760/PL/P1/02/425	K15+335.90	8+243.63	Earth road / Χωματόδρομος	5.28	Open Cut / Ανοικτή Εκσκαφή
C33	10760/PL/P1/02/426	K17+584.54	9+370.32	Earth road / Χωματόδρομος	4.24	Open Cut / Ανοικτή Εκσκαφή
C34	10760/PL/P1/02/426	K18+25.90	9+457.38	Earth road / Χωματόδρομος	4.42	Open Cut / Ανοικτή Εκσκαφή
C36	10760/PL/P1/02/426	K18+260.58	9+692.06	Earth road / Χωματόδρομος	6.28	Open Cut / Ανοικτή Εκσκαφή
C37	10760/PL/P1/02/426	K19+894.91	10+692.72	Earth road / Χωματόδρομος	4.63	Open Cut / Ανοικτή Εκσκαφή
C38	10760/PL/P1/02/426	K19+955.02	10+752.83	Earth road / Χωματόδρομος	5.84	Open Cut / Ανοικτή Εκσκαφή
C40	10760/PL/P1/02/426	K20+41.62	11+055.35	Earth road / Χωματόδρομος	4.63	Open Cut / Ανοικτή Εκσκαφή

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

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C41	10760/PL/P1/02/426	K21+193.83	11+398.36	Earth road / Χωματόδρομος	4.57	Open Cut / Ανοικτή Εκσκαφή
C42	10760/PL/P1/02/426	K21+227.41	11+431.93	Earth road / Χωματόδρομος	10.87	Open Cut / Ανοικτή Εκσκαφή
C43	10760/PL/P1/02/426	K22+23.59	11+577.99	Earth road / Χωματόδρομος	5.93	Open Cut / Ανοικτή Εκσκαφή
C44	10760/PL/P1/02/426	K22+300.50	11+854.90	Earth road / Χωματόδρομος	4.26	Open Cut / Ανοικτή Εκσκαφή
C46	10760/PL/P1/02/426	K22+390.75	11+945.15	Earth road / Χωματόδρομος	4.43	Open Cut / Ανοικτή Εκσκαφή
C47	10760/PL/P1/02/427	K24+102.05	12+359.32	Earth road / Χωματόδρομος	2.73	Open Cut / Ανοικτή Εκσκαφή
C52	10760/PL/P1/02/427	K31+44.47	13+825.68	Earth road / Χωματόδρομος	5.58	Open Cut / Ανοικτή Εκσκαφή
C54	10760/PL/P1/02/427	K32A+37.50	14+189.82	Earth road / Χωματόδρομος	7.78	Open Cut / Ανοικτή Εκσκαφή
C56	10760/PL/P1/02/427	K32A+122.77	14+275.09	Earth road / Χωματόδρομος	5.59	Open Cut / Ανοικτή Εκσκαφή
C60	10760/PL/P1/02/427	K32A+521.36	14+673.68	Earth road / Χωματόδρομος	2.55	Open Cut / Ανοικτή Εκσκαφή
C65	10760/PL/P1/02/427	K36+43.47	16+019.46	Earth road / Χωματόδρομος	3.02	Open Cut / Ανοικτή Εκσκαφή
C68	10760/PL/P1/02/428	K41+198.96	17+099.62	Earth road / Χωματόδρομος	4.94	Open Cut / Ανοικτή Εκσκαφή

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C69	10760/PL/P1/02/428	K43+6.84	17+754.275	Earth road / Χωματόδρομος	24.53	Open Cut / Ανοικτή Εκσκαφή
C70	10760/PL/P1/02/428	K43+49.51	17+796.95	Earth road / Χωματόδρομος	6.92	Open Cut / Ανοικτή Εκσκαφή
C71	10760/PL/P1/02/428	K44+150.14	18+066.97	Earth road / Χωματόδρομος	7.66	Open Cut / Ανοικτή Εκσκαφή
C72	10760/PL/P1/02/428	K45+63.66	18+158.87	Earth road / Χωματόδρομος	5.05	Open Cut / Ανοικτή Εκσκαφή
C75	10760/PL/P1/02/428	K47+23.60	18+497.32	Earth road / Χωματόδρομος	5.08	Open Cut / Ανοικτή Εκσκαφή
C77	10760/PL/P1/02/428	K50+34.39	19+186.87	Earth road / Χωματόδρομος	7.42	Open Cut / Ανοικτή Εκσκαφή
C78	10760/PL/P1/02/428	K52+172.16	19+699.82	Earth road / Χωματόδρομος	3.57	Open Cut / Ανοικτή Εκσκαφή
C79	10760/PL/P1/02/428	K53+40.84	19+876.25	Earth road / Χωματόδρομος	5.77	Open Cut / Ανοικτή Εκσκαφή
C80	10760/PL/P1/02/429	K60+9.69	21+304.55	Earth road / Χωματόδρομος	7.92	Open Cut / Ανοικτή Εκσκαφή
C81	10760/PL/P1/02/429	K60+58.54	21+353.41	Earth road / Χωματόδρομος	11.39	Open Cut / Ανοικτή Εκσκαφή
C84	10760/PL/P1/02/430	K76+508.33	25+621.13	Earth road / Χωματόδρομος	7.06	Open Cut / Ανοικτή Εκσκαφή
C85	10760/PL/P1/02/431	K86+0.04	27+741.44	Earth road / Χωματόδρομος	5.18	Open Cut / Ανοικτή Εκσκαφή

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C86	10760/PL/P1/02/431	K91+163.37	28+647.39	Earth road / Χωματόδρομος	5.33	Open Cut / Ανοικτή Εκσκαφή
C87	10760/PL/P1/02/431	K92+25.51	28+674.13	Earth road / Χωματόδρομος	8.37	Open Cut / Ανοικτή Εκσκαφή
C89	10760/PL/P1/02/431	K93+31.75	28+761.40	Earth road / Χωματόδρομος	11.02	Open Cut / Ανοικτή Εκσκαφή
C90	10760/PL/P1/02/431	K93+59.79	28+789.45	Earth road / Χωματόδρομος	8.45	Open Cut / Ανοικτή Εκσκαφή
C91	10760/PL/P1/02/431	K93+108.73	28+838.39	Earth road / Χωματόδρομος	12.59	Open Cut / Ανοικτή Εκσκαφή
C92	10760/PL/P1/02/431	K93+120.84	28+850.49	Earth road / Χωματόδρομος	8.78	Open Cut / Ανοικτή Εκσκαφή
C93	10760/PL/P1/02/431	K95+15.78	29+124.90	Earth road / Χωματόδρομος	4.48	Open Cut / Ανοικτή Εκσκαφή
C94	10760/PL/P1/02/431	K96+157.91	29+490.71	Earth road / Χωματόδρομος	3.16	Open Cut / Ανοικτή Εκσκαφή
C95	10760/PL/P1/02/431	K100+299.08	30+185.36	Earth road / Χωματόδρομος	14.86	Open Cut / Ανοικτή Εκσκαφή

### B.1.3. Ditches –Ravines - Streams

S/N / A/A	DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)	PASSAGE METHOD (Tentative)/ ΜΕΘΟΔΟΣ ΔΙΕΛΕΥΣΗΣ (Ενδεικτική)
C6	10760/PL/P1/02/421	K3+78.05	1+528.17	Ditch / Χαντάκι	4.16	Open Cut / Ανοικτή Εκσκαφή
C16	10760/PL/P1/02/423	K8+78.54	5+211.79	Ditch / Χαντάκι	6.92	Open Cut / Ανοικτή Εκσκαφή
C18	10760/PL/P1/02/423	K8+98.93	5+232.19	Ditch / Χαντάκι	5.03	Open Cut / Ανοικτή Εκσκαφή
C22	10760/PL/P1/02/424	K11+182.15	6+156.14	Ravine / Ρέμα	38.35	Open Cut / Ανοικτή Εκσκαφή
C24	10760/PL/P1/02/424	K12+56.78	6+328.26	Ravine / Ρέμα	48.97	Open Cut / Ανοικτή Εκσκαφή
C29	10760/PL/P1/02/425	K14+51.65	7+666.01	Ravine / Ρέμα	6.37	Open Cut / Ανοικτή Εκσκαφή
C35	10760/PL/P1/02/426	K18+225.50	9+656.98	Stream Trelochimaros / Χείμαρρος Τρελοχείμαρρος	63.88	Open Cut / Ανοικτή Εκσκαφή
C45	10760/PL/P1/02/426	K22+359.30	11+913.70	Ravine / Ρέμα	18.52	Open Cut / Ανοικτή Εκσκαφή
C49	10760/PL/P1/02/427	K26+73.99	12+659.90	Ravine / Ρέμα	113.62	Open Cut / Ανοικτή Εκσκαφή
C50	10760/PL/P1/02/427	K28+257.19	13+135.72	Ravine / Ρέμα	10.39	Open Cut / Ανοικτή Εκσκαφή

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

S/N / A/A	DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)	PASSAGE METHOD (Tentative)/ ΜΕΘΟΔΟΣ ΔΙΕΛΕΥΣΗΣ (Ενδεικτική)
C53	10760/PL/P1/02/427	K32+104.74	14+073.21	Ravine / Ρέμα	7.22	Open Cut / Ανοικτή Εκσκαφή
C57	10760/PL/P1/02/427	K32A+136.22	14+288.54	Ravine / Ρέμα	21.31	Open Cut / Ανοικτή Εκσκαφή
C58	10760/PL/P1/02/427	K32A+305.21	14+457.53	Ravine / Ρέμα	26.62	Open Cut / Ανοικτή Εκσκαφή
C59	10760/PL/P1/02/427	K32A+510.07	14+662.385	Ravine / Ρέμα	18.11	Open Cut / Ανοικτή Εκσκαφή
C61	10760/PL/P1/02/427	K32A+566.75	14+719.07	Ravine / Ρέμα	59.93	Open Cut / Ανοικτή Εκσκαφή
C64	10760/PL/P1/02/427	K36+30.27	16+006.26	Ravine Karydorema / Καρυδόρεμα	17.00	Open Cut / Ανοικτή Εκσκαφή
C73	10760/PL/P1/02/428	K45+108.90	18+204.105	Ravine / Ρέμα	26.21	Open Cut / Ανοικτή Εκσκαφή
C74	10760/PL/P1/02/428	K46+63.13	18+399.67	Ravine Karydorema / Καρυδόρεμα	42.78	Open Cut / Ανοικτή Εκσκαφή
C76	10760/PL/P1/02/428	K47+41.06	18+514.785	Ravine / Ρέμα	14.83	Open Cut / Ανοικτή Εκσκαφή
C82	10760/PL/P1/02/429	K66+193.80	22+746.54	Ravine / Ρέμα	25.44	Open Cut / Ανοικτή Εκσκαφή
C83	10760/PL/P1/02/429	K73+206.01	24+314.10	Ravine / Ρέμα	19.12	Open Cut / Ανοικτή Εκσκαφή



#### B.1.4. Pipelines

S/N / A/A	DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)	PASSAGE METHOD (Tentative)/ ΜΕΘΟΔΟΣ ΔΙΕΛΕΥΣΗΣ (Ενδεικτική)
C7	10760/PL/P1/02/421	K4+209.36	2+549.18	Future 42" N.G. Pipeline Interconnector Greece-Italy (IGI) of DESFA / Μελλοντικός Αγωγός Φ.Α. 42" Διασύνδεσης Ελλάδας-Ιταλίας του ΔΕΣΦΑ		Open Cut / Ανοικτή Εκσκαφή <b>or / ή</b> otherwise requested by DESFA / ή όπως απαιτηθεί από το ΔΕΣΦΑ
C8	10760/PL/P1/02/421	K4+221.72	2+561.54	Existing 24" N.G. Pipeline of DESFA / Υφιστάμενος Αγωγός Φ.Α. 24" του ΔΕΣΦΑ		Open Cut / Ανοικτή Εκσκαφή <b>or / ή</b> otherwise requested by DESFA / ή όπως απαιτηθεί από το ΔΕΣΦΑ

### B.1.5. High Voltage Lines

S/N / A/A	DWG No / ΑΡΙΘΜΟΣ ΣΧΕΔΙΟΥ 1:5.000	LOCATION / ΘΕΣΗ	KM POSITION / ΧΙΛΙΟΜΕΤΡΙΚΗ ΘΕΣΗ	DESCRIPTION / ΠΕΡΙΓΡΑΦΗ	WIDTH / ΠΛΑΤΟΣ (m)	PASSAGE METHOD (Tentative)/ ΜΕΘΟΔΟΣ ΔΙΕΛΕΥΣΗΣ (Ενδεικτική)
C2	10760/PL/P1/02/421	K2+451.25	1+344.17	High Voltage Power Line 150KV / Γραμμή Υψηλής Τάσης 150KV		Open Cut / Ανοικτή Εκσκαφή
C3	10760/PL/P1/02/421	K2+475.98	1+368.90	High Voltage Power Line 150KV / Γραμμή Υψηλής Τάσης 150KV		Open Cut / Ανοικτή Εκσκαφή
C4	10760/PL/P1/02/421	K2+501.04	1+393.96	High Voltage Power Line 150KV / Γραμμή Υψηλής Τάσης 150KV		Open Cut / Ανοικτή Εκσκαφή
C51	10760/PL/P1/02/427	K30+212.36	13+570.96	High Voltage Power Line 150KV / Γραμμή Υψηλής Τάσης 150KV		Open Cut / Ανοικτή Εκσκαφή
C62	10760/PL/P1/02/427	K32B+87.02	14+881.82	High Voltage Power Line 150KV / Γραμμή Υψηλής Τάσης 150KV		Open Cut / Ανοικτή Εκσκαφή
C66	10760/PL/P1/02/428	K41+31.89	16+932.55	High Voltage Power Line 400KV / Γραμμή Υψηλής Τάσης 400KV		Open Cut / Ανοικτή Εκσκαφή
C67	10760/PL/P1/02/428	K41+132.22	17+032.88	High Voltage Power Line 150KV / Γραμμή Υψηλής Τάσης 150KV		Open Cut / Ανοικτή Εκσκαφή

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

B2. LIST OF INTERSECTION POINTS

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
10760/PL/P1 / 02/402	10760/PL/P1 / 02/421	10760/PL/P1 / 02/601	K0		0.00	624839.051	4546081.964	21.51		
				156.44						
>>	>>	>>	K1		156.44	624702.692	4546005.293	25.25	72.36	
				409.77						
>>	>>	>>	K1A		566.21	624370.255	4546244.875	28.48	-39.08	
				326.71						
>>	>>	10760/PL/P1 / 02/602	K2		892.92	624043.564	4546248.330	27.13	100.00	
				557.21						
>>	>>	>>	K3		1450.13	624049.458	4546805.506	37.53	-71.35	
				889.70						
>>	>>	10760/PL/P1 / 02/604	K4		2339.82	623252.500	4547201.000	38.33	89.21	
				277.20						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	10760/PL/P1 / 02/421	>>	K5		2617.02	623332.067	4547466.532	42.61	-17.72	
				814.03						
>>	10760/PL/P1 / 02/422	>>	K6		3431.05	623342.500	4548280.500	61.25	-23.40	
				1154.17						
>>	10760/PL/P1 / 02/423	10760/PL/P1 / 02/605	K7		4585.22	622941.626	4549362.816	82.33	26.71	
				548.03						
>>	>>	10760/PL/P1 / 02/606	K8		5133.25	622977.143	4549909.691	102.00	20.15	
				245.18						
>>	>>	>>	K9		5378.43	623068.392	4550137.259	103.45	-29.46	
				386.02						
>>	>>	>>	K10		5764.45	623037.000	4550522.000	88.70	46.68	
				209.54						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	10760/PL/P1 / 02/424	>>	K11		5973.99	623164.124	4550688.577	87.23	-32.51	
				297.49						
>>	>>	>>	K12		6271.48	623205.997	4550983.104	84.46	-19.21	
				454.67						
>>	>>	10760/PL/P1 / 02/607	K13		6726.15	623133.310	4551431.929	86.49	-33.80	
				888.20						
>>	10760/PL/P1 / 02/425	>>	K14		7614.35	622566.963	4552116.141	64.82	-35.59	
				293.38						
>>	>>	10760/PL/P1 / 02/608	K15		7907.73	622288.500	4552208.500	64.38	90.33	
				696.87						
>>	>>	>>	K16		8604.61	622405.318	4552895.513	84.52	-76.73	
				181.17						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	>>	10760/PL/P1 / 02/609	K17		8785.77	622249.364	4552987.710	68.81	59.15	
				645.70						
>>	10760/PL/P1 / 02/426	>>	K18		9431.48	622179.902	4553629.665	74.48	-48.21	
				366.33						
>>	>>	10760/PL/P1 / 02/610	K19		9797.81	621901.061	4553867.246	77.59	66.74	
				1215.92						
>>	>>	10760/PL/P1 / 02/611	K20		11013.73	622122.556	4555062.823	121.30	-43.25	
				190.79						
>>	>>	>>	K21		11204.52	622031.730	4555230.606	122.14	43.09	
				349.88						
>>	>>	>>	K22		11554.39	622094.589	4555574.790	137.81	-38.43	
				450.95						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	>>	>>	K23		12005.34	621909.500	4555986.000	146.28	50.05	
				251.93						
>>	10760/PL/P1 / 02/427	>>	K24		12257.27	621999.000	4556221.500	146.02	30.84	
				164.72						
>>	>>	10760/PL/P1 / 02/612	K25		12421.99	622122.500	4556330.500	153.89	-93.39	
				163.92						
>>	>>	>>	K26		12585.91	622027.361	4556463.986	151.67	40.42	
				168.03						
>>	>>	>>	K27		12753.95	622030.000	4556632.000	143.85	-72.74	
				124.57						
>>	>>	>>	K28		12878.52	621917.500	4556685.500	136.29	32.80	
				310.86						
>>	>>	>>	K29		13189.38	621739.000	4556940.000	111.15	82.93	



ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
				169.21						
>>	>>	10760/PL/P1 / 02/613	K30		13358.59	621846.840	4557070.399	134.07	-22.21	
				422.61						
>>	>>	>>	K31		13781.20	621988.646	4557468.506	146.35	-43.60	
				187.26						
>>	>>	>>	K32		13968.46	621925.715	4557644.872	149.41	-39.22	
				183.85						
>>	>>	10760/PL/P1 / 02/614	K32A		14152.31	621775.230	4557750.493	150.14	-24.36	
				642.48						
>>	>>	10760/PL/P1 / 02/615	K32B		14794.79	621149.579	4557896.582	133.28	-38.72	
				176.80						
>>	>>	>>	K32C		14971.59	620985.320	4557831.194	121.61	14.27	
				304.09						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	>>	>>	K33		15275.68	620684.859	4557784.347	110.28	8.90	
				182.90						
>>	>>	10760/PL/P1 / 02/616	K34		15458.57	620501.983	4557781.633	95.33	67.80	
				279.39						
>>	>>	>>	K35		15737.96	620363.000	4558024.000	94.79	33.95	
				238.02						
>>	>>	>>	K36		15975.98	620366.000	4558262.000	96.63	-76.80	
				231.16						
>>	>>	10760/PL/P1 / 02/617	K37		16207.14	620151.071	4558347.092	141.17	72.21	
				201.68						
>>	>>	>>	K38		16408.82	620139.064	4558548.412	146.34	-24.48	
				253.41						
>>	>>	>>	K39		16662.23	620030.195	4558777.240	161.21	33.12	

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
				115.60						
>>	>>	>>	K40		16777.82	620039.000	4558892.500	171.79	-29.10	
				122.83						
>>	10760/PL/P1 / 02/428	>>	K41		16900.65	619993.346	4559006.529	185.61	36.24	
				355.77						
>>	>>	10760/PL/P1 / 02/618	K42		17256.42	620060.000	4559356.000	214.32	39.57	
				491.00						
>>	>>	>>	K43		17747.42	620415.625	4559694.543	196.76	-18.81	
				169.40						
>>	>>	>>	K44		17916.82	620499.000	4559842.000	161.70	39.02	
				178.38						
>>	>>	10760/PL/P1 / 02/619	K45		18095.20	620660.145	4559918.493	134.55	-91.17	
				241.33						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	>>	>>	K46		18336.52	620587.789	4560148.718	138.54	57.21	
				137.18						
>>	>>	>>	K47		18473.70	620664.579	4560262.389	139.66	-74.17	
				137.23						
>>	>>	>>	K48		18610.93	620590.422	4560377.855	142.22	80.96	
				114.30						
>>	>>	>>	K49		18725.23	620664.122	4560465.221	160.75	-47.25	
				427.24						
>>	>>	>>	K50		19152.47	620646.444	4560892.094	151.77	64.74	
				157.67						
>>	>>	10760/PL/P1 / 02/620	K51		19310.14	620777.000	4560980.500	169.70	25.67	
				217.50						
>>	>>	>>	K52		19527.64	620990.500	4561022.000	237.03	-22.97	

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
				307.75						
>>	>>	>>	K53		19835.39	621252.416	4561183.587	303.18	-24.51	
				113.39						
>>	>>	10760/PL/P1 / 02/621	K54		19948.77	621319.500	4561275.000	319.29	-43.20	
				402.95						
>>	>>	>>	K55		20351.72	621301.148	4561677.531	454.07	34.66	
				149.14						
>>	10760/PL/P1 / 02/429	>>	K56		20500.87	621372.500	4561808.500	512.69	49.99	
				121.10						
>>	>>	>>	K57		20621.97	621488.659	4561842.754	532.68	-59.62	
				345.94						
>>	>>	10760/PL/P1 / 02/622	K58		20967.91	621606.500	4562168.000	511.83	38.81	
				169.01						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	>>	>>	K59		21136.92	621744.684	4562265.317	517.93	-34.68	
				157.93						
>>	>>	>>	K60		21294.85	621808.000	4562410.000	571.72	45.77	
				276.24						
>>	>>	>>	K61		21571.09	622058.000	4562527.500	588.63	-52.77	
				172.85						
>>	>>	10760/PL/P1 / 02/623	K62		21743.94	622109.500	4562692.500	593.31	-85.43	
				340.44						
>>	>>	10760/PL/P1 / 02/624	K63		22084.38	621816.000	4562865.000	508.71	-27.29	
				214.63						
>>	>>	>>	K64		22299.01	621602.500	4562887.000	474.91	-12.18	
				167.72						
>>	>>	>>	K65		22466.72	621435.442	4562872.150	464.81	30.72	

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
				86.00						
>>	>>	10760/PL/P1 / 02/625	K66		22552.73	621356.027	4562905.162	467.33	75.02	
				234.51						
>>	>>	>>	K67		22787.24	621356.408	4563139.675	386.22	12.77	
				87.61						
>>	>>	>>	K68		22874.85	621374.000	4563225.500	429.46	-27.56	
				170.52						
>>	>>	>>	K69		23045.37	621335.000	4563391.500	484.64	25.44	
				261.73						
>>	>>	10760/PL/P1 / 02/626	K70		23307.09	621379.000	4563649.500	542.63	-95.47	
				275.40						
>>	>>	>>	K71		23582.50	621111.500	4563715.000	523.30	21.51	
				334.92						



ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	>>	>>	K72		23917.41	620831.000	4563898.000	500.84	45.09	
				190.66						
>>	>>	10760/PL/P1 / 02/627	K73		24108.07	620777.500	4564081.000	453.55	47.06	
				471.38						
>>	>>	>>	K74		24579.45	620984.591	4564504.453	469.23	-50.76	
				400.82						
>>	10760/PL/P1 / 02/430	10760/PL/P1 / 02/628	K75		24980.27	620850.000	4564882.000	491.43	-79.16	
				132.52						
>>	>>	>>	K76		25112.79	620717.500	4564880.000	498.48	63.24	
				810.66						
>>	>>	10760/PL/P1 / 02/629	K77		25923.44	620264.812	4565552.485	528.01	35.14	
				206.15						
>>	>>	>>	K78		26129.60	620256.460	4565758.470	532.00	22.99	

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
				252.39						
>>	>>	>>	K79		26381.99	620336.000	4565998.000	564.39	-5.56	
				359.08						
>>	>>	>>	K80		26741.07	620419.000	4566347.358	595.06	-31.27	
				203.88						
>>	>>	>>	K81		26944.96	620367.000	4566544.500	605.50	-22.64	
				145.90						
>>	>>	10760/PL/P1 / 02/630	K82		27090.85	620283.005	4566663.791	670.76	37.39	
				287.31						
>>	>>	>>	K83		27378.16	620275.500	4566951.000	741.93	-15.87	
				115.86						
>>	>>	>>	K84		27494.02	620244.000	4567062.500	773.15	21.77	
				180.40						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	>>	>>	K85		27674.42	620256.000	4567242.500	794.57	-49.87	
				66.98						
>>	10760/PL/P1 / 02/431	>>	K86		27741.40	620212.000	4567293.000	801.05	29.14	
				77.02						
>>	>>	>>	K87		27818.42	620192.272	4567367.452	808.83	27.54	
				219.41						
>>	>>	>>	K88		28037.83	620230.180	4567583.563	830.53	14.62	
				168.99						
>>	>>	>>	K89		28206.83	620296.500	4567739.000	823.68	-48.14	
				159.13						
>>	>>	>>	K90		28365.96	620241.500	4567888.326	820.34	8.98	
				118.05						
>>	>>	10760/PL/P1 / 02/631	K91		28484.01	620216.687	4568003.736	825.39	49.99	

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
				164.60						
>>	>>	>>	K92		28648.61	620306.000	4568142.000	753.99	36.78	
				81.02						
>>	>>	>>	K93		28729.63	620380.000	4568175.000	771.31	-38.81	
				206.58						
>>	>>	>>	K94		28936.22	620486.500	4568352.015	788.55	14.61	
				172.89						
>>	>>	>>	K95		29109.11	620607.000	4568476.000	829.78	-24.74	
				223.67						
>>	>>	>>	K96		29332.78	620690.500	4568683.500	901.08	19.00	
				175.39						
>>	>>	10760/PL/P1 / 02/632	K97		29508.17	620800.929	4568819.765	936.94	-70.38	
				92.88						

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
>>	>>	>>	K98		29601.06	620762.683	4568904.406	936.48	-29.22	
				138.04						
>>	>>	>>	K99		29739.09	620656.000	4568992.000	905.79	-12.70	
				147.18						
>>	>>	>>	K100		29886.27	620526.000	4569061.000	869.60	43.43	
				503.89						
>>	>>	10760/PL/P1 / 02/633	K101		30390.16	620329.500	4569525.000	860.17	31.79	
				101.49						
>>	>>	>>	K102		30491.66	620339.500	4569626.000	857.59	29.50	
				122.91						
>>	>>	>>	K103		30614.56	620405.000	4569730.000	868.45	-45.50	
				92.07						
>>	>>	>>	K104		30706.63	620391.000	4569821.000	873.02	35.17	

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

Drawing No / Αρ.Σχεδίου 1:50.000	Drawing No / Αρ.Σχεδίου 1:5.000	Drawing No / Αρ.Σχεδίου 1:1.000	Ki Progressiv e Numbering / Αρίθμηση Κορυφών	Distance between Ki / Απόσταση μεταξύ των Κορυφών	Km Progressiv e Distance / Χλμ Απόσταση απ' αρχής	COORDINATES EGSA '87 / ΣΥΝΤΕΤΑΓΜΕΝΕΣ ΕΓΣΑ '87		H	ANGLE / ΓΩΝΙΑ (grad)	COMMENTS / ΠΑΡΑΤΗΡΗΣΕΙΣ
						EGSA-X	EGSA-Y			
				263.44						
>>	>>	>>	K105		30970.07	620493.528	4570063.670	944.16	-84.78	
				86.99						
>>	10760/PL/P1 / 02/432	10760/PL/P1 / 02/634	K106		31057.06	620423.692	4570115.535	941.54	-39.92	
				249.11						
>>	>>	>>	K107		31306.17	620174.604	4570118.458	924.27	25.39	
				79.09						
>>	>>	>>	K108		31385.25	620102.090	4570150.021	926.50	-51.29	
				94.62						
>>	>>	>>	K109		31479.87	620014.755	4570113.603	914.64		Ελληνο – Βουλγαρικά Σύνορα

**B3. CLASS LOCATION TABLE**

From Drawing Number / Από Αρ. Σχεδίου 1 : 1000	To Drawing Number / Έως Αρ. Σχεδίου 1 : 1000	Position / Θέση		Progressive Distance / Χιλιομετρική Θέση		C1	C2	C3	C4	Remarks / Παρατηρήσεις
				(m)		(m)	(m)	(m)	(m)	
		From / Από	To / Έως	From / Από	To / Έως					
10760/PL/P1/02/601	10760/PL/P1/02/616	K0+0.00	K35+102.03	0.00	15840.00	15840.00				
10760/PL/P1/02/616	10760/PL/P1/02/618	K35+102.03	K42+183.56	15840.00	17440.00		1600.00			
10760/PL/P1/02/618	10760/PL/P1/02/619	K42+183.56	K49+374.76	17440.00	19100.00	1660.00				
10760/PL/P1/02/619	10760/PL/P1/02/621	K49+374.76	K57+78.01	19100.00	20700.00		1600.00			
10760/PL/P1/02/621	10760/PL/P1/02/634	K57+78.01	K109+0.00	20700.00	31479.87	10779.87				
TOTAL / ΣΥΝΟΛΟ						28279.87	3200.00	0	0	



## APPENDIX C: ARCHAEOLOGICAL SITES IN RODOPI. RELATION WITH THE PROPOSED ROUTE.

Αριθμός Υπουργικής Απόφασης	Αριθμός ΦΕΚ	Τίτλος ΦΕΚ	Σχέση με χάραξη
Ministerial Decision No.	National Gazette No	Title	Relation with Route
<u>ΥΑ 9895/336/4-4-1950</u>	<u>ΦΕΚ 63/Β/20-4-1950</u>	Περί χαρακτηρισμού ιστορικού διατηρητέου μνημείου.	
<u>ΥΑ 4499/12-6-1964</u>	<u>ΦΕΚ 239/Β/30-6-1964</u>	Περί των διατηρητέων ιστορικών μνημείων και αρχαιολογικών χώρων.	
<u>ΥΑ 7828/7-5-1965</u>	<u>ΦΕΚ 404/Β/6-7-1965</u>	Περί κηρύξεως ως αρχαιολογικών χώρων και ιστορικών διατηρητέων μνημείων.	
<u>ΥΑ 22128/26-9-1968</u>	<u>ΦΕΚ 521/Β/7-10-1968</u>	Περί κηρύξεως ιστορικών διατηρητέων μνημείων 1) Ι. Ναού Κοιμήσεως της Θεοτόκου εν Κομοτηνή, 2) Τουρκικού οικοδομήματος (λουτρού) εις Μουρνιές Κυθωνίας Χανίων.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ 6422/19-5-1972</u>	<u>ΦΕΚ 432/Β/17-6-1972</u>	Περί κηρύξεως Αρχαιολογικών Χώρων.	
<u>ΥΑ Φ31/43953/3434 π.ε./28-1-1974</u>	<u>ΦΕΚ 136/Β/7-2-1974</u>	Περί χαρακτηρισμού του εν Κομοτηνή μεγάρου της Ελληνικής Αστικής Σχολής, ως οικήματος χρήζοντος ειδικής κρατικής προστασίας.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ Β1/Φ31/25402/3643/10-8-1974</u>	<u>ΦΕΚ 815/Β/17-8-1974</u>	Περί χαρακτηρισμού του οικισμού Μαρωνείας Ροδόπης ως χρήζοντος ειδικής κρατικής προστασίας.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΠΔ 19-10-1978</u>	<u>ΦΕΚ 594/Δ/13-11-1978</u>	Περί χαρακτηρισμού ως Παραδοσιακών Οικισμών τινών του Κράτους και καθορισμού των όρων και περιορισμών δομήσεως των οικηπέδων αυτών.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ Β1/Φ37/50158/2628/1-12-1978</u>	<u>ΦΕΚ 1107/Β/19-12-1978</u>	Περί κηρύξεως της γέφυρας Κομψάτου Κομοτηνής ως διατηρητέου μνημείου.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ ΥΠΠΕ/Α1/Φ19/17176/6 96/19-6-1979</u>	<u>ΦΕΚ 731/Β/30-8-1979</u>	Περί κηρύξεως αρχαιολογικών χώρων και μνημείων περιοχής Θράκης.	REC Διέρχεται στην περιοχή Προϊστορικού Περιβόλου μεταξύ χωριών Νυμφαία & Ανω/Κάτω Μύτικας. REC Passes in the area of prehistoric walls between Nimphea & Ano/Kato Mytikas Villages.
<u>ΥΑ ΥΠΠΕ/ΓΔΠΑ/Γ/37828/1 676/4-7-1979</u>	<u>ΦΕΚ 750/Β/6-9-1979</u>	Περί χαρακτηρισμού ως έργου τέχνης του αρχοντικού Πείδου, στην Κομοτηνή, ιδιοκτησίας Μορφωτικού Ομίλου Κομοτηνής.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ ΥΠΠΕ/ΑΡΧ/Α1/Φ19/250 21/806/19-5-1981</u>	<u>ΦΕΚ 468/Β/10-8-1981</u>	Περί κηρύξεως ως αρχαιολογικών χώρων και μνημείων περιοχής Θράκης.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ ΥΠΠΕ/ΔΙΛΑΠ/Γ/1689/38 255/22-7-1982</u>	<u>ΦΕΚ 888/Β/8-11-1982</u>	Χαρακτηρισμός ως έργου τέχνης του κτιρίου της Ισραηλίτικης Συναγωγής της Κομοτηνής, ιδιοκτησίας του Κεντρικού Ισραηλτικού Συμβουλίου.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ ΥΠΠΕ/ΔΙΛΑΠ/Γ/1687/38 239/24-7-1982</u>	<u>ΦΕΚ 888/Β/8-11-1982</u>	Χαρακτηρισμός ως έργου τέχνης του κτιρίου του Δικαστικού Μεγάρου Κομοτηνής, ιδιοκτησίας του Υπουργείου Δικαιοσύνης.	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ ΥΠΠΕ/ΑΡΧ/Α1/Φ19/394 58/1296/22-7-1983</u>	<u>ΦΕΚ 504/Β/31-8-1983</u>	Κήρυξη της τοποθεσίας "Κιο - Ερί" της Κοινότητας Προσκυντητών Ν. Ροδόπης	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού Far away from the alternative routes of the NG pipeline.
<u>ΥΑ ΥΠΠΕ/ΔΙΛΑΠ/Γ/41935/2</u>	<u>ΦΕΚ 562/Β/27-9-1983</u>	Χαρακτηρισμός ως έργου τέχνης του κτιρίου ιδιοκτησίας Δημοσίου όπου στεγάζεται	Πολύ Μακριά απο τις εναλ. Χαραξεις του αγωγού

ENVIRONMENTAL IMPACT ASSESSMENT STUDY – GREEK PART

121/10-8-1983		σήμερα ο Μορφωτικός Όμιλος Κομοτηνής, στην οδό Αγ. Γεωργίου αρ. 42 στην Κομοτηνή	Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΕ/ΔΙΛΑΠ/Γ/1943/39 636/3-8-1984	ΦΕΚ 683/Β/21-9-1984	Χαρακτηρισμός ως έργου τέχνης που χρειάζεται ειδική προστασία του κτιρίου μαζί με τον περιβάλλοντα χώρο του, στην οδό Τσανακλή 15 στην Κομοτηνή, ιδιοκτησίας Αικ. Ταμαρέση.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΕ/ΔΙΛΑΠ/Γ/1234/19 608/17-5-1985	ΦΕΚ 344/Β/31-5-1985	Χαρακτηρισμός ως έργων τέχνης των αρχοντικών Δερμετζόγλου και Στάλιου στην Κομοτηνή Ν. Ροδόπης.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΕ/ΔΙΛΑΠ/Γ/31738/1 979/7-8-1985	ΦΕΚ 568/Β/24-9-1985	Χαρακτηρισμός ως έργου τέχνης του αρχοντικού Ηλιάδου στη γωνία των οδών Στουκόπουλου και Νέστωρος Τσανακλή στην Κομοτηνή ιδιοκτησίας Γ. Αντωνιάδη.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΑΡΧ/Β1/Φ37/631 58/1324 π.ε./17-1-1986	ΦΕΚ 77/Β/28-2-1986	Κήρυξη της Σύναξης Μαρώνειας (Ν. Ροδόπης) ως αρχαιολογικού χώρου.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΑΡΧ/Β1/Φ37/153 52/389 π.ε./*	ΦΕΚ 364/Β/2-6-1986	Χαρακτηρισμός του Παπίκιου όρους ως αρχαιολογικού χώρου.	REC – ALT1 & ALT2 Διέρχονται οριακά εντός - REC-ALT1 & ALT2 Pass Marginally through – Allowed by authorities
ΥΑ ΥΠΠΟ/ΑΡΧ/Β1/Φ37/153 52/389 π.ε./9-2-1987	ΦΕΚ 284/Β/9-6-1987	Χαρακτηρισμός του Παπικίου όρους, τμήματος της Ροδόπης.	REC – ALT1 & ALT2 Διέρχονται οριακά εντός - REC-ALT1 & ALT2 Pass Marginally through – Allowed by authorities
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/1916/437 49/17-10-1988	ΦΕΚ 795/Β/2-11-1988		
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/1094/2 1293/15-5-1990	ΦΕΚ 345/Β/6-6-1990	Χαρακτηρισμός ως ιστορικού διατηρητέου μνημείου του ξενοδοχείου "ΑΣΤΟΡΙΑ" στην πλατεία Ειρήνης στην Κομοτηνή ιδιοκτησίας Νικολάου Παπαθεοδώρου.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/4501/5 594/31-1-1992	ΦΕΚ 112/Β/21-2-1992		
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/1523/3 0178/18-5-1995	ΦΕΚ 594/Β/7-7-1995		
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/1486/4 4814/12-9-1995	ΦΕΚ 838/Β/5-10-1995		
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/2613/4 8058/5-10-1995	ΦΕΚ 882/Β/25-10-1995		
ΥΑ ΥΠΠΟ/ΑΡΧ/Α1/Φ19/611 48/3600/14-11-1997	ΦΕΚ 45/Β/28-1-1998	Κήρυξη αρχαιολογικού χώρου αρχαίας Στρώμης Ν. Ροδόπης.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΑΡΧ/Α1/Φ19/611 44/3598/9-12-1997	ΦΕΚ 45/Β/28-1-1998	Θεσμοθέτηση Ζώνης Α Προστασίας αρχαιολογικού χώρου αρχ. Στρώμης Ν. Ροδόπης και οριοθέτηση Ζώνης Β.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/203/17 137/7-4-1998	ΦΕΚ 420/Β/6-5-1998	Συμπλήρωση της ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/ Γ/ 2613/48058/ 5.10.95 ( ΦΕΚ 882/Β/25.10.95 ) με τον ορισμό ζώνης προστασίας στον περιβάλλοντα χώρο της διατηρητέας καπναποθήκης ιδιοκτησίας Αφών Καλδριμιτζή στην κεντρική Πλατεία της Κομοτηνής.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΑΡΧ/Α1/Φ19/611 48/3600/14-11-1997	ΦΕΚ 719/Β/15-7-1998	Διόρθωση της ΥΠΠΟ/ΑΡΧ/Α1/Φ19/61148/3600/14-11-1997 απόφασης του Υπουργού Πολιτισμού	
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/2598/3	ΦΕΚ 1533/Β/28-7-1999	Χαρακτηρισμός ως ιστορικού διατηρητέου μνημείου και έργου τέχνης του Αρχοντικού	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού

3961/13-7-1999		Ταβανιώτη, στη Μαρώνεια Ν. Ροδόπης με τον περιβάλλοντα χώρο του στα όρια ιδιοκτησίας.	Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/2879/3 9142/20-8-1999	ΦΕΚ 1719/Β/13-9-1999	Χαρακτηρισμός ως ιστορικών διατηρητέων μνημείων και έργων τέχνης πέντε (5) κτιρίων στην Κομοτηνή, μαζί με τον περιβάλλοντα χώρο τους στα όρια της ιδιοκτησίας : α) κτίριο ιδιοκτησίας Θεολόγου στην οδό Βενιζέλου 10, β) κτίριο ιδιοκτησίας Σπεντζόπουλου και Δήμου Κομοτηνής στην οδό Κούλογλου 6-8, γ) κτίριο ιδιοκτησίας του Δήμου Κομοτηνής στις οδούς Κούλογλου και Σεφέρη, δ) κτίριο ιδιοκτησίας Αφών Ιωαννίδη και Δήμου Κομοτηνής στις οδούς Αγ. Γεωργίου και Χατζηκωνσταντή Ζωΐδη, ε) κτίριο στην οδό Τζεμβρακάκη 25.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/2880/5 1729/1-11-1999	ΦΕΚ 2059/Β/24-11-1999	Χαρακτηρισμός ως ιστορικού τόπου του τμήματος της παραδοσιακής αγοράς της Κομοτηνής όπως ορίζεται από τις οδούς Ορφέως, Συντάγματος Κρητών, Ερμού, Πλατεία Ηφαίστου, Κανάρη, Κιλκίς, Γραβιάς, Ξενοφώντος, Βενιζέλου, Ορφέως.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/4155/4 7396/6-9-2000	ΦΕΚ 1250/Β/13-10-2000	Χαρακτηρισμός ως ιστορικού διατηρητέου μνημείου και έργου τέχνης του κτιρίου του παλαιού Κοινοτικού Καταστήματος, στον οικισμό Αγίασμα του Δήμου Σώστη Ν. Ροδόπης.	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.
ΥΑ ΥΠΠΟ/ΔΙΛΑΠ/Γ/202/32 519/5-6-2002	ΦΕΚ 793/Β/27-6-2002	Χαρακτηρισμός ως ιστορικών διατηρητέων μνημείων και έργων τέχνης του κτιρίου της Παλαιάς Μεραρχίας και του διόροφου βοηθητικού κτιρίου, ιδιοκτησίας Υπουργείου Εθνικής Άμυνας, επί της Λεωφόρου Ηρώων του Δήμου Κομοτηνής, με τον περιβάλλοντα χώρο τους στα όρια ιδιοκτησίας (σύμφωνα με το συνημμένο τοπογρ. διάγραμμα).	Πολύ Μακριά απο τις εναλ. Χαράξεις του αγωγού Far away from the alternative routes of the NG pipeline.



## **APPENDIX D: LIST OF CODES & STANDARDS**

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## **1. Introduction**

### **1.1 Purpose of this Document**

The purpose of this document is to provide a preliminary list of laws, regulations, design codes and standards applicable to the project throughout its lifetime. The final list will be included in the Design Basis document.

This list is not exhaustive. All applicable National and European regulatory requirements shall be respected.



**1.2**

**Abbreviations**

ACS	Assemblies for Construction Sites
AGI	Above Ground Installation
ALCA	Agricultural Land Conservation Act of the Republic of Bulgaria
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
BS	British Standards
CRC	Cyclic Redundancy Check
DIN	German Institute for Standardization
DSP-PP	Detailed Spatial Plan – Parcelling Plan
EIA	Environmental Impact Assessment
EMC	Electromagnetic Compatibility
ELOT	Hellenic Organization for Standardisation
EN	European Norms
FA	Forestry Act of the Republic of Bulgaria
FEED	Front End Engineering Design
HVAC	Heating, Ventilation, and Air-Conditioning
IGB	Interconnector Greece Bulgaria
ISO	International Standards Organisation
LPC	Lightning Protection Components
MEW	Ministry of Environment and Water
NDT	Non-Destructive Testing
O&M	Operation and Maintenance
PCM	Pulse Code Modulation
PMD	Performance Measuring and Monitoring Devices
PPC	Public Power Corporation
RAALCA	Regulation on Application of ALCA of the Republic of Bulgaria

RAFA	Regulation on the Application of the FA of the Republic of Bulgaria
SCADA	Supervisory Control and Data Acquisition
SDH	Synchronous Digital Hierarchy
UPS	Uninterruptible Power Systems
ΟΣΜΕΟ	Greek Guidelines for the Design of Roadworks
ΠΕΤΕΠ	Greek Temporary National Technical Specifications
ΦΕΚ	Greek Government Gazette

**1.3**

**Precedence**

The following precedence of laws, regulations, codes and standards shall apply:

- Local Acts and Regulations
- European Directives and Regulations
- European Codes and Standards
- International Codes and Standards

International codes and standards shall only be used where certain aspects the project are not covered by European codes and standards.

## 2. Applicable Acts and Guidance – EIA

### 2.1 Project Section in Bulgaria

Reference	Description
State Gazette 91/25.09.2002, last amended SG 61/2010	Environmental Protection Act
State Gazette 25/18.03.2003, last amended SG 3/2011	Ordinance on the Terms and Procedures for Conduct of Environmental Impact Assessment
State Gazette 73/2007	Ordinance on conditions and order of conduct of assessment on the compatibility of plans, programmers and investment proposals with the subject and objectives of safeguarding protected areas.
N/A	Instructions on Elaboration of Environmental Impact Assessment of Investment Proposals of the Ministry of Environment and Water, 2002
N/A	Methods of carrying out Environmental Impact Assessment of Investment issued by the Ministry of Environment and Water, 2002
N/A	Guidance on Environmental Impact Assessment Scoping, June 2001
N/A	The Biodiversity Act
N/A	The Protected Areas Acts
N/A	Guidance on Environmental Impact Assessment – EIS Review, June 2001
<b>European Regulations - Directives</b>	
85/337/EEC	Council Directive of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment
96/61/EC	Council Directive of 24 September 1996 concerning integrated pollution prevention and control

Reference	Description
97/11/EC	Council Directive of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment
2003/35/EC	Directive of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC
<b>International Conventions</b>	
AARHUS (1998)	Aarhus Convention (1998) Convention on Access to Information Public Participation in Decision-making and Access to Justice in Environmental Matters Ratified by Bulgaria on TBC
ESPOO (1991)	Espoo Convention (1991): Convention on Environmental Impact Assessment in a Transboundary Context Ratified by Bulgaria on TBC

## 2.2 Project Section in Greece

Reference	Greek Title	Refers To
Law 1650/86 (ΦΕΚ 160/Α/16.10.1986)	Για την προστασία του περιβάλλοντος	Base Law “For the Protection of the Environment”
Joint Min. Dec. 69269 (ΦΕΚ678/Β/25.10.1990)	Κατάταξη έργων και δραστηριοτήτων σε κατηγορίες, περιεχόμενο Μελέτης Περιβαλλοντικών Επιπτώσεων (ΜΠΕ), καθορισμός περιεχομένου ειδικών περιβαλλοντικών μελετών (ΕΠΜ) και λοιπές συναφείς διατάξεις, σύμφωνα με το 1650/1986.	Categorization of public and private projects – Definition of EIA Studies Content acc. to LAW 1650/86.
Min. Dec. 1661/1994	Τροποποίηση και συμπλήρωση των διατάξεων της υπ’ αριθμ. 69269/5387 Κοινής Απόφασης Υπουργών Περιβάλλοντος, Χωροταξίας και Δημοσίων Έργων και Τουρισμού.	Amendment of the Joint Min. Dec. 69269 (ΦΕΚ678/Β/25.10.1990)
Min. Dec. οικ.84229/1996 (ΦΕΚ 906/Β/24.9.1996)	Ανάθεση έγκρισης περιβαλλοντικών έργων για ορισμένα έργα ή δραστηριότητες της πρώτης (Α') κατηγορίας του άρθρου 3 του LAW 1650/1986 στους Γενικούς Γραμματείς των Περιφερειών της χώρας, εξαιρουμένης της Περιφέρειας Αττικής.	Environmental Permits issuance by Regional Authorities acc. to LAW 1650/86.
Law 3010/2002 (ΦΕΚ 91/Α/25.4.2002)	Εναρμόνιση του Ν. 1650/1986 με τις Οδηγίες 97/11 Ε.Ε και 96/61 Ε.Ε., διαδικασία οριοθέτησης και ρυθμίσεις θεμάτων για τα υδατορέματα και άλλες διατάξεις.	Harmonization of Law 1650/1986 to Directives 97/11/EU and 96/61/EU, delimitation of streams and other provisions
Joint Min. Dec. Η.Π. 15393/2332/2002 (ΦΕΚ 1022/Β/5.8.2002)	Κατάταξη δημόσιων και ιδιωτικών έργων και δραστηριοτήτων σε κατηγορίες σύμφωνα με το άρθρο 3 του Ν. 1650/1986 όπως αντικαταστάθηκε με το άρθρο 1 του Ν. 3010/2002.	Categorization of public and private projects acc. to LAW 1650/86, as amended by LAW 3010/2002.
Min Dec. Νο25535/3281 (ΦΕΚ 1463/Β/20.11.2002)	Έγκριση περιβαλλοντικών όρων από το Γενικό Γραμματέα της Περιφέρειας των έργων και δραστηριοτήτων που κατατάσσονται στην υποκατηγορία 2 της Α' κατηγορίας σύμφωνα με την υπ’ αρ. ΗΠ 15393/2332/2002 ΚΥΑ.	Environmental Permits issuance by Regional Authorities.
No Η.Π. 11014/703/Φ104 (ΦΕΚ332/Β/20.3.2003)	Διαδικασία Προκαταρκτικής Περιβαλλοντικής Εκτίμησης και Αξιολόγησης (Π.Π.Ε.Α.) και Έγκρισης Περιβαλλοντικών Όρων (Ε.Π.Ο.) σύμφωνα με το άρθρο 4 του Ν. 1650/1986 όπως αντικαταστάθηκε με το άρθρο 2 του Ν.3010/2002.	Preliminary EIA & EIA Procedure acc. to LAW 1650/86, as amended by LAW 3010/2002.
Min Dec. No. 1726 (ΦΕΚ552/Β/8.5.2003)	Διαδικασία προκαταρκτικής περιβαλλοντικής εκτίμησης και αξιολόγησης, έγκρισης περιβαλλοντικών όρων, καθώς και έγκρισης επέμβασης ή παραχώρησης δάσους ή δασικής έκτασης στα πλαίσια της έκδοσης άδειας εγκατάστασης σταθμών ηλεκτροπαραγωγής από Ανανεώσιμες Πηγές Ενέργειας.	Preliminary EIA & EIA Procedure. – Special case for renewable energy resources.

Reference	Greek Title	Refers To
Min Dec. No 13727/724 (ΦΕΚ 1087/Β75.8.2003)	Αντιστοίχιση των βιομηχανιών και βιοτεχνικών δραστηριοτήτων με τους βαθμούς όχλησης που αναφέρονται στα πολεοδομικά διατάγματα.	Categorization of public and private projects & levels of nuisance.
Min. Dec. Η.Π. 37111/2021/2003 (ΦΕΚ 1391/Β/29.9.2003)	Καθορισμός τρόπου ενημέρωσης και συμμετοχής του κοινού κατά την διάρκεια έγκρισης περιβαλλοντικών όρων των έργων και δραστηριοτήτων σύμφωνα με την παράγραφο 2 του άρθρου 5 του Ν. 1650/1986 όπως αντικαταστάθηκε με τις παραγράφους 2 και 3 του άρθρου 3 του Ν. 3010/2002.	On the procedure of public information and participation in the framework of the environmental permitting system acc. to LAW 1650/86, as amended by LAW 3010/2002
Min Dec. No. ΕΥΠΕ οικ. 129079 (ΦΕΚ 1409/Β713.9.2004)	Συμπλήρωση της ΚΥΑ Η.Π. με αριθμ. 15393/2332/2002 (ΦΕΚ 1022/Β/5.8.2002), κατάταξη δημόσιων και ιδιωτικών έργων και δραστηριοτήτων σε κατηγορίες, σύμφωνα με το άρθρο 3 του Ν. 1650/1986 όπως αντικαταστάθηκε με το άρθρο 1 του Ν. 3010/2002.	Categorization of public and private projects.- Amendment.
Min Dec. No Οικ. 145799 ΦΕΚ 1002/Β/18.7.2005	Συμπλήρωση της υπ’ αριθμ. Η.Π. 15393/2332/2002 ΚΥΑ, κατάταξη δημόσιων και ιδιωτικών έργων και δραστηριοτήτων σε κατηγορίες, σύμφωνα με το άρθρο 3 του Ν. 1650/1986 όπως αντικαταστάθηκε με το άρθρο 1 του Ν. 3010/2002.	Categorization of public and private projects.- Amendment.
No Η.Π. 11764/653 (ΦΕΚ327/Β/17.3.2006)	Πρόσβαση του κοινού στις δημόσιες αρχές για παροχή πληροφοριών σχετικά με το περιβάλλον, σε συμμόρφωση με τις διατάξεις της οδηγίας 2003/4/ΕΚ «για την πρόσβαση του κοινού σε περιβαλλοντικές πληροφορίες και για την κατάργηση της οδηγίας 90/313/ΕΟΚ» του Συμβουλίου. Αντικατάσταση της υπ’ αριθμ. 77921/1440/1995 κοινής υπουργικής απόφασης (Β’ 795).	Public access to environmental data acc. to 2003/4/EC
No Οικ. 104247/ΕΥΠΕ/ΥΠΕΧΩΔΕ (ΦΕΚ663/Β726.5.2006)	Διαδικασία Προκαταρκτικής Περιβαλλοντικής Εκτίμησης και Αξιολόγησης (Π.Π.Ε.Α.) και Έγκρισης Περιβαλλοντικών Όρων (Ε.Π.Ο.) έργων Ανανεώσιμων Πηγών Ενέργειας (Α.Π.Ε.), σύμφωνα με το άρθρο 4 του Ν. 1650/1986, όπως αντικαταστάθηκε με το άρθρο 2 του Ν. 3010/2002.	Preliminary EIA & EIA Procedure. – Special case for renewable energy resources acc. to LAW 1650/86, as amended by LAW 3010/2002.
Min Dec. No ΥΠΕΧΩΔΕ/ΕΥΠΕ/ΟΙΚ. 107017/2006 (ΦΕΚ1225/Β75.9.2006)	Εκτίμηση των περιβαλλοντικών επιπτώσεων ορισμένων σχεδίων και προγραμμάτων, σε συμμόρφωση με τις διατάξεις της οδηγίας 2001/42/ΕΚ «σχετικά με την εκτίμηση των περιβαλλοντικών επιπτώσεων ορισμένων σχεδίων και προγραμμάτων» του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου της 27/6/2001.	Strategic EIA for Large Scale Projects & Plans acc. to 2001/42/EC.

Reference	Greek Title	Refers To
Joint Min Dec. No. 9269/470 (ΦΕΚ 286/Β/2.3.2007)	Μέσα ένδικης προστασίας του κοινού κατά πράξεων ή παραλείψεων της Διοίκησης σχετικά με θέματα ενημέρωσης και συμμετοχής του κατά τη διαδικασία έγκρισης περιβαλλοντικών όρων σύμφωνα με τα άρθρα 4 και 5 του ν. 1650/1986, όπως αντικαταστάθηκαν με τα άρθρα 2 και 3 του ν. 3010/2002 και σε συμμόρφωση με τις διατάξεις των άρθρων 3 (παρ. 7) και 4 (παρ. 4) της οδηγίας 2003/35/ΕΚ « σχετικά με την συμμετοχή του κοινού στην κατάρτιση ορισμένων σχεδίων και προγραμμάτων που αφορούν το περιβάλλον» και με την τροποποίηση όσον αφορά τη συμμετοχή του κοινού και την πρόσβαση στη δικαιοσύνη , των οδηγιών 85/337/ΕΟΚ και 96/61/ΕΟΚ του Συμβουλίου.	Legal tools for public participation during the EIA permitting procedure acc. to LAW 1650/86, as amended by LAW 3010/2002. and acc. to 2003/35/EC.
Min Dec. No ΥΠΕΧΩΔΕ/ΕΥΠΕ/ οικ. 126880/2007 (ΦΕΚ 435/Β/29.3.2007)	Συμπλήρωση της υπ' αριθμ. Η.Π.15393/2332/2002 (ΦΕΚ 1022/Β/5.8.2002) κοινής υπουργικής απόφασης, κατάταξη δημοσίων και ιδιωτικών έργων και δραστηριοτήτων σε κατηγορίες, σύμφωνα με το άρθρο 3 του Ν. 1650/1986 ( Α 160) όπως αντικαταστάθηκε με το άρθρο 1 του Ν. 3010/2002, « Εναρμόνιση του ν. 1650/1986 με τις οδηγίες 97/11/ΕΕ και 96/61/ΕΕ κ.α.	Categorization of public and private projects.- Amendment acc. to LAW 1650/86, as amended by LAW 3010/2002.
P.D. 148 (ΦΕΚ 190/Α/29.9.2009)	Περιβαλλοντική ευθύνη για την πρόληψη και την αποκατάσταση των ζημιών στο περιβάλλον - Εναρμόνιση με την οδηγία 2004/35/ΕΚ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου της 21ης Απριλίου 2004, όπως ισχύει	Environmental Liability acc. To 2004/35/EC
Min Dec. No 366599/16-12-96 (ΦΕΚ 1188/Β/31.12.96)	Μέτρα διαχείρισης της άγριας πτηνοπανίδας, σε συμμόρφωση προς την οδηγία 91/244/ΕΟΚ της Επιτροπής «για την τροποποίηση της οδηγίας 79/409/ΕΟΚ του Συμβουλίου περί διατηρήσεως των άγριων πουλιών».	NATURA 2000 AREAS – Wild Birds Protection acc. to 91/244/EC
Joint Min Dec. No 294283/23-12-97	Μέτρα διαχείρισης της άγριας πτηνοπανίδας, σε συμμόρφωση με τις οδηγίες 94/24/ΕΚ του Συμβουλίου και 91/244/ΕΟΚ, 97/49/ΕΚ της Επιτροπής.	NATURA 2000 AREAS – Wild Birds Protection
(ΦΕΚ68/Β/4.2.98)	Καθορισμός μέτρων και διαδικασιών για τη διατήρηση των φυσικών οικοτόπων (ενδιατημάτων) καθώς και της άγριας πανίδας και χλωρίδας.	NATURA 2000 AREAS – Habitats Preservation.
Joint Min Dec. No 33318/3028/11-12-9 (ΦΕΚ 1289/Β/28.12.98)	Συγκρότηση επιτροπής «Φύση 2000» σύμφωνα με τις διατάξεις του άρθρου 5 της ΚΥΑ 33318/3028/1998.	NATURA 2000 AREAS – NATURA 200 Committee

Reference	Greek Title	Refers To
Min Dec. No 135286/5447/2002 (ΦΕΚ1589/Β/2002)	Τροποποίηση των υπ' αριθμ. 33318/3028/1998 κοινών υπουργικών αποφάσεων (Β1289) και υπ' αριθμ. 29459/1510/2005 κοινών υπουργικών αποφάσεων (Β'992), σε συμμόρφωση με διατάξεις της οδηγίας 2006/105 του Συμβουλίου της 20 <sup>ης</sup> Νοεμβρίου 2006 της Ευρωπαϊκής Ένωσης.	Amendment of the above NATURA related legislation.
Dec. No Φ.0546/20/ΑΣ 342/Μ.4785/1998 (ΦΕΚ 121/Α/5.6.1998)	Διασυννοριακή ρύπανση της ατμόσφαιρας.	Air Pollution – Transboundary effects
No 8407/395/2003 (ΦΕΚ 1368/Β/24.10.2002)	Συμμόρφωση προς τις διατάξεις της οδηγίας 2001/100/ΕΚ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου της 7 <sup>ης</sup> Δεκεμβρίου 2001 για την τροποποίηση της οδηγίας 70/220/ ΕΟΚ του Συμβουλίου σχετικά με τα μέτρα που πρέπει να ληφθούν κατά της ρύπανσης του αέρα από τις εκπομπές των μηχανοκίνητων οχημάτων».	Air Pollution – Emissions from motor vehicles acc. to 2001/100/EC
No Α.Η.11641/1942/2002 (ΦΕΚ 832/Β/2.7.2002)	Μετρά και όροι για τον περιορισμό εκπομπών πτητικών οργανικών ενώσεων.	Air Pollution – VOC emissions reduction measures.
Min Dec. No 10689/523/2002 (ΦΕΚ 408/Β/4.4.2002)	Μέτρα για την εκπομπή ρύπων από μηχανοκίνητα οχήματα.	Air Pollution – Motor vehicles emissions reduction measures.
Dec. ΥΣ 34/30.5.2002 (ΦΕΚ 125/Β/5.6.2002)	Οριακές και κατευθυντήριες τιμές ποιότητας της ατμόσφαιρας σε διοξείδιο του θείου, διοξείδιο του αζώτου και οξειδίων του αζώτου, σωματιδίων και μολύβδου.	Air Pollution – Target levels for SO2, NO2, NOx, TSP and Pb.
Dec. No Α.Η.Π.92 38/3 32/2004 (ΦΕΚ 405 /Β/ 27.2.2004)	Οριακές τιμές βενζολίου και μονοξειδίου του άνθρακα στην ατμόσφαιρα	Air Pollution – Target levels for benzene and CO.
Min Dec. No Η.Π. 54409/2632/2004 (ΦΕΚ 1931/Β/27.12.04)	Σχετικά με τη θέσπιση συστήματος εμπορίας δικαιωμάτων εκπομπής αερίων του θερμοκηπίου.	Air Pollution – CO2 emissions trading.
Dec. No 437/2005 (ΦΕΚ 1641/Β/8.11.2006)	Εναρμόνιση της Ελληνικής Νομοθεσίας προς την Οδηγία 2004/42/ΕΚ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου της 21 <sup>ης</sup> Απριλίου 2004 όσον αφορά στον περιορισμό των εκπομπών πτητικών οργανικών ενώσεων που οφείλονται στη χρήση οργανικών διαλυτών σε χρώματα διακόσμησης και βερνίκια και σε προϊόντα επαναβαφής (επισκευαστικής βαφής) αυτοκινήτων και για την τροποποίηση της οδηγίας 1999/13/ΕΚ.	Air Pollution – VOC emissions reduction measures acc. to 2004/42/EC.
Min Dec. No Η.Π. 38638/2016/2005 (ΦΕΚ1334/Β/21.9.2005)	Σχετικά με το όζον στον ατμοσφαιρικό αέρα.	Air Pollution – Target levels for O3

Reference	Greek Title	Refers To
Min Dec. No. Δ13/0/121/2007 (ΦΕΚ 53/Β/24.1.2007)	Μέτρα κατά της εκπομπής αερίων και σωματιδιακών ρύπων προερχόμενων από κινητήρες εσωτερικής καύσης που τοποθετούνται σε μη οδικά κινητά μηχανήματα σε συμμόρφωση με τις διατάξεις της οδηγίας 97/68/ΕΚ όπως τροποποιήθηκε από τις οδηγίες 2001/63/ΕΚ, 2002/88/ΕΚ και 2004/26/ΕΚ του Συμβουλίου της 17 <sup>ης</sup> Αυγούστου 2001, της 9 <sup>ης</sup> Δεκεμβρίου 2002 και της 21 <sup>ης</sup> Απριλίου 2004 αντίστοιχα.	Air Pollution – Non Road machinery emissions reduction measures acc. to 97/68/EC, as amended by 2001/63/EC, 2002/88/EC, 2004/26/EC.
Min Dec. No. Η.Π. 29459/1510/2005 (ΦΕΚ 992/Β/14.7.2008)	Καθορισμός εθνικών ανωτάτων ορίων εκπομπών για ορισμένους ατμοσφαιρικούς ρύπους.	Air Pollution – National emissions limits
Joint Min Dec. No 18186/271 (ΦΕΚ126/Β/3.3.1988)	Μέτρα και περιορισμοί για την προστασία του υδάτινου περιβάλλοντος και ειδικότερα καθορισμός οριακών τιμών των επικινδύνων ουσιών στα υγρά απόβλητα.	Water pollution – Emission limit values in liquid waste.
Πράξη 73 της 23 <sup>ης</sup> Ιουνίου 1990 (ΦΕΚ 90/Α/11.7.1990)	Καθορισμός των κατευθυντήριων και οριακών τιμών ποιότητας των νερών από απορρίψεις ορισμένων επικινδύνων ουσιών, που υπάγονται στον κατάλογο Ι του Παραρτήματος Α του άρθρου 6 της αριθ. 144/2.11.1987 Πράξης του Υπουργικού Συμβουλίου.	Water pollution – Target levels for hazardous substances.
Law 2425/1996 (ΦΕΚ 148/Α/4.7.1996)	Κύρωση της Σύμβασης του ΟΗΕ για την προστασία και τη χρήση των διασυνοριακών υδάτων και των διεθνών λιμνών.	Water pollution – Transboundary river & lake water protection & use.
Law 2402/1996 (ΦΕΚ 98/Α/4.6.1996)	Κύρωση Συμφωνίας μεταξύ της Κυβέρνησης της Ελληνικής Δημοκρατίας και της Κυβέρνησης της Δημοκρατίας της Βουλγαρίας για τα ύδατα του ποταμού Νέστου.	Water pollution – Agreement between Greece & Bulgaria for Nestos river water protection.
Min Dec. No. Οικ. 4859/726 (ΦΕΚ 253/Β/9.3.2001)	Μέτρα και περιορισμοί για την προστασία του υδατικού περιβάλλοντος από απορρίψεις και ειδικότερα καθορισμός οριακών τιμών ορισμένων επικινδύνων ουσιών που υπάγονται στον Κατάλογο ΙΙ της οδηγίας 76/464/ΕΟΚ του Συμβουλίου της 4 <sup>ης</sup> Μαΐου 1976.	Water pollution – protection from hazardous substances emissions.
Law 3199/2003 (ΦΕΚ 280/Α/9.12.2003)	Προστασία και διαχείριση των υδάτων - Εναρμόνιση με την Οδηγία 2000/60/ΕΚ του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου της 23 <sup>ης</sup> Οκτωβρίου 2000.	Water pollution – Integrated water bodies management & protection acc. to 2000/60/EC.
P.D. 51/2007 (ΦΕΚ 54/Α/8.3.2007)	Καθορισμός μέτρων και διαδικασιών για την ολοκληρωμένη προστασία και διαχείριση των υδάτων σε συμμόρφωση με τις διατάξεις της Οδηγίας 2000/60/ΕΚ «για τη θέσπιση πλαισίου κοινοτικής δράσης στον τομέα της πολιτικής των υδάτων» του Ευρωπαϊκού Κοινοβουλίου και του Συμβουλίου της 23 <sup>ης</sup> Οκτωβρίου 2000.	Water pollution – Integrated water bodies management & protection acc. to 2000/60/EC.
P.D. 109/2004 (ΦΕΚ75/Α/5.4.2004)	Μέτρα και όροι για την εναλλακτική διαχείριση των μεταχειρισμένων ελαστικών των οχημάτων. Πρόγραμμα για την εναλλακτική διαχείριση τους.	Solid waste – Used tires

Reference	Greek Title	Refers To
Min Dec. No Η.Π. 50910/2727/2003 (ΦΕΚ 1909/Β/22.12.2003)	Μέτρα και όροι για τη διαχείριση στερεών αποβλήτων. Εθνικός και περιφερειακός σχεδιασμός διαχείρισης.	Solid waste – National & Regional Management Planning.
Min Dec. No 26469/1501/Ε103/2003 (ΦΕΚ 864/Β/1.7.2003)	Τροποποίηση της ΚΥΑ 14312/1302/00 με θέμα «συμπλήρωση και εξειδίκευση της ΚΥΑ 113944/97 «Εθνικός σχεδιασμός διαχείρισης στερεών αποβλήτων (Γενικές κατευθύνσεις της πολιτικής διαχείρισης των στερεών αποβλήτων» (723/Β).	Solid waste – National & Regional Management Planning.
Min Dec. No Η.Π. 29407/3508/2002 (ΦΕΚ 1572/Β/16.12.2002)	Μέτρα και όροι για την υγειονομική ταφή αποβλήτων.	Solid waste – Sanitary Landfilling
Αριθμ. Η.Π. 24944/1159 (ΦΕΚ791/Β/30.6.2006)	Έγκριση Γενικών Τεχνικών Προδιαγραφών για την διαχείριση επικινδύνων αποβλήτων σύμφωνα με το άρθρο 5 (παρ. Β) της υπ' αριθμ. 13588/725 κοινή υπουργική απόφαση «Μέτρα όροι και περιορισμοί για την διαχείριση επικινδύνων αποβλήτων κ.λπ.» (Β'383) και σε συμμόρφωση με τις διατάξεις του άρθρου 7 (παρ.1) της οδηγίας 91/156/ΕΚ του Συμβουλίου της 18 <sup>ης</sup> Μαρτίου 1991.	Hazardous waste management acc. to 91/156/EC.
Min Dec. No 8668 (ΦΕΚ 287/Β/2.3.2007)	Έγκριση Εθνικού Σχεδιασμού Διαχείρισης Επικινδύνων Αποβλήτων (ΕΣΔΕΑ), σύμφωνα με το άρθρο 5 (παρ. Α) της υπ' αριθμ. 13588/725 κοινή υπουργική απόφαση «Μέτρα, όροι και περιορισμοί για τη διαχείριση επικινδύνων αποβλήτων κ.λπ.» (Β' 383) και σε συμμόρφωση με τις διατάξεις του άρθρου 7 (παρ. 1) της υπ' αριθμ. 91/156/ΕΚ οδηγίας του Συμβουλίου της 18 <sup>ης</sup> Μαρτίου 1991. Τροποποίηση της υπ' αριθμ. 13588/725/2006 κοινή υπουργική απόφαση «Μέτρα όροι και περιορισμοί για την διαχείριση επικινδύνων αποβλήτων...κ.λπ.» (Β' 383) και της υπ' αριθμ. 24944/1159/206 κοινή υπουργικής απόφασης «Έγκριση Γενικών Τεχνικών Προδιαγραφών για την διαχείριση επικινδύνων αποβλήτων... κ.λπ.» (Β' 791).	Hazardous waste – National Management Plan.
Min Dec. No οικ. 56206/1613/1986 (ΦΕΚ570/Β/9.9.1986)	Προσδιορισμός της ηχητικής εκπομπής των μηχανημάτων και συσκευών εργοταξίου σε συμμόρφωση προς τις οδηγίες 79/113/ΕΟΚ, 81/1051/ΕΟΚ και 85/405/ΕΟΚ του Συμβουλίου της 19 <sup>ης</sup> Δεκεμβρίου 1978, της 7 <sup>ης</sup> Δεκεμβρίου 1981 και της 11 <sup>ης</sup> Ιουλίου 1985.	Noise emissions – Machinery Noise.
Min Dec. No οικ. 17252/1992 (ΦΕΚ395/Β/719-6.1992)	Καθορισμός δεικτών και ανωτάτων επιτρεπομένων ορίων θορύβου που προέχεται από την κυκλοφορία σε οδικά και συγκοινωνιακά έργα.	Noise emissions – Acceptable Traffic noise levels



Reference	Greek Title	Refers To
Min Dec. No 3263/131/2000 (ΦΕΚ935/Β/27.7.2000)	Συμμόρφωση προς τις διατάξεις της Οδηγίας 1999/101/ΕΚ της Επιτροπής της 15 <sup>ης</sup> Δεκεμβρίου 1999 για την προσαρμογή στην τεχνική πρόοδο της Οδηγίας 70/157/ΕΟΚ του Συμβουλίου περί προσεγγίσεως των κρατών μελών που αναφέρονται στο αποδεκτό ηχητικό επίπεδο και στην διάταξη εξατμίσεως των οχημάτων με κινητήρα.	Noise emissions – Acceptable Traffic noise levels
Min Dec. No 37393/2028/2003 (ΦΕΚ1418/Β/1.10.2003)	Μέτρα και όροι για τις εκπομπές θορύβου στο περιβάλλον από εξοπλισμό προς χρήση σε εξωτερικούς χώρους.	Noise emissions – Outdoors emissions
Min Dec. No 13586/724/2006 (ΦΕΚΒ384/Β/28.3.2006)	Καθορισμός μέτρων, όρων και μεθόδων για την αξιολόγηση και τη διαχείριση του θορύβου στο περιβάλλον, σε συμμόρφωση με τις διατάξεις της οδηγίας 2002/49/ΕΚ «σχετικά με την αξιολόγηση και τη διαχείριση του περιβαλλοντικού θορύβου» του Συμβουλίου της 25.6.2002.	Noise emissions – Environmental Noise management.
P.D. 149/2006 (ΦΕΚ 159/Α/28.7.2006)	Ελάχιστες προδιαγραφές υγείας και ασφάλειας όσον αφορά την έκθεση των εργαζομένων σε κινδύνους προερχόμενους από φυσικούς παράγοντες (θόρυβος) σε εναρμόνιση με την οδηγία 2003/10/ΕΚ.	Noise emissions in the workplace acc. to 2003/10/EC.
Min Dec. No. Η.Π. 9272/471/2007 ΦΕΚ286/Β/2.3.2007)	Τροποποίηση του άρθρου 8 της υπ' αριθμ. 37393/2028/ 2003 κοινής υπουργικής απόφασης (Β' 1418), σε συμμόρφωση με τις διατάξεις της οδηγίας 2005/88/ΕΚ «για την τροποποίηση της οδηγίας 2000/14/ΕΚ για την προσέγγιση των νομοθεσιών των κρατών μελών σχετικά με την εκπομπή θορύβου στο περιβάλλον από εξοπλισμό προς χρήση σε εξωτερικούς χώρους», του Συμβουλίου της 14ης Δεκεμβρίου 2005.	Noise emissions – Outdoors emissions – Amendment acc. to 2000/14/EC.
Joint Min Dec. No 1471/Β/9.10.2003	Έγκριση Περιφερειακού Πλαισίου Χωροταξικού Σχεδιασμού και Αειφόρου Ανάπτυξης Περιφέρειας Ανατολικής Μακεδονίας - Θράκης.	Approval of the Regional Plan for Spatial Design and Sustainable Development for the Region of Eastern Macedonia and Thrace.
Min Dec. No ΥΠΠΕ/Α1/Φ19/17176/69 6/19-6-1979	Κήρυξη Αρχ. Χώρου προστασίας. Βυζαντινό φρούριο ΝΔ του χωρίου Νυμφαία Κομοτινής.	Byzantine protected Archaeological site declaration.
Min. Dec. 1958 (ΦΕΚ 21/Β/12)	Κατάταξη δημόσιων και ιδιωτικών έργων και δραστηριοτήτων σε κατηγορίες και υποκατηγορίες σύμφωνα με το Άρθρο 1 παράγραφος 4 του Ν. 4014/21.09.2011 (Φ.Ε.Κ. Α' 209/2011)»	Categorization of public and private projects acc. to LAW 4014 / 21 09 11 (Φ.Ε.Κ. Α' 209/2011)

Reference	Greek Title	Refers To
Min. Dec. 15277 (ΦΕΚ 1077/Β/12 Ιανουαρίου 2012)	Εξειδίκευση διαδικασιών για την ενσωμάτωση στις Αποφάσεις Έγκρισης Περιβαλλοντικών Όρων ή στις Πρότυπες Περιβαλλοντικές Δεσμεύσεις της προβλεπόμενης από τις διατάξεις της Δασικής Νομοθεσίας έγκρισης επέμβασης, για έργα και δραστηριότητες κατηγοριών Α και Β της υπουργικής απόφασης με αρ. 1958/2012 (ΦΕΚ21/Β'/13.1.2012), σύμφωνα με το άρθρο 12 του Ν. 4014/2011.	Incorporation of Forestry Law intervention approval into Environmental Permits
<b>EUROPEAN REGULATIONS - DIRECTIVES</b>		
85/337/EEC	Ευρωπαϊκή Οδηγία IPPC	Council Directive of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment
96/61/EC	Ευρωπαϊκή Οδηγία	Council Directive of 24 September 1996 concerning integrated pollution prevention and control
97/11/EC	Ευρωπαϊκή Οδηγία	Council Directive of 3 March 1997 amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment
2003/35/EC	Ευρωπαϊκή Οδηγία	Directive of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC
<b>INTERNATIONAL CONVENTIONS</b>		
	Σύμβαση AARHUS (1998)	Aarhus Convention (1998) Convention on Access to Information Public Participation in Decision-making and Access to Justice in Environmental Matters Ratified by Greece on 27/01/2006

Reference	Greek Title	Refers To
	Σύμβαση ESPOO (1991)	Espoo Convention (1991): Convention on Environmental Impact Assessment in a Transboundary Context Ratified by Greece on 24/02/1998

### 3.

#### **Applicable Acts and Regulations on DSP-PP - Bulgaria**

The following laws and regulations shall be followed for the development of the Detailed Spatial Plan – Parcelling Plan (DSP-PP) for the Bulgarian section of the project:

- Spatial Development Act of the Republic of Bulgaria
- Spatial Development Act Ordinance No. 7, 2004, on the Rules and Norms for Spatial Development
- Spatial Development Act Ordinance No. 8, 2001, on the Scope and Content of Spatial Development Schemes and Plans
- Agricultural Land Conservation Act of the Republic of Bulgaria (ALCA)
- Regulation on Application of ALCA of the Republic of Bulgaria (RAALCA)
- Forestry Act of the Republic of Bulgaria (FA)
- Regulation on the Application of the FA of the Republic of Bulgaria (RAFA)

### 4.

#### **Surveying and Cadastral Legislation - Greece**

The following laws and regulations shall be followed for the development of Surveying and Cadastral Documentation for the Greek section of the project:

- PRESIDENTIAL DECREE (P.D.) 696/1974, ΦΕΚ 301/A/8-10-1974: Engineering fees for the Design, Supervision, Delivery, etc. of Transportation, Hydraulic and Building projects, as well as Surveying, Cadastral and Cartographic works and related technical specifications
- PRESIDENTIAL DECREE (P.D.) 515/1989, ΦΕΚ 219/A/1989: Modification, supplementation and repeal of articles of the first book of P.D. 696/74
- LAW 2882/2001, ΦΕΚ 17/A/06-02-2001: Code of properties coercive expropriation
- LAW 3325/2005, ΦΕΚ 17/A/06-02-2001: Establishment and operation of industrial installations in the context of sustainable development and other provisions



## 5. Legislation for Natural Gas and Industrial Installations

### 5.1 Project Section in Bulgaria

#### Bulgarian Legislation

The following laws and regulations shall be followed for the development of the FEED in relation to the pipeline, block valves, pigging facilities, metering and automatic gas regulating installations and associated electrical, instrumentation and communications equipment:

Reference	Description
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 2/2004	Minimum Requirements for Health and Safety in Carrying Out Construction Work
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 4/2004	Scope and content of investment projects
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 6/2004	Technical Rules and Standards for Design, Construction and Use of Facilities and Transport Facilities, Storage, Distribution and Supply of Natural Gas (SG. 107 of 2004).
MINISTRY OF ECONOMY AND ENERGY, MINISTRY OF AGRICULTURE AND FORESTRY, MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 16/2004	Easements of Energy Facilities (SG. 88 of 2004).
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. TBC/2004	Structure and Safe Operation of Transmission and Distribution Pipelines and Facilities, Installations and Equipment (SG. 67 of 2004)

#### European Directives and Regulations

Reference	Refers to
Regulation (EU) No 994/2010	Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC Text with EEA relevance
Directive 2009/73/EC	Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC
Regulation (EC) No 715/2009	Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005
Regulation (EC) No 713/2009	Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators

### 5.2

#### Project Section in Greece

#### Greek Legislation

Reference	Refers to
Law No. 4001, ΦΕΚ 179/A	Law for the Operation of Electricity and Gas energy markets, for the Research, Production and transmission networks of hydrocarbons and other settings.
Law No. 3734/09, (ΦΕΚ -8/A/28-1-09)	Promotion of cogeneration of two or more useful forms of energy and other provisions (Ministry of Development other issues arrangements)
Law 3325/2005" (ΦΕΚ 68/A/11-03-2005)	Establishment and operation of industrial installations in the framework of sustainable development and other provisions
Law No. 3428 (ΦΕΚ Α' 313/27.12.2005)	Liberalization of Natural Gas Market
Presidential Decrees 33 and 34 (ΦΕΚ Α' 31 / 20.02.2007)	"Hellenic Gas Transmission System Operator SA" - DESFA Establishment (Pursuant to the provisions of the aforementioned law No. 3428)
Ministerial Decision No 1227 (ΦΕΚ Β' 135 /	Procedure for the conclusion and the contents of the standard transmission contract for the access

05.02.2007	and use of the Transmission System. (Pursuant to the provisions of the aforementioned law No. 3428)
Ministerial Decision 4955, (ΦΕΚ Β' 360/27.03.2006)	Ministerial Decision for the definition of tariffs for gas and gasification of liquefied natural gas (Pursuant to the provisions of the aforementioned law No. 3428)
Δ/23344(ΦΕΚ Β' 1781/7.12.2006)	Amendment of Ministerial Decision 4955
Δ1/5037(ΦΕΚ Β' 379/20.03.2007)	Amendment of Ministerial Decision 4955
Δ1/Α/1110/9860(ΦΕΚ Β' 747/31.05.2010)	Amendment of Ministerial Decision 4955
Ministerial Decision Δ1/Γ/1588 (ΦΕΚ Β' 60/24.01.2007)	List of Hellenic Gas Transmission System planned expansions (Pursuant to the provisions of the aforementioned law No. 3428)
Ministerial Decision Δ1/Α/5346 (ΦΕΚ Β' 379/01.04.2010)	Hellenic Gas Transmission System Management Code (Pursuant to the provisions of the aforementioned law No. 3428)
Ministerial Decision Δ1/Α/5816Β'(ΦΕΚ.Β' 451/16.04.2010)	Regulation for Transmission System Users Registration (Pursuant to the provisions of the aforementioned law No. 3428)
Ministerial Decision Δ1/Α/5815(ΦΕΚ Β' 464/19.04.2010)	Regulation for Permitting (Pursuant to the provisions of the aforementioned law No. 3428)
Δ1/Α/7754 (ΦΕΚ Β' 584/6.5.2010)	Hellenic Gas Transmission System Measurements Regulation (Pursuant to the provisions of the aforementioned law No. 3428)
Regulator Authority Decision(ΦΕΚ Β' 480/20.04.2010)	Standard Contracts (Pursuant to the provisions of the aforementioned law No. 3428)
Αριθμ. Δ3/Α/οικ. 4303 ΠΕ 26510 ΦΕΚ 603/Β/12	Technical Regulation - for NG Systems with operating pressure above 16 bar «Τεχνικός Κανονισμός -«Συστ/τα μεταφοράς Φυσικού Αερίου με Μέγιστη Πίεση Λειτουργίας άνω των 16 bar».
LAW 3982/2011(ΦΕΚ 143/Α/ 17.06.2011).	Licensing of technical professional and manufacturing activities and business farms «Απλοποίηση της αδειοδότησης τεχνικών επαγγελματικών και μεταποιητικών δραστηριοτήτων και επιχειρηματικών πάρκων»

#### European Directives and Regulations

Reference	Refers to
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Regulation (EU) No 994/2010	Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC Text with EEA relevance
Directive 2009/73/EC	Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC
Regulation (EC) No 715/2009	Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005
Regulation (EC) No 713/2009	Regulation (EC) No 713/2009 of the European Parliament and of the Council of 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators

## 6. Norms and Legislations – Pipeline and Facilities FEED

### 6.1 Pipeline, Piping and Mechanical Works

Reference	Description
67/02.08.2004 – Bulgaria	Ordinance on the Structure and Safe Operation of Gas Transmission and Gas Distribution Pipelines, Natural Gas Facilities, Installations and Appliances
107/07.12.2004 - Bulgaria	Ordinance No. 6 dated 25.11.2004 on Technical Rules related to Design, Construction and Use of Installations for Natural Gas Transmission, Storage, Distribution and Supply of Natural Gas
PED 97/23/EC	Pressure Equipment Directive
EN 287-1	Qualification on test of welders. Fusion welding. Steels
EN 288-9	Approval of welding procedures for metallic materials.
EN 473	Non-destructive testing – Qualification and certification of NDT personnel – General principles
EN 571-1	Non – Destructive Testing – Penetrant testing – General Principles
EN 970	Non destructive examination of fusion welds-visual examination
EN 1289	Non-destructive examination of welds. Penetrant testing of welds – Acceptance levels
EN 1290	Non-destructive examination of welds. Magnetic particle examination of welds
EN 1291	Non-destructive examination of welds. Magnetic particle examination of welds - Acceptance levels
EN 1435	Non-Destructive Examination of welds – Radiographic examination of weld joints
EN 1515-3	Flanges and their joints – Bolting – Part 3: Classification of bolt materials for steel flanges, class designated
EN 1594	Gas Supply Systems – Pipelines - Maximum operating pressure over 16 bar - Functional Requirements
EN 1712	Non destructive testing of welds – Ultrasonic testing of welded joints - Acceptance levels
EN 1714	Non destructive testing of welds – Ultrasonic testing of welded joints
EN 1759-1	Flanges and their Joints – Circular flanges for pipes, valves, fittings and accessories, Class designated – Part 1: Steel Flanges, NPS 1/2 to 24
EN 10160	Ultrasonic testing of steel flat product of thickness equal to or greater than 6 mm (reflection method)
EN 10204	Metallic Products – Types of Inspection Documents

Reference	Description
EN 10208-2	Steel pipes for pipelines for combustible fluids – Technical delivery conditions – Part:2 Pipes for requirement class B
EN 10253-2	Butt-welding pipe fittings. Non alloy and ferritic alloy steels with specific inspection requirements.
EN 10274	Metallic Materials-Drop Weight tear test
EN 10288	Steel tubes and fittings for onshore and offshore pipelines – External two layer extruded polyethylene based coatings
EN 10289	Steel tubes and fittings for onshore and offshore pipelines – External liquid applied epoxy and epoxy-modified coatings
EN 10290	Steel tubes and fittings for onshore and offshore pipelines – External liquid applied polyurethane and polyurethane -modified coatings
EN 10301	Steel tubes and fittings for on and offshore pipelines-Internal coating for the reduction of friction for conveyance of non corrosive gas
EN ISO 10497	Testing of valves - Fire type testing requirements
EN 12068	Cathodic protection – External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials
EN 12327	Gas supply systems. Pressure testing, commissioning and decommissioning procedures. Functional requirements
EN 12560-2	Flanges and their joints – Gaskets for class-designated flanges – Part 2: Spiral wound gaskets for use with steel flanges.
EN 12569	Industrial valves. Valves for chemical and petrochemical process industry. Requirements and tests
EN 12732	Gas Supply Systems – Welding steel pipe work – Functional requirements
EN 13445	Unfired Pressure Vessels
EN 13480	Metallic industrial piping
EN 13942	Petroleum and natural gas industries. Pipeline transportation systems. Pipeline valves
EN 14141	Valves for natural gas transportation in pipelines-Performance requirements and tests
EN 14870-1:2004	Petroleum and Natural Gas Industries. Induction bends, fittings and flanges for pipeline transportation systems-Part 1: Induction Bends
EN 14870-2:2004	Petroleum and Natural Gas Industries. Induction bends, fittings and flanges for pipeline transportation systems-Part 2: Fittings
EN 14870-3:2006	Petroleum and Natural Gas Industries. Induction bends, fittings and flanges for pipeline transportation systems-Part 3: Flanges
EN ISO 15610	Specification and qualification of welding procedures for metallic materials – Qualification based on tested welding consumables

Reference	Description
EN ISO 15611	Specification and qualification of welding procedures for metallic materials. Qualification based on previous welding experience.
EN ISO 15612	Specification and qualification of welding procedures for metallic materials. Qualification by adoption of a standard welding procedure.
EN ISO 15613	Specification and qualification of welding procedures for metallic materials – Qualification based on pre-production welding test
EN 15614-1	Specification and qualification of welding procedures for metallic materials. Welding procedure test
EN ISO 8501-1	Preparation for steel substrates before Application of Paints and related Products
EN 1714	Non-destructive testing of welds – Ultrasonic testing of welded joints
EN ISO 15609-1	Specification and Approval of Welding Procedures for metallic Materials (formerly EN 288- Part 2)
ISO 898-1 & -2	Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1: Bolts, screws and studs – Part 2: Nuts with specified proof load values; coarse thread.
EN ISO 2808	Paints and Varnishes – Determination of Film Thickness
EN ISO 9001	Quality Management Systems – Requirements
EN ISO 21809	Petroleum and natural gas industries – External coatings for buried or submerged pipelines used in pipeline transportation systems
ISO 13443	Natural Gas – Standard reference conditions
ASME B31.3	Process Piping
ASME B31.8	Gas Transmission and Distribution Piping Systems
ASME B36.10M	Welded and Seamless Wrought Steel Pipe

## 6.2

### Control and Instrumentation

Reference	Description
<b>EU LEGISLATION</b>	
ATEX 94/9/EC	Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres.
ATEX 99/92/EC	Safety of Installation. (ATEX 137)
PED 97/23/EC	Pressure Equipment Directive
Directive 89-336 CEE	Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility
<b>CODES AND STANDARDS</b>	
API RP 520	Sizing, Selection and Installation of Pressure Relieving Devices in Refineries, Part I and II

Reference	Description
API RP 526	Flanged steel safety relief valves
ASME B16.10	Face-to-face and end-to-end dimensions of valve
ASME B1.20.1	Pipe Threads, General Purpose
EIA -359	Standard Colours for Colour Identification and Coding
EIA RS 232C	Interface between data terminal equipment employing serial binary data interchange
EN 837-1	Pressure Gauges-Part 1: Bourdon Tube
EN 5026	Cable glands for electrical installations
EN 10143	Continuously hot-dip coated steel sheet and strip. Tolerances on dimensions and shape
EN 50173-1	Information technology — Generic cabling systems
EN 50267	Common test methods for cables under fire conditions.
EN 55022	Information technology equipment - Radio disturbance characteristics - Limits
EN 60079	Specification for Electrical Apparatus for Explosive Gas Atmospheres - Electrical Installations in Hazardous Areas.
EN 60228	Conductors of Insulated Cables
EN 60269	Low Voltage Fuses
EN 60332	Tests on electric and optical fibre cables under fire conditions
EN 60529	Classification for degrees of protection provided by enclosures (IP rating)
EN 60670	Boxes and enclosures for electrical accessories for household and similar fixed electrical installations.
EN 60793-1-1	Optical fibres – Part 1-1: Measurement methods and test procedures – General and guidance
EN 60794-1-2	Optical fibre cables Part 1-2: Generic specification Basic optical cable test procedures
EN 61000	Electromagnetic Compatibility
EN 61386-1	Specification for conduit systems for cable management. General requirements
EN 61508-1	Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems-Part 1: General Requirements
EN 61508-2	Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems-Part 2: Requirements for Electrical/Electronic/Programmable Electronic Safety-Related Systems
EN 61515	Mineral insulated thermocouple cables and thermocouples
EN 62040	Uninterruptible power supply systems

Reference	Description
EN 62337	Commissioning of Electrical, Instrumentation and Control Systems in the Process Industry-Specific Phase and milestones
EN ISO 3740	Determination of sound power levels of noise sources
EN ISO 3746	Acoustics - Determination of Sound Power Levels and Sound Energy Levels of Noise Sources using Sound Pressure – Survey Method using an Enveloping Measurement Surface over a Reflecting Plane
EN ISO 5210	Industrial Valves – Multi-turn Valve Actuator attachments
EN ISO 5211	Industrial Valves – Part-turn Valve Actuator attachments
IEC 60050-195	Earthing and Protection Against Electric Shock
IEC 60079-0	Electrical Apparatus for explosive gas atmosphere-Part 0: General Requirements;
IEC 60079-1	Electrical Apparatus for explosive gas atmosphere-Part 1: Flameproof enclosures “d”;
IEC 60079-7	Electrical Apparatus for explosive gas atmosphere-Part 7: Increased Safety “e”;
IEC 60079-10-1	Electrical Apparatus for explosive gas atmosphere-Part10: Classification of hazardous areas;
IEC 60079-11	Electrical Apparatus for explosive gas atmosphere-Part11: Intrinsically Safe ‘i’;
IEC 60079-14	Electrical Apparatus for Explosive Gas Atmospheres. Electrical installations in hazardous areas.
IEC 60079-15	Electrical Apparatus for explosive gas atmosphere-Part15: Construction, Test and marking of type of protection ‘n’;
IEC 60297	Mechanical structures for electronic equipment - Dimensions of mechanical structures of the 482,6 mm (19 in) series
IEC 60331	Fire Resisting Characteristics of Electrical Cables.
IEC 60364	Low Voltage Electrical Installations
IEC 60751	Industrial platinum resistance thermometers and platinum temperature sensors
IEC 60770	Transmitters for use in Process Control Systems
IEC-60811	Common Test Methods for Insulating and Sheathing Materials of Electric Cables
IEC 60849:1998	Sound Systems for Emergency Purposes
IEC 60874	Connector for Optical Fibres and Cables.
IEC 60885	Electrical Test Methods for Electric Cables.
IEC 61000-4-3	Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment

Reference	Description
IEC 61073-1	Fibre optic interconnecting devices and passive components - Mechanical splices and fusion splice protectors for optical fibres and cables - Part 1: Generic specification
IEC 61082	Preparation of documents used in electro-technology
IEC 61511-1	Functional safety - Safety instrumented systems for the process industry sector - Framework, definitions, system, hardware and software requirements
IEC 61643	Low Voltage Surge Protective Devices
IEC 62305	Protection against Lightning
IEEE 730	Software Quality Assurance Plan
IEEE 802.3u	Compliant 100Base-TX twisted pair interfaces, with RJ-45 connector
IEEE 802.3z	Compliant 1000Base-T twisted pair interfaces, with RJ-45 connector, port-based VLAN (IEEE 802.1Q)
IEEE 802.3an-2006	Specific requirements Part 3, Amendment 1: Physical Layer and Management Parameters for 10 Gbit/s Operation
IEEE 802.3af-2003	Power over Ethernet Standard
IEEE 802.3at-2009	Power over Ethernet Plus Standard
IEEE 829	Software Test Documentation
IEEE 830	Software Requirement Specification
ISO 1461	Hot Dip Galvanised Coatings on Iron and Steel Articles
ISO 80000-1	SI Units and recommendation for use of their multiples and of certain other units
ISO/IEC 11801	Information technology — Generic cabling for customer premises
ISO/IEC 27002	Information Technology – Code of Practice for Information Security Management
ITU G.655	Characteristics of a non-zero dispersion-shifted single-mode optical fibre and cable
ITU G.692	Optical interfaces for multi-channel systems with optical amplifiers
ITU G.702	Digital hierarchy bit rates
ITU G.703	Physical/electrical characteristics of hierarchical digital interfaces.
ITU G.704	Synchronous Frame Structures Used at Primary and Secondary Hierarchical Levels.
ITU G.706	Frame alignment and cyclic redundancy check (CRC) procedures relating to basic frame structures defined in Recommendation G.704.
ITU G.707	Network node interface for the synchronous digital hierarchy (SDH). This Recommendation includes the withdrawn G.708, and G.709 Recommendations
ITU G.711	Pulse code modulation (PCM) of voice frequencies

Reference	Description
ITU G.712	Transmission performance characteristics of pulse code modulation channels
ITU G.731	Primary PCM multiplex equipment for voice frequencies.
ITU G.732	Characteristics of primary PCM multiplex equipment operating at 2048 kbit/s.
ITU G.735	Characteristics of primary PCM multiplex equipment operating at 2048 kbit/s and offering synchronous digital access at 384 kbit/s and/or 64 kbit/s.
ITU G.737	Characteristics of an external access equipment operating at 2048 kbit/s offering synchronous digital access at 384 kbit/s and/or 64 kbit/s.
ITU G.781	Synchronization layer functions
ITU G.783	Characteristics of SDH
ITU G.784	SDH Management
ITU G.811	Timing characteristics of primary reference clocks
ITU G.812	Timing requirements of slave clocks suitable for use as node clocks in synchronization networks
ITU G.821	Error performance of an international digital connection operating at a bit rate below the primary rate and forming part of an integrated services digital network.
ITU G.823	The control of jitter and wander within digital networks which are based on the 2048 kbit/s hierarchy.
ITU G.921	Digital sections based on the 2048 kbit/s hierarchy.
ITU G.957	Optical interfaces for equipments and systems relating to the synchronous digital hierarchy.
TIA/EIA 455	Test Procedures for Fibre Optic Fibres, Cables, Transducers, Connecting and Terminating Devices
TIA/EIA-568-B.2-10	Addendum 1-Transmission Performance Specifications for 4-pair 100-Ω Augmented Category 6 Cabling
TIA 598	Standard for Colour Coding of Fibre Optic Cables
SAE AS 4059	Aerospace Fluid Power - Cleanliness Classification for Hydraulic Fluids

### 6.3

#### Cathodic Protection

Reference	Description
EN 12954:2001	“Cathodic Protection of buried or immersed metallic structures – General principles and application for pipelines”

EN EN 50443	Railway applications – Fixed installations - Effects of electromagnetic interference caused by high voltage a.c. railway on pipelines – Admissible values and protection measures
EN 15280:2006	“Evaluation of a.c. corrosion likelihood of buried pipelines. Application to cathodically protected pipelines”
EN 13509:2003	Cathodic Protection Measurements Techniques
EN EN 50162	Protection against Corrosion by Stray Current from direct-current systems
EN 12068:1999	Cathodic Protection, External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection, tapes and shrinkable materials
DIN 50929 Teil 3	Possibility of Corrosion of Metallic Material when subject to Corrosion from Outside
AfK-Empfehlung Nr.3, ZfGW-Verlag, November 2007	Measures for the Installation and Operation of Pipelines in the vicinity of three-phase high voltage systems and single line traction systems
AfK-Empfehlung Nr.1, ZfGW-Verlag, April 1987	Anleitung zur Berechnung der in Fernmeldeleitungen durch Starkstromleitungen induzierten Spannungen
EN 1594	Gas supply systems - Pipelines for maximum operating pressure over 16 bar – Functional Requirements
NACE SP0286	Electrical Isolation of Cathodically Protected Pipelines
NACE SP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems



6.4

Electrical Works

Bulgarian Legislation

Reference	Description
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 1/2010	Design, Construction and Maintenance of Electrical Installations for Buildings in Low Voltage
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 4/2010	Lightning Protection of Buildings, Outdoor Facilities and Open Spaces

Greek Legislation

Reference	Description
MINISTERIAL DECISION 50/12081/642/2006 F A – GG B / 1222/5.9.2006	Security Home Electrical Installations (E.I.E.). Introduction of a Differential Current Installation of Construction and Fundamental Grounding
MINISTERIAL DECISION Δ6/B/14826, OJ 1122, 17.06.2008	Measures to Improve Energy Efficiency in the Public Sector

European Directives (common for both countries)

Reference	Description
94/9/EC ATEX	Equipment Explosive Atmospheres Directive
97/23/EC PED	Pressure Equipment Directive
2006/42/EEC	Machinery
2006/95/EEC LVD	Low Voltage Directive
2004/108/EEC EMC	Electromagnetic Compatibility Directive

D. International Codes and Standards (common for both countries)

Reference	Description
EN 40	Lighting columns
EN 12464-1	Light and lighting - Lighting of Work places – Part 1: Indoor Work Places
EN 12464-2	Light and lighting - Lighting of Work places – Part 2: Outdoor Work Places
EN 50086	Specification for Conduit Systems for Cable Management
EN 50162	Protection against Corrosion by Stray Current from Direct-Current Systems
EN 50164-1	Lightning Protection Components (LPC) - Part 1: Requirements for Connection Components
EN 50164-2	Lightning Protection Components (LPC) - Part 2: Requirements for Conductors & Earth Electrodes
EN 50164-3	Lightning Protection Components (LPC) - Part 3: Requirements for Isolating Spark Gaps
EN 50164-4	Lightning protection Components (LPC) ) - Part 4: Requirements for conductor fasteners
EN 50164-5	Lightning protection Components (LPC) - Part 5: Requirements for earth electrode inspection housings and earth electrode seals
EN 50164-6	Lightning protection Components (LPC) - Part 6: Requirements for lightning strike counters
EN 50164-7	Lightning protection Components (LPC) - Part 7: Requirements for earthing enhancing compounds
EN 50262	Cable Glands for Electrical Installations
EN 50267-2-1	Common Test Methods for Cables Under Fire Conditions - Tests on Gases Evolved During Combustion of Materials From Cables - Part 2-1: Procedures - Determination of the Amount of Halogen Acid Gas
EN 50267-2-2	Common Test Methods for Cables Under Fire Conditions - Tests on Gases Evolved During Combustion of Materials From Cables - Part 2-2: Procedures - Determination of Degree of Acidity of Gases for Materials by Measuring pH and Conductivity
EN 50396	Non Electrical Test Methods for Low Voltage Electric Cables
EN 50443	Railway Applications – Fixed Installations - Effects of Electromagnetic Interference caused by High Voltage A.C. Railway on Pipelines – Admissible Values and Protection Measures



Reference	Description
EN 55011	Limits and Methods of Measurement of Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment
EN 55022	Information Technology Equipment - Radio Disturbance Characteristics -Limits and Methods of Measurement
EN 60079-0	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
EN 60079-1	Electrical Apparatus for Explosive Gas Atmospheres - Part 1: Flameproof Enclosures d
EN 60079-7	Electrical Apparatus for Explosive Gas Atmospheres - Part 7: Increased safety e
EN 60079-10	Electrical Apparatus for Explosive Gas Atmospheres - Part 10: Classification of Hazardous Areas
EN 60079-14	Electrical apparatus for explosive gas atmospheres – Part 14: Electrical installations in Hazardous areas (other than mines)
EN 60079-15	Electrical Apparatus for Explosive Gas Atmospheres – Part 15: Equipment Protection by Type of Protection "n"
EN 60079-25	Electrical Apparatus for Potentially Explosive Atmospheres - Part 25: Intrinsically Safe Electrical Systems-I
EN 60086	Primary Batteries
EN 60099-4	Surge Arresters- Part 4:Metal Oxide Surge Arresters without Gaps for A.C. Systems
EN 60099-5	Surge Arresters- Part 5:Selection & Application Recommendations
EN 60146	Semiconductor Convertors - General Requirements and Line Commutated Convertors
EN 60228	Conductors of Insulated Cables
EN 60332-1	Tests on Electrical and Optical Cables Under Fire Conditions - Test for a Vertical Flame Propagation for a Single Insulated Wire or Cable
EN 60423	Conduits for Electrical Purposes. Outside Diameters of Conduits for Electrical Installations and Threads for Conduits and Fittings
EN 60439-2	Low-Voltage Switchgear and Controlgear Assemblies - Part 2: Particular Requirements for Busbar Trunking Systems (Busways)
EN 60439-3	Low-Voltage Switchgear and Controlgear Assemblies - Part 3: Particular Requirements for Low-Voltage Switchgear and Controlgear Assemblies

Reference	Description
EN 60439-4	Low-Voltage Switchgear and Controlgear Assemblies - Part 4: Particular Requirements for Assemblies for Construction Sites (ACS)
EN 60439-5	Low-Voltage Switchgear and Controlgear Assemblies - Part 5: Particular Requirements for Assemblies Intended to be Installed Outdoors in Public Places
EN 60529	Degrees of Protection provided by Enclosures (IPCode)
EN 60598	Luminaries
EN 60617	Graphical Symbols for Diagrams
EN 60896	Stationary Lead-Acid Batteries
EN 60947-1	Specification for Low-Voltage Switchgear & Controlgear- Part 1: General Rules
EN 60947-2	Specification for Low-Voltage Switchgear & Controlgear- Part 2: Circuit-Breakers
EN 60947-3	Specification for Low-Voltage Switchgear & Controlgear- Part 3: Switches, Disconnectors, Switch-Disconnectors and Fuse-Combination Units
EN 60947-4-1	Specification for Low-Voltage Switchgear & Controlgear- Part 4-1: Contactors and Motor-Starters. Electromechanical Contactors and Motor-Starters
EN 60947-6-1	Specification for Low-Voltage Switchgear & Controlgear- Part 6-1: Multiple Function Equipment. Automatic Transfer Switching Equipment
EN 61000	Electromagnetic compatibility (EMC)
EN 61386	Conduit Systems for Cable Management
EN 61537	Cable Tray Systems and Cable Ladder Systems for Cable Management
EN 61557-12	Electrical Safety in Low Voltage Distribution Systems up to 1000 V AC and 1500 V D.C. - Equipment for Testing, Measuring or Monitoring of Protective Measures - Part 12: Performance Measuring and Monitoring Devices (PMD)
EN 61643-11	Low Voltage Surge Protective Devices – Part 11: SPDs Connected to Low Voltage Power Distribution Systems – Performance Requirements and Testing Methods
EN 61643-21	Low Voltage Surge Protective Devices – Part 21: SPDs Connected to Telecommunication and Signaling Networks – Performance Requirements and Testing Methods

Reference	Description
EN 62040	Uninterruptible Power Systems (UPS)
EN 62305	Protection Against Lightning
EN ISO 9001	Quality Management Systems
EN ISO 14001	Environmental Management Systems - Requirements with Guidance for Use
EN ISO 17025	General Requirements for the Competence of Testing and Calibration Laboratories
EN ISO3740	Determination of sound power levels of noise sources
EN ISO 3746	Acoustics - Determination of Sound Power Levels and Sound Energy Levels of Noise Sources using Sound Pressure – Survey Method using an Enveloping Measurement Surface over a Reflecting Plane
CENELEC EN 60216	Electrical Insulating Materials - Properties of Thermal Endurance
CENELEC HD 308 S2	Identification of Cores in Cables and Flexible Cords
CENELEC HD 384	Requirements for Electrical Installations
CENELEC HD 60364	Electrical Installations of Buildings
IEC 60287	Electric Cables - Calculation of the Current Rating
IEC 60331-11	Tests for Electric Cables under Fire Conditions - Circuit Integrity - Part 11: Apparatus - Fire Alone at a Flame Temperature of at least 750 Degree C
IEC 60331-21	Tests for Electric Cables under Fire Conditions - Circuit Integrity - Part 21: Procedures and Requirements - Cables of Rated Voltage up to and Including 0,6 / 1,0 KV
IEC 60332-3-22	Tests on Electric and Optical Fibre Cables under Fire Conditions - Part 3-22: Test for Vertical Flame Spread of Vertically-Mounted Bundled Wires or Cables - Category A
IEC 60502	Power Cables with Extruded Insulation and Their Accessories for Rated Voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV)
IEC 60664	Insulation Coordination for Equipment within Low-Voltage Systems
IEC 60754-1	Test on Gases Evolved During Combustion of Materials from Cables - Part 1: Determination of the Amount of Halogen Acid Gas
IEC 61439-1	Low-Voltage Switchgear and Controlgear Assemblies- Part 1: General Rules

Reference	Description
IEC 61439-2	Low-Voltage Switchgear and Controlgear Assemblies- Part 2: Power Switchgear and Controlgear Assemblies
IEC 61643-12	Low Voltage Surge Protective Devices – Part 12: SPDs Connected to Low Voltage Power Distribution Systems – Selection and Application Principles
IEC 61643-22	Low Voltage Surge Protective Devices – Part 22: SPDs Connected to Telecommunication and Signaling Networks – Selection and Application Principles
IEC 62548	Design Requirements for Photovoltaic (PV) Arrays
IEC 62561-1	Lightning Protection Components (LPC) - Part 1: Requirements for Connection Components
IEC 62561-2	Lightning Protection Components (LPC) - Part 2: Requirements for Conductors & Earth Electrodes
IEC 62561-3	Lightning Protection Components (LPC) - Part 3: Requirements for Isolating Spark Gaps
IEC 62561-4	Lightning protection Components (LPC) ) - Part 4: Requirements for conductor fasteners
IEC 62561-5	Lightning protection Components (LPC) - Part 5: Requirements for earth electrode inspection housings and earth electrode seals
IEC 62561-6	Lightning protection Components (LPC) - Part 6: Requirements for lightning strike counters
IEC 62561-7	Lightning protection Components (LPC) - Part 7: Requirements for earthing enhancing compounds
API 505	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified Class 1 Zone 0, Zone 1 and Zone 2

6.5

Civil and Structural Works

Bulgarian Legislation

Reference	Description
State Gazette No. 1/2.01.2001 and amendments	Spatial Development Act of the Republic of Bulgaria
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 2/2007	Design Of Buildings And Structures In Seismic Areas (Bulgarian Seismic Code)
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 3/2004	Basics of Structural Design Of Buildings and their Impacts
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 7/2004	Energy Efficiency, Heat and Energy Saving in Buildings
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 2/2008	Design, Implementation, Control and Acceptance of Waterproofing Systems for Buildings and Facilities
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 4/2009	Design, Implementation and Maintenance of Buildings in Accordance with the Requirements for Access for the Population, Including People with Disabilities
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 6/2004	Technical Rules and Standards for Design, Construction and Use of Facilities and Transport Facilities, Storage, Distribution and Supply of Natural Gas

Reference	Description
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 2/2004	Minimum Requirements for Health and Safety in Carrying Out Construction Work

Greek Legislation

Reference	Description
ELOT 788	Emulsion paints
ELOT 808	Vitreous china washdown W.C. pans with horizontal outlet - Materials, quality, performance and dimensions other than connecting dimensions
ELOT 864	Enamel, alkyd, gloss
ELOT 884	Paints of organic solvent type for exterior walls
ELOT 919	Resin alkyd solutions
ELOT 1415	Guidelines of water proofing bituminous membranes in buildings
ELOT 1421	Steel for the reinforcement of concrete - Weldable reinforcing steel
ΠΕΤΕΠ 03-02-00	Temporary National Technical Specification for Hollow Clay Brick Masonry
ΠΕΤΕΠ 03-03-01-00	Temporary National Technical Specification for Plastering Mortars Prepared on-Site
ΠΕΤΕΠ 03-06-01-00	Temporary National Technical Specification for Roof Waterproofing with Bituminous Membranes
ΠΕΤΕΠ 03-06-02-02	Temporary National Technical Specification for Thermal Insulation of External Walls
ΠΕΤΕΠ 03-08-02-00	Temporary National Technical Specification for Steel Doors and Windows
ΠΕΤΕΠ 03-10-01-00	Temporary National Technical Specification for Painting of Concrete Surfaces
ΠΕΤΕΠ 03-10-03-00	Temporary National Technical Specification for Corrosion Protection and Painting of Steel Surfaces
ΠΕΤΕΠ.05.03.01.00	Temporary National Technical Specification - Road Base Courses of Excavated Material
ΠΕΤΕΠ.05.03.03.00	Temporary National Technical Specification - Road Base Courses of Unbound Aggregates
ΠΕΤΕΠ.05.03.11.04	Temporary National Technical Specification - Asphalt Paving Courses

Reference	Description
ΟΣΜΕΟ	Guidelines for the Design of Roadworks (Egnatia Odos S.A.)
ΦΕΚ 32/Α/1988	Greek Regulation for Fire Resistance Requirements of Buildings
ΦΕΚ 59/Δ/1989	Greek Building Requirements Regulation (Κτιριοδομικός Κανονισμός)
ΦΕΚ 140/Α/2000	Greek General Building Terms Regulation (ΓΟΚ)
ΦΕΚ 169/Α/1998	Building clearances from public roads
ΦΕΚ 179/Α/2011	Section B: Hydrocarbon survey, production and transmission networks – Chapter D: routing and installation of IGI and IGB natural gas pipelines.
ΦΕΚ 212/Α/1996	Greek Construction Health & Safety Regulations
ΦΕΚ 260/Α/1981	Greek Construction Health & Safety Regulations
ΦΕΚ 270/Δ/1985	Greek general building terms for properties outside approved town plan limits
ΦΕΚ 315/Β/1997	KTS 97 - Greek Concrete Technology Code
ΦΕΚ 362/Α/1979	Greek Thermal Insulation Regulation
ΦΕΚ 407/Β/2010	Greek Regulation for the Energy Efficiency of Buildings (KENAK)
ΦΕΚ 1329/Β/2000	EKOS 2000 - Greek Reinforced Concrete Code
ΦΕΚ 1416/Β/2008	KTX 2008 - Greek Concrete Reinforcement Technology Code
ΦΕΚ 2184/Β/1999	EAK 2000 - Greek Seismic Design Code
ΦΕΚ 2692/Β/2008	Temporary Greek Eurocode National Annexes
PPC 5143/29-9-1981	Clearances associated with overhead powerlines 66KV, 150KV and 400KV.

**International Codes and Standards (common for both countries)**

Reference	Description
CEN/TS 14754.01	Curing compounds - Test methods - Part 1: Determination of water retention efficiency of common curing compounds
EN 124	Gully tops and manhole tops for vehicular and pedestrian areas. Design requirements, type testing, marking, quality control
EN 197	Cement
EN 206	Concrete
EN 287	Qualification Test of welders – Fusion Welding

Reference	Description
EN 288	Specification and approval of welding procedures for metallic materials
EN 413	Masonry cement
EN 426	Resilient floor coverings. Determination of width, length, straightness and flatness of sheet material
EN 427	Resilient floor coverings. Determination of the side length, squareness and straightness of tiles
EN 433	Resilient floor coverings - Determination of residual indentation after static loading
EN 434	Resilient floor coverings. Determination of dimensional stability and curling after exposure to heat
EN 435	Resilient floor coverings. Determination of flexibility
EN 439	Welding consumables. Shielding gases for arc welding and cutting
EN 440	Welding consumables. Wire electrodes and deposits for gas shielded metal arc welding of non alloy and fine grain steels. Classification
EN 450	Fly ash for concrete
EN 459	Building lime
EN 480	Admixtures for concrete, mortar and grout - Test methods
EN 495	Flexible sheets for waterproofing - Determination of foldability at low temperature
EN 499	Welding consumables. Covered electrodes for manual metal arc welding of non alloy and fine grain steels. Classification
EN 654	Resilient floor coverings. Semi-flexible polyvinyl chloride tiles. Specification
EN 660	Resilient floor coverings. Determination of wear resistance.
EN 681	Elastomeric seals - Materials requirements for pipe joint seals used in water and drainage applications
EN 685	Resilient, textile and laminate floor coverings. Classification
EN 757	Welding consumables. Covered electrodes for manual metal arc welding of high strength steels. Classification
EN 771.01	Specification for masonry units - Part 1: Clay masonry units
EN 772	Methods of test for masonry units

Reference	Description
EN 822	Thermal insulating products for building applications - Determination of length and width
EN 823	Thermal insulating products for building applications. Determination of thickness
EN 826	Thermal Insulating Products for Buildings Application - Determination of Compression Behaviour.
EN 923	Adhesives - Terms and definitions.
EN 932	Tests for general properties of aggregates
EN 933	Tests for geometrical properties of aggregates
EN 934	Admixtures for concrete, mortar and grout
EN 951	Door leaves - Method for measurement of height, width, thickness and squareness.
EN 952	Door leaves - General and local flatness - Measurement method.
EN 970	Non-destructive examination of fusion welds - Visual examination
EN 998	Specification for mortar for masonry
EN 1008	Mixing water for concrete - Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete
EN 1011	Welding. Recommendations for welding of metallic materials.
EN 1015	Methods of test of mortar for masonry
EN 1026	Windows and doors - Air permeability - Test methods.
EN 1027	Windows and doors - Water tightness - Test methods.
EN 1052	Methods of test for masonry
EN 1081	Resilient floor coverings-Determination of electrical resistance.
EN 1090	Execution of steel structures and aluminium structures
EN 1097	Tests for mechanical and physical properties of aggregates
EN 1107	Flexible sheets for waterproofing
EN 1108	Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of form stability under cyclical temperature changes

Reference	Description
EN 1109	Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of flexibility at low temperature
EN 1110	Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of flow resistance at elevated temperature
EN 1154	Building hardware - Controlled door closing devices - Requirements and test methods
EN 1191	Windows and doors - Resistance to repeat opening and closing –Test method.
EN 1295	Structural design of buried pipelines under various conditions of loading.
EN 1296	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roofing - Method of artificial ageing by long term exposure to elevated temperature
EN 1297	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Method of artificial ageing by long term exposure to the combination of UV radiation, elevated temperature and water
EN 1303	Building hardware. Cylinders for locks. Requirements and test methods
EN 1367	Tests for thermal and weathering properties of aggregates
EN 1372	Adhesives. Test method for adhesives for floor and wall coverings. Peel test
EN 1373	Adhesives. Test method for adhesives for floor and wall coverings. Shear test
EN 1401	Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized polyvinyl chloride (PVC-U)
EN 1418	Welding personnel - Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding of metallic materials
EN 1529	Doors leaves- Height, width, thickness and squareness - Tolerance classes.
EN 1530	Doors leaves - General and local flatness - Tolerance classes
EN 1594	Gas supply systems - Pipelines for maximum operating pressure over 16 bar – Functional Requirements

Reference	Description
EN 1602	Thermal insulating products for building applications - Determination of the apparent density
EN 1634	Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware
EN 1670	Building hardware. Corrosion resistance. Requirements and test methods
EN 1712	Non-destructive examination of welds. Ultrasonic examination of welded joints. Acceptance levels
EN 1744	Tests for chemical properties of aggregates
EN 1745	Masonry and masonry products - Methods for determining design thermal values
EN 1815	Resilient and textile floor coverings-Assessment of static electrical propensity.
EN 1844	Flexible sheets for waterproofing - Determination of resistance to ozone - Plastic and rubber sheets for roof waterproofing
EN 1849	Flexible sheets for waterproofing - Determination of thickness and mass per unit area
EN 1850	Flexible sheets for waterproofing - Determination of visible defect
EN 1902	Adhesives. Test methods for adhesives for floor coverings and wall coverings. Shear test
EN 1906	Building hardware. Lever handles and knob furniture. Requirements and test methods
EN 1916	Concrete pipes and fittings, unreinforced, steel fibre and reinforced
EN 1917	Concrete manholes and inspection chambers, unreinforced, steel fibre and reinforced
EN 1928	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of watertightness
EN 1931	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of water vapour transmission properties
EN 1935	Building hardware. Single-axis hinges. Requirements and test methods
EN 1990	Eurocode – Basis of Structural Design
EN 1991	Eurocode 1: Actions on Structures
EN 1992	Eurocode 2: Design of concrete structures
EN 1993	Eurocode 3: Design of steel structures

Reference	Description
EN 1996	Eurocode 6: Design of masonry structures
EN 1997	Eurocode 7: Geotechnical Design
EN 1998	Eurocode 8: Design of structures for earthquake resistance
EN 10021	General technical delivery requirements for steel and iron products
EN 10025	Hot rolled products of structural steels
EN 10029	Hot rolled steel plates 3 mm thick or above
EN 10034	Structural steel I and H sections - Tolerances on shape and dimensions
EN 10051	Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels - Tolerances on dimensions and shape
EN 10055	Hot rolled steel equal flange tees with radiused root and toes - Dimensions and tolerances on shape and dimensions
EN 10056	Structural steel equal and unequal leg angles
EN 10079	Definition of steel products
EN 10080	Steel for the reinforcement of concrete - Weldable reinforcing steel – General
EN 10163	Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections
EN 10164	Steel products with improved deformation properties perpendicular to the surface of the product - Technical delivery conditions
EN 10168	Steel products - Inspection documents - List of information and description
EN 10204	Metallic products - Types of inspection documents
EN 10210	Hot finished structural hollow sections of non-alloy and fine grain structural steels
EN 10218	Steel wire and wire products
EN 10219	Cold formed welded structural hollow sections of non-alloy and fine grain steels
EN 10223	Steel wire and wire products for fences
EN 10240	Internal and/or external protective coatings for steel tubes - Specification for hot dip galvanized coatings applied in automatic plants
EN 10244	Steel wire and wire products. Non-ferrous metallic coatings on steel wire.
EN 12004	Adhesives for tiles - Requirements, evaluation of conformity, classification and designation



Reference	Description
EN 12039	Flexible sheets for waterproofing - bitumen sheets for roof waterproofing - Determination of adhesion of granules
EN 12051	Building hardware. Door and window bolts. Requirements and test methods
EN 12074	Welding consumables. Quality requirements for manufacture, supply and distribution of consumables for welding and allied processes
EN 12086	Thermal insulating products for buildings application - Determination of water vapour transmission properties
EN 12087	Thermal insulating products for building applications - Determination of long term water absorption by immersion
EN 12088	Thermal insulating products for buildings application - Determination of long term water absorption by diffusion
EN 12091	Thermal insulating products for buildings application - Determination of freeze-thaw resistance
EN 12207	Windows and doors - Air permeability - Classification.
EN 12208	Windows and doors - Water tightness - Classification.
EN 12209	Building hardware. Locks and latches. Mechanically operated locks, latches and locking plates. Requirements and test methods
EN 12210	Windows and doors - Resistance to wind load - Classification.
EN 12211	Windows and doors - Resistance to wind load - Test methods
EN 12217	Doors - Operating forces - Requirements and classification
EN 12219	Doors Climatic influences - Requirements and classification.
EN 12224	Geotextiles and geotextile-related products. Determination of the resistance to weathering
EN 12354	Estimation of Acoustic Performance of Buildings from the Performance of Elements
EN 12310	Flexible sheets for waterproofing. Determination of resistance to tearing
EN 12311	Flexible sheets for waterproofing. Determination of tensile properties.

Reference	Description
EN 12316	Flexible sheets for waterproofing. Determination of peel resistance of joints
EN 12317	Flexible sheets for waterproofing - Determination of shear of joints
EN 12350	Testing fresh concrete
EN 12365	Building hardware - Gasket and weatherstripping for doors, windows, shutters and curtain walling
EN 12390	Testing hardened concrete
EN 12400	Windows and pedestrian doors - Mechanical durability - Requirements and classification.
EN 12412	Thermal performance of windows, doors and shutters - Determination of thermal transmittance by hot box method
EN 12447	Geotextiles and geotextile-related products. Screening test method for determining the resistance to hydrolysis in water
EN 12504	Testing concrete in structures
EN 12591	Bitumen and bituminous binders - Specifications for paving grade bitumens
EN 12594	Bitumen and bituminous binders - Preparation of test samples
EN 12597	Bitumen and bituminous binders – Terminology
EN 12613	Plastics warning devices for underground cables and pipelines with visual characteristics
EN 12620	Aggregates for concrete
EN 12691	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of resistance to impact
EN 12697	Bituminous mixtures - Test methods for hot mix asphalt
EN 12878	Pigments for the colouring of building materials based on cement and or lime – Specifications and methods of test
EN 12970	Mastic asphalt for waterproofing - Definitions, requirements and test methods
EN 13036	Road and airfield surface characteristics - Test methods
EN 13043	Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas
EN 13108	Bituminous mixtures - Material specifications
EN 13139	Aggregates for mortar



Reference	Description
EN 13163	Thermal insulation products for buildings - Factory made products of expanded polystyrene (EPS) – Specification
EN 13164	Thermal insulation products for buildings - Factory made products of extruded polystyrene foam (XPS) – Specification
EN 13172	Thermal insulating products - Evaluation of conformity
EN 13179	Test for filler aggregate used in bituminous mixtures
EN 13242	Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction
EN 13249	Geotextiles and geotextile-related products - Characteristics required for use in the construction of roads and other trafficked areas (excluding railways and asphalt inclusion)
EN 13251	Geotextiles and geotextile-related products - Characteristics required for use in earthworks, foundations and retaining structures
EN 13253	Geotextiles and geotextile-related products - Characteristics required for use in erosion control works (coastal protection, bank revetments)
EN 13285	Unbound mixtures. Specifications
EN 13286	Unbound and hydraulically bound mixtures. Test Methods.
EN 13369	Common rules for precast concrete products
ENV 13381	Test methods for determining the contribution to the fire resistance of structural members
EN 13415	Test of adhesives for floor covering. Determination of the electrical resistance of adhesive films and composites
EN 13416	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Rules for sampling
EN 13476	Plastics piping systems for non-pressure underground drainage and sewerage. Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)
EN 13479	Welding consumables. General product standard for filler metals and fluxes for fusion welding of metallic materials
EN 13501	Fire classification of construction products and building elements

Reference	Description
EN 13562	Geotextiles and geotextile-related products. Determination of resistance to penetration by water (hydrostatic pressure test)
EN 13583	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of hail resistance
EN 13670	Execution of concrete structures
EN 13707	Flexible sheets for waterproofing - Reinforced bitumen sheets for roof waterproofing - Definitions and characteristics
EN 13719	Geotextiles and geotextile-related products. Determination of the long term protection efficiency of geotextiles in contact with geosynthetic barriers
EN 13793	Thermal insulating products for building applications - Determination of behaviour under cyclic loading
EN 13808	Bitumen and bituminous binders. Framework for specifying cationic bituminous emulsions
EN 13877	Concrete pavements
EN 13893	Test of adhesives for floor covering. Determination of the electrical resistance of adhesive films and composites
EN 13897	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of watertightness after stretching at low temperature
EN 13914	Design, preparation and application of external rendering and internal plastering
EN 13969	Flexible sheets for waterproofing - Bitumen damp proof sheets including bitumen basement tanking sheets - Definitions and characteristics
EN 13970	Flexible sheets for waterproofing - Bitumen water vapour control layers - Definitions and characteristics
EN 13984	Flexible sheets for waterproofing - Plastic and rubber vapour control layers - Definitions and characteristics
EN 14030	Geotextiles and geotextile-related products. Screening test method for determining the resistance to acid and alkaline liquids
EN 14188	Joint fillers and sealants
EN 14259	Adhesives for floor covering. Requirements for mechanical and electrical performance

Reference	Description
EN 14351	Windows and doors - Product standard, performance characteristics
EN 14399	High strength structural bolting for preloading
EN 14532	Welding consumables. Test methods and quality requirements.
EN 15048	Non-preloaded structural bolting assemblies
EN 20273	Fasteners - Clearance holes for bolts and screws
EN 25817	Arc-welded joints in steel. Guidance on quality levels for imperfections.
EN 45011	General requirements for bodies operating product certification systems
EN ISO 898	Mechanical properties of fasteners made of carbon steel and alloy steel
EN ISO 1461	Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods
EN ISO 2320	Prevailing torque type steel hexagon nuts - Mechanical and performance requirements
EN ISO 2808	Paints and varnishes. Determination of film thickness
EN ISO 2810	Paints and varnishes - Natural weathering of coatings - Exposure and assessment
EN ISO 3269	Fasteners - Acceptance inspection
EN ISO 4014	Hexagon head bolts - Product grades A and B
EN ISO 4016	Hexagon head bolts - Product grade C
EN ISO 4032	Hexagon nuts, style 1. Product grades A and B
EN ISO 4034	Hexagon nuts. Product grade C
EN ISO 4618	Paints and varnishes - Terms and definitions
EN ISO 4759	Tolerances for fasteners
EN ISO 5817	Welding - Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) - Quality levels for imperfections
EN ISO 6157	Fasteners - Surface discontinuities
EN ISO 7089	Plain washers- Nominal series- Product grade A
EN ISO 7090	Plain washers, chamfered - Normal series - Product grade A
EN ISO 7091	Plain washers - Normal series - Product grade C
EN ISO 7093	Plain washers - Large series
EN ISO 8502	Preparation of steel substrates before application of paints and related products - Tests for the assessment of surface cleanliness

Reference	Description
EN ISO 8504	Preparation of steel substrates before application of paints and related products - Surface preparation methods
EN ISO 9692	Welding and allied processes. Recommendations for joint preparation. Manual metal-arc welding, gas-shielded metal-arc welding, gas welding, TIG welding and beam welding of steels
EN ISO 9969	Thermoplastics pipes. Determination of ring stiffness
EN ISO 10077	Thermal performance of windows, doors and shutters - Calculation of thermal transmittance
EN ISO 10319	Geotextiles. Wide-width tensile test
EN ISO 10684	Fasteners - Hot dip galvanized coatings
EN ISO 11058	Geotextiles and geotextile-related products -- Determination of water permeability characteristics normal to the plane, without load
EN ISO 11600	Building construction - Jointing products - Classification and requirements for sealants
EN ISO 11890	Paints and varnishes - Determination of volatile organic compound (VOC) content
EN ISO 12236	Geosynthetics -- Static puncture test (CBR test)
EN ISO 12944	Paints and Varnishes -- Corrosion protection of steel structures by protective paint systems.
EN ISO 12956	Geotextiles and geotextile-related products -- Determination of the characteristic opening size
EN ISO 13433	Geotextiles and geotextile - related products. Dynamic perforation test (Cone drop test)
EN ISO 13918	Welding - Studs and ceramic ferrules for arc stud welding
EN ISO 14122	Safety of machinery - Permanent means of access to machinery
EN ISO 14555	Welding -- Arc stud welding of metallic materials.
EN ISO 14688	Geotechnical investigation and testing - Identification and classification of soil
EN ISO 14713	Protection against corrosion of iron and steel in structures - Zinc and aluminium coatings -- Guidelines
EN ISO 14731	Welding coordination - Tasks and responsibilities
EN ISO 15695	Vitreous and porcelain enamels - Determination of scratch resistance of enamel finishes
EN ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories

Reference	Description
ASTM C 289	Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates
ASTM D 4914	Standard Test Methods for Density and Unit Weight of Soil and Rock in Place by the Sand Replacement Method in a Test Pit
DIN 4107	Settlement observations during and after construction of buildings
DIN 4123	Protection of buildings in the area of excavations, foundations and underpinnings
DIN 4124	Building pits and trenches Slopes, working space widths, sheeting
DIN 24537	Gratings used as floor coverings - Part 1: Metal gratings
ISO 286- 2	ISO system of limits and fits - Part 2: Tables of standard tolerance grades and limit deviations for hole and shafts
ISO 1891	Bolts, screws, nuts and accessories - Terminology and nomenclature - Trilingual edition
ISO 8992	Fasteners – General Requirements for bolts, screws, studs and nuts.

6.6

HVAC

Bulgarian Legislation

Reference	Description
State Gazette No. 98/14.11.2008 and amendments SG. 6/23.01.2009; SG. 19/13.03.2009; SG. 42/05.06.2009; SG. 82/16.10.2009; SG. 15/23.02.2010	Energy Efficiency Act
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No.15 15/2005	Ordinance № 15 of the 2005 technical regulations and standards for design, construction and operation of facilities and equipment for generation, transmission and distribution of heat Ordinances
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 4/2006	Reduce harmful noise with Noise Reduction for buildings in their design and the rules and regulations for the implementation of the works in respect of noise emitted during construction
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 7/15.12.2004 2008 and amendments SG. 85 of 2009, promulgated, SG. 5 2005 , as amended. and supplemented. No. 85 of 2009, amended. No.88 and 92 of 2009, as amended. and supplemented. No. 2 of 2010	Energy efficiency, heat and energy in building

**Greek Legislation**

Reference	Description
TOTEE 20701-1/2010	Guidelines of Technical Chamber of Greece - National Analytical Specifications of parameters for the calculation of the Buildings energy efficiency and the decision of the Energy Efficiency certificate
TOTEE 20701-2/2010	Guidelines of Technical Chamber of Greece - Thermo physic properties of structural modules and examination of the Thermo-insulating adequacy of Buildings
TOTEE 20701-3/2010	Guidelines of Technical Chamber of Greece – Climatic data for Greek regions
T.O.T.E.E. 2423/86	Air-conditioning Installations in Buildings
T.O.T.E.E. 2425/87	Elements for Calculating Air-conditioning loads in Building Areas
T.O.T.E.E. 2421/86	Hot water distribution for Heating in Building Areas

**International Codes and Standards (common for both countries)**

Reference	Description
EN 15423:2008	Ventilation for buildings - Fire precautions for air distribution systems in buildings
ASHRAE	Handbooks and standards
SMACNA (1995)	HVAC Duct Construction Standards, Metal and Flexible
EN-13831	Closed expansion vessels with built-in diaphragm for installation in water
EN-12828	Heating systems in buildings. Design for water-based heating systems
EN-14336	Heating systems in buildings. Installation and commissioning of water based heating systems
EN-442.02	Specification for radiators and convectors. Technical specifications and requirements
EN-1886	Ventilation for buildings. Air handling units. Mechanical performance
EN-12236	Ventilation for buildings - Ductwork hangers and supports - Requirements for strength
EN-13180	Ventilation for buildings. Ductwork. Dimensions and mechanical requirements for flexible ducts
EN-13779	Ventilation for non-residential buildings – Performance requirements for ventilation and room-conditioning system
EN-1505	Ventilation for buildings - Sheet metal air ducts and fittings with rectangular cross section - Dimension

Reference	Description
EN-1506	Ventilation for buildings - Sheet metal air ducts and fittings with circular cross-section - Dimensions
EN-15650	Ventilation for buildings — Fire dampers
EN-779	Particulate air filters for general ventilation - Determination of the filtration performance
API STANDARD 410	Forced-Circulation Air-Cooling and Air-Heating Coils
EN ISO3740	Determination of sound power levels of noise sources
ANSI/ASHRAE 15-2004	Safety Standard for Refrigeration Systems
ANSI/ASME B31.5-1987	Refrigeration Piping
NFPA 90A,2009	Installation of Air Conditioning and Ventilation Systems
EN ISO 3746	Acoustics - Determination of Sound Power Levels and Sound Energy Levels of Noise Sources using Sound Pressure – Survey Method using an Enveloping Measurement Surface over a Reflecting Plane
ANSI/ ASME B31.5-1987	Refrigeration Piping
NFPA 90A,2007	Installation of Air Conditioning and Ventilation Systems

**6.7**

**Fire Fighting**

**Bulgarian Legislation**

Reference	Description
Ministry Of Regional Development And Public Works - Ordinance № Із-1971 / 29-10-2009	Ordinance № Із-1971 from 29 October 2009 for construction and technical rules and norms for fire safety
Ministry Of Regional Development And Public Works - PO-PS-1227/26.11.2010	Guidelines for the implementation of Regulation № Із-1971 from 2009 for construction and technical rules and norms for fire safety

**Greek Legislation**

Reference	Description
Π.Δ.71/88	“Regulations for Fire Protection of buildings”
K.Y.A. Φ15/οικ. 1589/104/2006	“Fire regulation for industrial buildings and mechanical installations”
TOTEE2451/86	Technical chamber of Greece Recommendations - Buildings Mechanical Installations: Fire Fighting Water Systems

**International Codes and Standards (common for both countries)**

Reference	Description
EN 2:1992/A1:2004	Classification of fires
EN 1866	Mobile fire extinguishers
EN 3	Portable fire extinguishers
EN-15004	Fixed fire fighting systems - Gas extinguishing systems
EN-12094	Fixed fire fighting systems - Components for gas extinguishing systems
EN10240	Internal and/or external protective coatings for steel tubes
EN10255	Non-alloy steel tubes suitable for welding or threading. Technical delivery conditions
EN 1092	Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories
EN-54	Fire detection and fire alarm systems
NFPA	As applicable

**7. Norms and Legislations – Metering/Regulating Stations and O&M Base FEED**

**7.1 Piping and Mechanical Works**

Reference	Description
PED 97/23/EC	Pressure Equipment Directive
EN 1515-3	Flanges and their joints – Bolting – Part 3: Classification of bolt materials for steel flanges, class designated
EN 1594	Gas Supply Systems – Pipelines - Maximum operating pressure over 16 bar - Functional Requirements
EN 1759-1	Flanges and their Joints – Circular flanges for pipes, valves, fittings and accessories, Class designated – Part 1: Steel Flanges, NPS 1/2 to 24
EN 1776	Gas Supply – Natural Gas Measuring Stations – Functional Requirements
EN 10204	Metallic Products – Types of Inspection Documents
EN 10208-2	Steel pipes for pipelines for combustible fluids – Technical delivery conditions – Part:2 Pipes for requirement class B
EN 10253-2	Butt-welding pipe fittings. Non alloy and ferritic alloy steels with specific inspection requirements.
EN 10288	Steel tubes and fittings for onshore and offshore pipelines – External two layer extruded polyethylene based coatings
EN 10289	Steel tubes and fittings for onshore and offshore pipelines – External liquid applied epoxy and epoxy-modified coatings
EN 10290	Steel tubes and fittings for onshore and offshore pipelines – External liquid applied polyurethane and polyurethane -modified coatings
EN 10301	Steel tubes and fittings for on and offshore pipelines-Internal coating for the reduction of friction for conveyance of non corrosive gas
EN ISO 10497	Testing of valves - Fire type testing requirements
EN 12068	Cathodic protection – External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials
EN 12186	Gas Supply Systems – Gas Pressure Regulating Stations for Transmission and Distribution – Functional Requirements
EN 12327	Gas supply systems. Pressure testing, commissioning and decommissioning procedures. Functional requirements
EN 12560-2	Flanges and their joints – Gaskets for class-designated flanges – Part 2: Spiral wound gaskets for use with steel flanges.

Reference	Description
EN 12569	Industrial valves. Valves for chemical and petrochemical process industry. Requirements and tests
EN 12732	Gas Supply Systems – Welding steel pipe work – Functional requirements
EN 12954	Cathodic protection of buried or immersed metallic structures – General principles and application for Pipelines
EN 13445	Unfired Pressure Vessels
EN 13480	Metallic industrial piping
EN ISO 13706	Petroleum, Petrochemical and Natural Gas Industries – Air Cooled Heat Exchangers
EN 13942	Petroleum and natural gas industries. Pipeline transportation systems. Pipeline valves
EN 14141	Valves for natural gas transportation in pipelines- Performance requirements and tests
EN 14870-1:2004	Petroleum and Natural Gas Industries. Induction bends, fittings and flanges for pipeline transportation systems-Part 1: Induction Bends
EN 14870-2:2004	Petroleum and Natural Gas Industries. Induction bends, fittings and flanges for pipeline transportation systems-Part 2: Fittings
EN 14870-3:2006	Petroleum and Natural Gas Industries. Induction bends, fittings and flanges for pipeline transportation systems-Part 3: Flanges
EN ISO 8501-1	Preparation for steel substrates before Application of Paints and related Products
EN 1714	Non-destructive testing of welds – Ultrasonic testing of welded joints
ISO 898-1 & -2	Mechanical properties of fasteners made of carbon steel and alloy steel – Part 1: Bolts, screws and studs – Part 2: Nuts with specified proof load values; coarse thread.
EN ISO 2808	Paints and Varnishes – Determination of Film Thickness
EN ISO 9001	Quality Management Systems – Requirements
ISO 13443	Natural Gas – Standard reference conditions
ASME B31.3	Process Piping
ASME B31.8	Gas Transmission and Distribution Piping Systems
ASME B36.10M	Welded and Seamless Wrought Steel Pipe

## 7.2

### Instrumentation, Control and Telecoms

Reference	Description
ATEX 94/9/EC	Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres.
ATEX 99/92/EC	Safety of Installation. (ATEX 137)
PED 97/23/EC	Pressure Equipment Directive
Directive 89-336 CEE	Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility
AGA Report No 9	Measurement of gas by multi-path ultrasonic meters
AGA 12	Cryptographic Protection of SCADA Communications
API RP 520	Sizing, Selection and Installation of Pressure Relieving Devices in Refineries, Part I and II
API RP 526	Flanged steel safety relief valves
API RP 670	Machinery Protection System
API 1164	Pipeline SCADA Security
EIA -359	Standard Colours for Colour Identification and Coding
EIA RS 232C	Interface between data terminal equipment employing serial binary data interchange
EN 837-1	Pressure Gauges-Part 1: Bourdon Tube
EN 1594	Gas supply systems
EN 5026	Cable glands for electrical installations
EN 10143	Continuously hot-dip coated steel sheet and strip. Tolerances on dimensions and shape
EN 50173-1	Information technology — Generic cabling systems
EN 50267	Common test methods for cables under fire conditions.
EN 55022	Information technology equipment - Radio disturbance characteristics - Limits
EN 60079	Specification for Electrical Apparatus for Explosive Gas Atmospheres - Electrical Installations in Hazardous Areas.
EN 60228	Conductors of Insulated Cables
EN 60269	Low Voltage Fuses
EN 60332	Tests on electric and optical fibre cables under fire conditions
EN 60529	Classification for degrees of protection provided by enclosures (IP rating)
EN 60670	Boxes and enclosures for electrical accessories for household and similar fixed electrical installations.

Reference	Description
EN 60793-1-1	Optical fibres – Part 1-1: Measurement methods and test procedures – General and guidance
EN 60794-1-2	Optical fibre cables Part 1-2: Generic specification Basic optical cable test procedures
EN 61000	Electromagnetic Compatibility
EN 61386-1	Specification for conduit systems for cable management. General requirements
EN 61508-1	Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems-Part 1: General Requirements
EN 61508-2	Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems-Part 2: Requirements for Electrical/Electronic/Programmable Electronic Safety-Related Systems
EN 61515	Mineral insulated thermocouple cables and thermocouples
EN 62040	Uninterruptible power supply systems
EN 62337	Commissioning of Electrical, Instrumentation and Control Systems in the Process Industry-Specific Phase and milestones
EN ISO 3740	Determination of sound power levels of noise sources
EN ISO 3746	Acoustics - Determination of Sound Power Levels and Sound Energy Levels of Noise Sources using Sound Pressure – Survey Method using an Enveloping Measurement Surface over a Reflecting Plane
EN ISO 5210	Industrial Valves – Multi-turn Valve Actuator attachments
EN ISO 5211	Industrial Valves – Part-turn Valve Actuator attachments
IEC 255-5	Electrical Insulation
IEC 60050-195	Earthing and Protection Against Electric Shock
IEC 60079-0	Electrical Apparatus for explosive gas atmosphere-Part 0: General Requirements;
IEC 60079-1	Electrical Apparatus for explosive gas atmosphere-Part 1: Flameproof enclosures “d”;
IEC 60079-7	Electrical Apparatus for explosive gas atmosphere-Part 7: Increased Safety “e”;
IEC 60079-10-1	Electrical Apparatus for explosive gas atmosphere-Part10: Classification of hazardous areas;
IEC 60079-11	Electrical Apparatus for explosive gas atmosphere-Part11: Intrinsically Safe “i”;
IEC 60079-14	Electrical Apparatus for Explosive Gas Atmospheres. Electrical installations in hazardous areas.

Reference	Description
IEC 60079-15	Electrical Apparatus for explosive gas atmosphere-Part15: Construction, Test and marking of type of protection ‘n’;
IEC 60255-151	Measuring relays and protection equipment - Part 151: Functional requirements for over/under current protection
IEC 60297	Mechanical structures for electronic equipment - Dimensions of mechanical structures of the 482,6 mm (19 in) series
IEC-60331	Fire Resisting Characteristics of Electrical Cables.
IEC 60364	Low Voltage Electrical Installations
IEC 60502-1	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV)
IEC 60529 (2001)	Classification of Degrees of Protection Provided by Enclosures (IP code) and methods of measurement
IEC 60534-2-1	Industrial Process Control Valves – Part 2-1: Flow Capacity Sizing Equations for Fluid Flow under Installed Conditions
IEC 60546	Controllers with analogue signals for use in industrial process control systems.
IEC 60584-1	Thermocouples reference tables
IEC 60584-2	Thermocouples - Tolerances
IEC 60584-3	Thermocouples-Extension and Compensating Cables – Tolerances and Identification System
IEC 60751	Industrial platinum resistance thermometers and platinum temperature sensors
IEC 60770	Transmitters for use in Process Control Systems
IEC-60811	Common Test Methods for Insulating and Sheathing Materials of Electric Cables
IEC 60849:1998	Sound Systems for Emergency Purposes
IEC 60874	Connector for Optical Fibres and Cables.
IEC 60885	Electrical Test Methods for Electric Cables.
IEC 61000-4-3	Electromagnetic Compatibility for Industrial Process Measurement and Control Equipment
IEC 61073-1	Fibre optic interconnecting devices and passive components - Mechanical splices and fusion splice protectors for optical fibres and cables - Part 1: Generic specification
IEC 61082	Preparation of documents used in electro-technology
IEC 61511-1	Functional safety - Safety instrumented systems for the process industry sector - Framework, definitions, system, hardware and software requirements
IEC 61643	Low Voltage Surge Protective Devices



Reference	Description
IEC 62305	Protection against Lightning
IEEE 730	Software Quality Assurance Plan
IEEE 802.3u	Compliant 100Base-TX twisted pair interfaces, with RJ-45 connector
IEEE 802.3z	Compliant 1000Base-T twisted pair interfaces, with RJ-45 connector.port-based VLAN (IEEE 802.1Q)
IEEE 802.3an-2006	Specific requirements Part 3, Amendment 1: Physical Layer and Management Parameters for 10 Gbit/s Operation
IEEE 802.3af-2003	Power over Ethernet Standard
IEEE 802.3at-2009	Power over Ethernet Plus Standard
IEEE 829	Software Test Documentation
IEEE 830	Software Requirement Specification
ISA 75.01.01	Flow equations for sizing control valves
ISA 99	Security for Industrial Automation and Control Systems
ISO 1461	Hot Dip Galvanised Coatings on Iron and Steel Articles
ISO 4126-2	Safety devices for protection against excessive pressure – part 2: Bursting Disc Safety Devices
ISO 5167	Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full
ISO 5168	Measurement of Fluid Flow – evaluation of uncertainties
ISO 9951	Measurement of gas flow in closed conduits – turbine meters
ISO 10303	Standard for Industrial Automation Systems and Integration - Product data representation and exchange
ISO 10474	Steel and steel products -- Inspection documents
ISO 80000-1	SI Units and recommendation for use of their multiples and of certain other units
ISO/IEC 11801	Information technology — Generic cabling for customer premises
ISO/IEC 27002	Information Technology – Code of Practice for Information Security Management
ISO/DIS 17089-1	Measurement of fluid flow in closed conduits – Ultrasonic meters for gas – Part 1: Meters for custody transfer and allocation measurement.
ITU G.655	Characteristics of a non-zero dispersion-shifted single-mode optical fibre and cable
ITU G.692	Optical interfaces for multi-channel systems with optical amplifiers
ITU G.702	Digital hierarchy bit rates
ITU G.703	Physical/electrical characteristics of hierarchical digital interfaces.
ITU G.704	Synchronous Frame Structures Used at Primary and Secondary Hierarchical Levels.

Reference	Description
ITU G.706	Frame alignment and cyclic redundancy check (CRC) procedures relating to basic frame structures defined in Recommendation G.704.
ITU G.707	Network node interface for the synchronous digital hierarchy (SDH). This Recommendation includes the withdrawn G.708, and G.709 Recommendations
ITU G.711	Pulse code modulation (PCM) of voice frequencies
ITU G.712	Transmission performance characteristics of pulse code modulation channels
ITU G.731	Primary PCM multiplex equipment for voice frequencies.
ITU G.732	Characteristics of primary PCM multiplex equipment operating at 2048 kbit/s.
ITU G.735	Characteristics of primary PCM multiplex equipment operating at 2048 kbit/s and offering synchronous digital access at 384 kbit/s and/or 64 kbit/s.
ITU G.737	Characteristics of an external access equipment operating at 2048 kbit/s offering synchronous digital access at 384 kbit/s and/or 64 kbit/s.
ITU G.781	Synchronization layer functions
ITU G.783	Characteristics of SDH
ITU G.784	SDH Management
ITU G.811	Timing characteristics of primary reference clocks
ITU G.812	Timing requirements of slave clocks suitable for use as node clocks in synchronization networks
ITU G.821	Error performance of an international digital connection operating at a bit rate below the primary rate and forming part of an integrated services digital network.
ITU G.823	The control of jitter and wander within digital networks which are based on the 2048 kbit/s hierarchy.
ITU G.921	Digital sections based on the 2048 kbit/s hierarchy.
ITU G.957	Optical interfaces for equipments and systems relating to the synchronous digital hierarchy.
TIA/EIA 455	Test Procedures for Fibre Optic Fibres, Cables, Transducers, Connecting and Terminating Devices
TIA/EIA-568-B.2-10	Addendum 1-Transmission Performance Specifications for 4-pair 100-Ω Augmented Category 6 Cabling
TIA 598	Standard for Colour Coding of Fibre Optic Cables
SAE AS 4059	Aerospace Fluid Power - Cleanliness Classification for Hydraulic Fluids

**Bulgarian Legislation**

Reference	Description
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 1/2010	Design, Construction and Maintenance of Electrical Installations for Buildings in Low Voltage
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 4/2010	Lightning Protection of Buildings, Outdoor Facilities and Open Spaces

**Greek Legislation**

Reference	Description
MINISTERIAL DECISION 50/12081/642/2006 F A – GG B / 1222/5.9.2006	Security Home Electrical Installations (E.I.E.). Introduction of a Differential Current Installation of Construction and Fundamental Grounding
MINISTERIAL DECISION Δ6/B/14826, OJ 1122, 17.06.2008	Measures to Improve Energy Efficiency in the Public Sector

**European Directives (common for both countries)**

Reference	Description
94/9/EC ATEX	Equipment Explosive Atmospheres Directive
97/23/EC PED	Pressure Equipment Directive
2006/42/EEC	Machinery
2006/95/EEC LVD	Low Voltage Directive
2004/108/EEC EMC	Electromagnetic Compatibility Directive

**International Codes and Standards (common for both countries)**

Reference	Description
EN 40	Lighting columns
EN 54	Fire Detection and Fire Alarm Systems
EN 12464-1	Light and lighting - Lighting of Work places – Part 1: Indoor Work Places
EN 12464-2	Light and lighting - Lighting of Work places – Part 2: Outdoor Work Places
EN 50086	Specification for Conduit Systems for Cable Management
EN 50130	Alarm systems
EN 50131	Alarm systems - Intrusion and hold-up systems
EN 50132	Alarm systems CCTV surveillance systems for use in security applications
EN 50162	Protection against Corrosion by Stray Current from Direct-Current Systems
EN 50164-1	Lightning Protection Components (LPC) - Part 1: Requirements for Connection Components
EN 50164-2	Lightning Protection Components (LPC) - Part 2: Requirements for Conductors & Earth Electrodes
EN 50164-3	Lightning Protection Components (LPC) - Part 3: Requirements for Isolating Spark Gaps
EN 50164-4	Lightning protection Components (LPC) ) - Part 4: Requirements for conductor fasteners
EN 50164-5	Lightning protection Components (LPC) - Part 5: Requirements for earth electrode inspection housings and earth electrode seals
EN 50164-6	Lightning protection Components (LPC) - Part 6: Requirements for lightning strike counters
EN 50164-7	Lightning protection Components (LPC) - Part 7: Requirements for earthing enhancing compounds
EN 50262	Cable Glands for Electrical Installations
EN 50267-2-1	Common Test Methods for Cables Under Fire Conditions - Tests on Gases Evolved During Combustion of Materials From Cables - Part 2-1: Procedures - Determination of the Amount of Halogen Acid Gas
EN 50267-2-2	Common Test Methods for Cables Under Fire Conditions - Tests on Gases Evolved During Combustion of Materials From Cables - Part 2-2: Procedures - Determination of Degree of Acidity of Gases for Materials by Measuring pH and Conductivity
EN 50396	Non Electrical Test Methods for Low Voltage Electric Cables

Reference	Description
EN 50443	Railway Applications – Fixed Installations - Effects of Electromagnetic Interference caused by High Voltage A.C. Railway on Pipelines – Admissible Values and Protection Measures
EN 55011	Limits and Methods of Measurement of Radio Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment
EN 55022	Information Technology Equipment - Radio Disturbance Characteristics -Limits and Methods of Measurement
EN 60034	Rotating Electrical Machines
EN 60044-1	Instrument Transformers - Part 1: Current Transformers
EN 60044-2	Instrument Transformers - Part 2: Inductive Voltage Transformers
EN 60068	Environmental Testing
EN 60072	Dimensions and Output Series for Rotating Electrical Machines
EN 60076	Power Transformers
EN 60079-0	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
EN 60079-1	Electrical Apparatus for Explosive Gas Atmospheres - Part 1: Flameproof Enclosures d
EN 60079-7	Electrical Apparatus for Explosive Gas Atmospheres - Part 7: Increased safety e
EN 60079-10	Electrical Apparatus for Explosive Gas Atmospheres - Part 10: Classification of Hazardous Areas
EN 60079-14	Electrical apparatus for explosive gas atmospheres – Part 14: Electrical installations in Hazardous areas (other than mines)
EN 60079-15	Electrical Apparatus for Explosive Gas Atmospheres – Part 15: Equipment Protection by Type of Protection "n"
EN 60079-25	Electrical Apparatus for Potentially Explosive Atmospheres - Part 25: Intrinsically Safe Electrical Systems-I
EN 60085	Electrical Insulation - Thermal Evaluation and Designation
EN 60086	Primary Batteries
EN 60099-4	Surge Arresters- Part 4:Metal Oxide Surge Arresters without Gaps for A.C. Systems
EN 60099-5	Surge Arresters- Part 5:Selection & Application Recommendations

Reference	Description
EN 60146	Semiconductor Convertors - General Requirements and Line Commutated Convertors
EN 60228	Conductors of Insulated Cables
EN 60255	Electrical Relays
EN 60265	Specification for High-Voltage Switches
EN 60269	Low-voltage Fuses
EN 60282-1	High-Voltage Fuses - Part 1: Current-Limiting Fuses
EN 60289	Reactors
EN 60332-1	Tests on Electrical and Optical Cables Under Fire Conditions - Test for a Vertical Flame Propagation for a Single Insulated Wire or Cable
EN 60349	Railway Applications - Rotating Electrical Machines for Rail and Road Vehicles. Machines Other than Electronic Converter-fed Alternating Current Motors
EN 60423	Conduits for Electrical Purposes. Outside Diameters of Conduits for Electrical Installations and Threads for Conduits and Fittings
EN 60439-2	Low-Voltage Switchgear and Controlgear Assemblies - Part 2: Particular Requirements for Busbar Trunking Systems (Busways)
EN 60439-3	Low-Voltage Switchgear and Controlgear Assemblies - Part 3: Particular Requirements for Low-Voltage Switchgear and Controlgear Assemblies
EN 60439-4	Low-Voltage Switchgear and Controlgear Assemblies - Part 4: Particular Requirements for Assemblies for Construction Sites (ACS)
EN 60439-5	Low-Voltage Switchgear and Controlgear Assemblies - Part 5: Particular Requirements for Assemblies Intended to be Installed Outdoors in Public Places
EN 60445	Basic and Safety Principles for Man-machine Interface, Marking and Identification. Identification of Equipment Terminals and of Terminations of Certain Designated Conductors, Including General Rules for an Alphanumeric System
EN 60470	High-Voltage Alternating Current Contactors and Contactor-Based Motor Starters
EN 60529	Degrees of Protection provided by Enclosures (IPCode)
EN 60598	Luminaries
EN 60695	Fire Hazard Testing

Reference	Description
EN 60617	Graphical Symbols for Diagrams
EN 60694	Common Specifications for High-Voltage Switchgear and Controlgear Standards
EN 60831-1	Shunt Power Capacitors of the Self-healing Type for A.C. Systems having a Rated Voltage up to and Including 1000 V – Part 1: General - Performance, Testing and Rating - Safety Requirements - Guide for Installation and Operation
EN 60831-2	Shunt Power Capacitors of the Self-healing Type for A.C. Systems having a Rated Voltage up to and Including 1000 V – Part 2: Ageing Test, Self-healing Test and Destruction Test
EN 60849	Sound Systems for Emergency Purposes
EN 60896	Stationary Lead-Acid Batteries
EN 60947-1	Specification for Low-Voltage Switchgear & Controlgear- Part 1: General Rules
EN 60947-2	Specification for Low-Voltage Switchgear & Controlgear- Part 2: Circuit-Breakers
EN 60947-3	Specification for Low-Voltage Switchgear & Controlgear- Part 3: Switches, Disconnectors, Switch-Disconnectors and Fuse-Combination Units
EN 60947-4-1	Specification for Low-Voltage Switchgear & Controlgear- Part 4-1: Contactors and Motor-Starters. Electromechanical Contactors and Motor-Starters
EN 60947-6-1	Specification for Low-Voltage Switchgear & Controlgear- Part 6-1: Multiple Function Equipment. Automatic Transfer Switching Equipment
EN 61000	Electromagnetic compatibility (EMC)
EN 61386	Conduit Systems for Cable Management
EN 61508	Functional Safety of Electrical / Electronic / Programmable Electronic Safety-Related Systems
EN 61537	Cable Tray Systems and Cable Ladder Systems for Cable Management
EN 61557-12	Electrical Safety in Low Voltage Distribution Systems up to 1000 V AC and 1500 V D.C. - Equipment for Testing, Measuring or Monitoring of Protective Measures - Part 12: Performance Measuring and Monitoring Devices (PMD)

Reference	Description
EN 61643-11	Low Voltage Surge Protective Devices – Part 11: SPDs Connected to Low Voltage Power Distribution Systems – Performance Requirements and Testing Methods
EN 61643-21	Low Voltage Surge Protective Devices – Part 21: SPDs Connected to Telecommunication and Signaling Networks – Performance Requirements and Testing Methods
EN 61921	Power Capacitors. Low-voltage Power Factor Correction Banks
EN 62040	Uninterruptible Power Systems (UPS)
EN 62271-100	High-Voltage Switchgear and Controlgear - Part 100: Alternating-Current Circuit-Breakers
EN 62271-102	High-Voltage Switchgear and Controlgear - Part 102: A.C. Alternating Current Disconnectors and Earthing Switches
EN 62271-200	High-Voltage Switchgear and Controlgear - Part 200: A.C. Metal-Enclosed Switchgear and Controlgear for Rated Voltages Above 1 kV and Up To and Including 52 kV
EN 62305	Protection Against Lightning
EN ISO 9001	Quality Management Systems
EN ISO 14001	Environmental Management Systems - Requirements with Guidance for Use
EN ISO 17025	General Requirements for the Competence of Testing and Calibration Laboratories
EN ISO3740	Determination of sound power levels of noise sources
EN ISO 3746	Acoustics - Determination of Sound Power Levels and Sound Energy Levels of Noise Sources using Sound Pressure – Survey Method using an Enveloping Measurement Surface over a Reflecting Plane
CENELEC EN 60216	Electrical Insulating Materials - Properties of Thermal Endurance
CENELEC HD 308 S2	Identification of Cores in Cables and Flexible Cords
CENELEC HD 384	Requirements for Electrical Installations
CENELEC HD 538-2 S1	Three-phase Dry-type Distribution Transformers 50 Hz, from 100 to 2500 kVA with Highest Voltage for Equipment not Exceeding 24 kV
CENELEC HD 60364	Electrical Installations of Buildings
IEC 60255	Measuring Relays and Protection Equipment

Reference	Description
IEC 60279	Measurement of the Winding Resistance of an A.C. Machine During Operation at Alternating Voltage
IEC 60287	Electric Cables - Calculation of the Current Rating
IEC 60331-11	Tests for Electric Cables under Fire Conditions - Circuit Integrity - Part 11: Apparatus - Fire Alone at a Flame Temperature of at least 750 Degree C
IEC 60331-21	Tests for Electric Cables under Fire Conditions - Circuit Integrity - Part 21: Procedures and Requirements - Cables of Rated Voltage up to and Including 0,6 / 1,0 KV
IEC 60332-3-22	Tests on Electric and Optical Fibre Cables under Fire Conditions - Part 3-22: Test for Vertical Flame Spread of Vertically-Mounted Bundled Wires or Cables - Category A
IEC 60420	High-Voltage Alternating Current Switch-Fuse Combinations
IEC 60502	Power Cables with Extruded Insulation and Their Accessories for Rated Voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV)
IEC 60664	Insulation Coordination for Equipment within Low-Voltage Systems
IEC 60754-1	Test on Gases Evolved During Combustion of Materials from Cables - Part 1: Determination of the Amount of Halogen Acid Gas
IEC 60801	Electromagnetic Compatibility for Industrial-Process Measurement and Control Equipment
IEC 60874-19-1	Fibre Optic Interconnecting Devices and Passive components - Connectors for Optical Fibres and Cables - Part 19-1: Fibre Optic Patch Cord Connector Type SC-PC (Floating Duplex) Standard Terminated on Multimode Fibre Type A1a, A1b - Detail Specification
IEC 60905	Loading Guide for Dry-Type Power Transformers
IEC 61439-1	Low-Voltage Switchgear and Controlgear Assemblies- Part 1: General Rules
IEC 61439-2	Low-Voltage Switchgear and Controlgear Assemblies- Part 2: Power Switchgear and Controlgear Assemblies
IEC 61643-12	Low Voltage Surge Protective Devices – Part 12: SPDs Connected to Low Voltage Power Distribution Systems – Selection and Application Principles

Reference	Description
IEC 61643-22	Low Voltage Surge Protective Devices – Part 22: SPDs Connected to Telecommunication and Signaling Networks – Selection and Application Principles
IEC 61936-1	Power Installations Exceeding 1 kV A.C. - Part 1: Common Rules
IEC 62548	Design Requirements for Photovoltaic (PV) Arrays
IEC 62561-1	Lightning Protection Components (LPC) - Part 1: Requirements for Connection Components
IEC 62561-2	Lightning Protection Components (LPC) - Part 2: Requirements for Conductors & Earth Electrodes
IEC 62561-3	Lightning Protection Components (LPC) - Part 3: Requirements for Isolating Spark Gaps
IEC 62561-4	Lightning protection Components (LPC) ) - Part 4: Requirements for conductor fasteners
IEC 62561-5	Lightning protection Components (LPC) - Part 5: Requirements for earth electrode inspection housings and earth electrode seals
IEC 62561-6	Lightning protection Components (LPC) - Part 6: Requirements for lightning strike counters
IEC 62561-7	Lightning protection Components (LPC) - Part 7: Requirements for earthing enhancing compounds
ISO 3575	Continuous Hot-Dip Zinc-Coated Carbon Steel Sheet of Commercial and Drawing Qualities
ISO 5002	Hot-Rolled and Cold-Reduced Electrolytic Zinc-Coated Carbon Steel Sheet of Commercial and Drawing Qualities
ANSI/TIA/EIA-568-B.3	Optical Fiber Cabling Components Standard
UL 810	Capacitors
API 505	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified Class 1 Zone 0, Zone 1 and Zone 2

## 7.4

### Cathodic Protection

Reference	Description
EN 12954:2001	“Cathodic Protection of buried or immersed metallic structures – General principles and application for pipelines”

Reference	Description
EN 13509:2003	Cathodic Protection Measurements Techniques
DIN 50929 Teil 3	Possibility of Corrosion of Metallic Material when subject to Corrosion from Outside
EN 61643	Low Voltage Surge Protective Devices

## 7.5

### Civil and Structural Works

#### Bulgarian Legislation

Reference	Description
State Gazette No. 1/2.01.2001 and amendments	Spatial Development Act of the Republic of Bulgaria
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 2/2007	Design Of Buildings And Structures In Seismic Areas (Bulgarian Seismic Code)
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 3/2004	Basics of Structural Design Of Buildings and their Impacts
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 7/2004	Energy Efficiency, Heat and Energy Saving in Buildings
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 2/2008	Design, Implementation, Control and Acceptance of Waterproofing Systems for Buildings and Facilities
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 4/2009	Design, Implementation and Maintenance of Buildings in Accordance with the Requirements for Access for the Population, Including People with Disabilities

Reference	Description
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 6/2004	Technical Rules and Standards for Design, Construction and Use of Facilities and Transport Facilities, Storage, Distribution and Supply of Natural Gas
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 2/2004	Minimum Requirements for Health and Safety in Carrying Out Construction Work

#### Greek Legislation

Reference	Description
ELOT 118	Refined linseed oil
ELOT 119	Boiled linseed oil
ELOT 121	Raw materials for paints and varnishes – Sampling
ELOT 167	Pigments - Zinc oxide for paints
ELOT CR 213	Particle boards - Determination of formaldehyde emission under specified conditions - Method called: formaldehyde emission method.
ELOT CR 245	Thermal insulation - Classification of building materials according to their thermal insulation properties
ELOT 248	Gum spirit of turpentine and wood turpentines for paints and varnishes
ELOT 255	Mineral solvents for paints - White spirits and related hydrocarbon solvents
ELOT 451	Fibrous building insulation materials
ELOT 481	Paints and varnishes - Determination of light fastness of paints for interior use
ELOT 784	Gypsum Plasterboard – Specifications
ELOT 788	Emulsion paints
ELOT 808	Vitreous china washdown W.C. pans with horizontal outlet - Materials, quality, performance and dimensions other than connecting dimensions
ELOT 864	Enamel, alkyd, gloss
ELOT 876	Enamel, undercoat for brush application



Reference	Description
ELOT 884	Paints of organic solvent type for exterior walls
ELOT 902	Sanitary appliances - Test for resistance to shock
ELOT 903	Sanitary appliances - Resistance of the enamel to variations in temperature
ELOT 904	Sanitary appliances - Resistance of appliances to static charge
ELOT 919	Resin alkyd solutions
ELOT 965	Paint and varnishes - Primer pretreatment for metal surfaces
ELOT 1115	Sanitary appliances - Wash basins - Conditions of assembly and installation for accommodating handicapped persons
ELOT 1147	Sanitary appliances - Checking the appearance of enamelled surfaces - Test method
ELOT 1148	Sanitary appliances - Enamelled sanitary ceramic ware - General specifications
ELOT 1269	Sanitary tapware - Flow regulating devices - General technical specifications
ELOT 1415	Guidelines of water proofing bituminous membranes in buildings
ELOT 1421	Steel for the reinforcement of concrete - Weldable reinforcing steel
ΠΕΤΕΠ 03-02-02-00	Temporary National Technical Specification for Hollow Clay Brick Masonry
ΠΕΤΕΠ 03-03-01-00	Temporary National Technical Specification for Plastering Mortars Prepared on-Site
ΠΕΤΕΠ 03-04-05-00	Temporary National Technical Specification for Expansion Joints
ΠΕΤΕΠ 03-06-01-00	Temporary National Technical Specification for Roof Waterproofing with Bituminous Membranes
ΠΕΤΕΠ 03-06-02-02	Temporary National Technical Specification for Thermal Insulation of External Walls
ΠΕΤΕΠ 03-07-02-00	Temporary National Technical Specification for Ceramic Tile Works (Internal and External)
ΠΕΤΕΠ 03-07-03-00	Temporary National Technical Specification for Natural Stone Flooring
ΠΕΤΕΠ 03-07-08-00	Temporary National Technical Specification for Raised floors
ΠΕΤΕΠ 03-07-10-01	Temporary National Technical Specification for Permanent Suspended Ceilings from Plasterboard
ΠΕΤΕΠ 03-08-01-00	Temporary National Technical Specification for Wood Doors and Windows

Reference	Description
ΠΕΤΕΠ 03-08-02-00	Temporary National Technical Specification for Steel Doors and Windows
ΠΕΤΕΠ 03-08-07-01	Temporary National Technical Specification for Single Pane and Laminated Glazing Panels
ΠΕΤΕΠ 03-10-01-00	Temporary National Technical Specification for Painting of Concrete Surfaces
ΠΕΤΕΠ 03-10-03-00	Temporary National Technical Specification for Corrosion Protection and Painting of Steel Surfaces
ΠΕΤΕΠ 03-10-05-00	Temporary National Technical Specification for Painting of Wood Surfaces
ΠΕΤΕΠ 04-04-03-01	Temporary National Technical Specification for Common Sanitary
ΠΕΤΕΠ 04-04-03-02	Temporary National Technical Specification for WC for Disabled
ΠΕΤΕΠ 04-04-03-03	Temporary National Technical Specification for WC Equipment
ΠΕΤΕΠ.05.03.01.00	Temporary National Technical Specification - Road Base Courses of Excavated Material
ΠΕΤΕΠ.05.03.03.00	Temporary National Technical Specification - Road Base Courses of Unbound Aggregates
ΠΕΤΕΠ.05.03.11.04	Temporary National Technical Specification - Asphalt Paving Courses
ΟΣΜΕΟ	Guidelines for the Design of Roadworks (Egnatia Odos S.A.)
ΦΕΚ 32/Α/1988	Greek Regulation for Fire Resistance Requirements of Buildings
ΦΕΚ 59/Δ/1989	Greek Building Requirements Regulation (Κτιριοδομικός Κανονισμός)
ΦΕΚ 140/Α/2000	Greek General Building Terms Regulation (ΓΟΚ)
ΦΕΚ 169/Α/1998	Building clearances from public roads
ΦΕΚ 179/Α/2011	Section B: Hydrocarbon survey, production and transmission networks – Chapter D: routing and installation of IGI and IGB natural gas pipelines.
ΦΕΚ 212/Α/1996	Greek Construction Health & Safety Regulations
ΦΕΚ 260/Α/1981	Greek Construction Health & Safety Regulations
ΦΕΚ 270/Δ/1985	Greek general building terms for properties outside approved town plan limits
ΦΕΚ 315/Β/1997	KTS 97 - Greek Concrete Technology Code
ΦΕΚ 362/Α/1979	Greek Thermal Insulation Regulation
ΦΕΚ 407/Β/2010	Greek Regulation for the Energy Efficiency of Buildings (KENAK)



Reference	Description
ΦΕΚ 1329/Β/2000	EKOS 2000 - Greek Reinforced Concrete Code
ΦΕΚ 1416/Β/2008	KTX 2008 - Greek Concrete Reinforcement Technology Code
ΦΕΚ 2184/Β/1999	EAK 2000 - Greek Seismic Design Code
ΦΕΚ 2692/Β/2008	Temporary Greek Eurocode National Annexes
PPC 5143/29-9-1981	Clearances associated with overhead powerlines 66KV, 150KV and 400KV.

**International Codes and Standards (common for both countries)**

Reference	Description
CEN/TS 1099	Plywood - Biological durability - Guidance for the assessment of plywood for use in different hazard classes.
CEN/TS 14754.01	Curing compounds - Test methods - Part 1: Determination of water retention efficiency of common curing compounds
EN 31	Pedestal wash basins - Connecting dimensions
EN 32	Wall-hung wash basins - Connecting dimensions
EN 33	Pedestal W.C. pans with close-coupled flushing cistern - Connecting dimensions
EN 34	Wall hung W.C. pan with close coupled cistern (0) - Connecting dimensions
EN 58	Bitumen and bituminous binders - Sampling bituminous binders
EN 101	Ceramic tiles - determination of scratch hardness of surface according to MOHS
EN 107	Methods of testing windows - Mechanical test
EN 111	Wall-hung hand rinse basins - Connecting dimensions
EN 124	Gully tops and manhole tops for vehicular and pedestrian areas. Design requirements, type testing, marking, quality control
EN 130	Method of testing doors - Test for the change in stiffness of the door leaves by repeated torsion.
EN 197	Cement
EN 198	Specification for finished baths for domestic purposes made of acrylic material
EN 200	Sanitary tapware - Single taps and combination taps for water supply systems of type 1 and type 2

Reference	Description
	- General technical specification
EN 204	Classification of thermoplastic wood adhesives for non-structural applications.
EN 205	Adhesives - Wood adhesives for non-structural applications -Determination of tensile shear strength of lap joints.
EN 206	Concrete
EN 212	Wood preservatives - General guidance on sampling and preparation for analysis of wood preservatives and treated timber.
EN 232	Baths - Connecting dimensions
EN 246	Sanitary tapware - General specifications for flow rate regulators
EN 248	Sanitary tapware - General specification for electrodeposited coatings of Ni-Cr
EN 251	Shower trays - Connecting dimensions
EN 263	Crosslinked cast acrylic sheets for baths and shower trays for domestic purposes
EN 274	Waste fittings for sanitary appliances
EN 287	Qualification Test of welders – Fusion Welding
EN 288	Specification and approval of welding procedures for metallic materials
EN 309	Particleboards - Definition and classification.
EN 311	Wood-based panels - Surface soundness - Test method
EN 312	Particleboards – Specifications.
EN 313	Plywood - Classification and terminology
EN 314	Plywood - Bonding quality
EN 315	Plywood - Tolerances for dimensions.
EN 335	Durability of wood and wood-based products - Definition of hazard classes of biological attack
EN 350	Durability of wood and wood-based products - Natural durability of solid wood
EN 351	Durability of wood and wood-based products - Preservative-treated solid wood
EN 356	Glass in building - Security glazing - Testing and classification of resistance against manual attack
EN 357	Glass in building - Fire resistant glazed elements with transparent or translucent glass products - Classification of fire resistance
EN 410	Glass in building - Determination of luminous and

Reference	Description
	solar characteristics of glazing
EN 413	Masonry cement
EN 426	Resilient floor coverings. Determination of width, length, straightness and flatness of sheet material
EN 427	Resilient floor coverings. Determination of the side length, squareness and straightness of tiles
EN 433	Resilient floor coverings - Determination of residual indentation after static loading
EN 434	Resilient floor coverings. Determination of dimensional stability and curling after exposure to heat
EN 435	Resilient floor coverings. Determination of flexibility
EN 438	High-pressure decorative laminates (HPL) Sheets based on thermosetting resins (Usually called Laminates)
EN 439	Welding consumables. Shielding gases for arc welding and cutting
EN 440	Welding consumables. Wire electrodes and deposits for gas shielded metal arc welding of non alloy and fine grain steels. Classification
EN 450	Fly ash for concrete
EN 459	Building lime
EN 460	Durability of wood and wood-based products - Natural durability of solid wood - Guide to the durability requirements for wood to be used in hazard classes.
EN 480	Admixtures for concrete, mortar and grout - Test methods
EN 495	Flexible sheets for waterproofing - Determination of foldability at low temperature
EN 499	Welding consumables. Covered electrodes for manual metal arc welding of non alloy and fine grain steels. Classification
EN 515	Aluminium and aluminium alloys - Wrought products - Temper designations
EN 520	Gypsum Plaster Boards - Definitions, Requirements and Test Methods
EN 572	Glass in building - Basic soda lime silicate glass products
EN 573	Aluminium and aluminium alloys - Chemical composition and form of wrought products
EN 577	Aluminium and aluminium alloys - Liquid metal -

Reference	Description
	Specifications
EN 599	Durability of wood and wood-based products - Performance of preventive wood preservatives as determined by biological tests
EN 635	Plywood - Classification by surface appearance
EN 636	Plywood – Specifications.
EN 654	Resilient floor coverings. Semi-flexible polyvinyl chloride tiles. Specification
EN 660	Resilient floor coverings. Determination of wear resistance.
EN 673	Glass in building - Determination of thermal transmittance (U value) - Calculation method
EN 674	Glass in building - Determination of thermal transmittance (U value) - Guarded hot plate method
EN 675	Glass in building - Determination of thermal transmittance (U value) - Heat flow meter method
EN 681	Elastomeric seals - Materials requirements for pipe joint seals used in water and drainage applications
EN 685	Resilient, textile and laminate floor coverings. Classification
EN 755	Aluminium and aluminium alloys - Extruded rod/bar, tube and profiles
EN 757	Welding consumables. Covered electrodes for manual metal arc welding of high strength steels. Classification
EN 771.01	Specification for masonry units - Part 1: Clay masonry units
EN 772	Methods of test for masonry units
EN 789	Timber structures - Test methods - Determination of mechanical properties of wood based panels .
EN 816	Sanitary tapware - Automatic shut-off valves PN 10
EN 817	Sanitary tapware - Mechanical mixing valves (PN 10) - General technical specifications
EN 822	Thermal insulating products for building applications - Determination of length and width
EN 823	Thermal insulating products for building applications. Determination of thickness
EN 826	Thermal Insulating Products for Buildings Application - Determination of Compression Behaviour.

Reference	Description
EN 845	Specification for ancillary components for masonry
EN 923	Adhesives - Terms and definitions.
EN 927	Paints and varnishes - Coating materials and coating systems for exterior wood
EN 932	Tests for general properties of aggregates
EN 933	Tests for geometrical properties of aggregates
EN 934	Admixtures for concrete, mortar and grout
EN 947	Hinged or pivoted doors - Determination of the resistance to vertical load.
EN 948	Hinged or pivoted doors -Determination of the resistance to static torsion.
EN 949	Windows and curtain walling, doors, blinds and shutters -Determination of the resistance to soft and heavy body impact for doors.
EN 950	Door leaves - Determination of the resistance to hard body impact
EN 951	Door leaves - Method for measurement of height, width, thickness and squareness.
EN 952	Door leaves - General and local flatness - Measurement method.
EN 970	Non-destructive examination of fusion welds - Visual examination
EN 998	Specification for mortar for masonry
EN 1008	Mixing water for concrete - Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete
EN 1011	Welding. Recommendations for welding of metallic materials.
EN 1014	Wood preservatives - Creosote and creosoted timber - Methods of sampling and analysis
EN 1015	Methods of test of mortar for masonry
EN 1026	Windows and doors - Air permeability - Test methods.
EN 1027	Windows and doors - Water tightness - Test methods.
EN 1036	Glass in building - Mirrors from silver-coated float glass for internal use
EN 1052	Methods of test for masonry
EN 1058	Wood-based panels - Determination of characteristics values of mechanical properties

Reference	Description
	and density.
EN 1063	Glass in building - Security glazing - Testing and classification of resistance against bullet attack
EN 1066	Adhesives –Sampling.
EN 1067	Adhesives - Examination and preparation of samples for testing.
EN 1072	Plywood - Description of bending properties for structural plywood
EN 1081	Resilient floor coverings-Determination of electrical resistance.
EN 1084	Plywood - Formaldehyde release classes determined by the gas analysis method.
EN 1087	Particleboards - Determination of moisture resistance
EN 1090	Execution of steel structures and aluminium structures
EN 1096	Glass in building - Coated glass
EN 1097	Tests for mechanical and physical properties of aggregates
EN 1107	Flexible sheets for waterproofing
EN 1108	Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of form stability under cyclical temperature changes
EN 1109	Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of flexibility at low temperature
EN 1110	Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of flow resistance at elevated temperature
EN 1111	Sanitary tapware - Thermostatic mixing valves (PN 10) - General technical specification
EN 1121	Doors. Behaviour between two different climates. Test method.
EN 1154	Building hardware - Controlled door closing devices - Requirements and test methods
EN 1191	Windows and doors - Resistance to repeat opening and closing –Test method.
EN 1192	Doors -Classification of strength requirements
ENV 1250	Wood preservatives - Methods for measuring losses of active ingredients and other preservative ingredients from treated timber
EN 1286	Sanitary tapware - Low pressure mechanical mixing valves - General technical specification

Reference	Description
EN 1287	Sanitary tapware - Low pressure thermostatic mixing valves - General technical specification
EN 1288	Glass in building - Determination of the bending strength of glass
EN 1294	Door leaves - Determination of the behaviour under humidity variation in successive uniform climates.
EN 1295	Structural design of buried pipelines under various conditions of loading.
EN 1296	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roofing - Method of artificial ageing by long term exposure to elevated temperature
EN 1297	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Method of artificial ageing by long term exposure to the combination of UV radiation, elevated temperature and water
EN 1303	Building hardware. Cylinders for locks. Requirements and test methods
EN 1308	Adhesives for tiles - Determination of slip
EN 1310	Round and sawn timber - Method of measurement of features.
EN 1324	Adhesives for tiles - Determination of shear adhesion strength of dispersion adhesives
EN 1341	Slabs of natural stone for external paving - Requirements and test methods
EN 1346	Adhesives for tiles - Determination of open time
EN 1347	Adhesives for tiles - Determination of wetting capability
EN 1348	Adhesives for tiles - Determination of tensile adhesion strength for cementitious adhesives
EN 1367	Tests for thermal and weathering properties of aggregates
EN 1372	Adhesives. Test method for adhesives for floor and wall coverings. Peel test
EN 1373	Adhesives. Test method for adhesives for floor and wall coverings. Shear test
EN 1401	Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized polyvinyl chloride (PVC-U)
EN 1418	Welding personnel - Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding

Reference	Description
	of metallic materials
EN 1522	Windows, doors, shutters and blinds - Bullet resistance - Requirements and classification
EN 1529	Doors leaves- Height, width, thickness and squareness - Tolerance classes.
EN 1530	Doors leaves - General and local flatness - Tolerance classes
EN 1594	Gas supply systems - Pipelines for maximum operating pressure over 16 bar – Functional Requirements
EN 1602	Thermal insulating products for building applications - Determination of the apparent density
EN 1627	Windows, doors, shutters - Burglar resistance - Requirements and classification
EN 1628	Windows, doors, shutters - Burglar resistance - Test method for the determination of resistance under static loading
EN 1629	Windows, doors, shutters - Burglar resistance - Test method for the determination of resistance under dynamic loading
EN 1630	Windows, doors, shutters - Burglar resistance - Test method for the determination of resistance under static loading
EN 1634	Fire resistance and smoke control tests for door, shutter and openable window assemblies and elements of building hardware
EN 1670	Building hardware. Corrosion resistance. Requirements and test methods
EN 1712	Non-destructive examination of welds. Ultrasonic examination of welded joints. Acceptance levels
EN 1744	Tests for chemical properties of aggregates
EN 1745	Masonry and masonry products - Methods for determining design thermal values
EN 1748	Glass in building - Special basic products - Glass ceramics
EN 1815	Resilient and textile floor coverings-Assessment of static electrical propensity.
EN 1844	Flexible sheets for waterproofing - Determination of resistance to ozone - Plastic and rubber sheets for roof waterproofing
EN 1849	Flexible sheets for waterproofing - Determination of thickness and mass per unit area
EN 1850	Flexible sheets for waterproofing - Determination

Reference	Description
	of visible defect
EN 1863	Glass in building - Heat strengthened soda lime silicate glass
EN 1902	Adhesives. Test methods for adhesives for floor coverings and wall coverings. Shear test
EN 1906	Building hardware. Lever handles and knob furniture. Requirements and test methods
EN 1916	Concrete pipes and fittings, unreinforced, steel fibre and reinforced
EN 1917	Concrete manholes and inspection chambers, unreinforced, steel fibre and reinforced
EN 1926	Natural stone test methods - Determination of uniaxial compressive strength
EN 1928	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of watertightness
EN 1931	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of water vapour transmission properties
EN 1932	External blinds and shutters - Resistance to wind loads - Method of testing
EN 1935	Building hardware. Single-axis hinges. Requirements and test methods
EN 1936	Natural stone test methods - Determination of real density and apparent density, and of total and open porosity
EN 1990	Eurocode – Basis of Structural Design
EN 1991	Eurocode 1: Actions on Structures
EN 1992	Eurocode 2: Design of concrete structures
EN 1993	Eurocode 3: Design of steel structures
EN 1994	Eurocode 4: Design of composite steel and concrete structures
EN 1996	Eurocode 6: Design of masonry structures
EN 1997	Eurocode 7: Geotechnical Design
EN 1998	Eurocode 8: Design of structures for earthquake resistance
EN 10021	General technical delivery requirements for steel and iron products
EN 10025	Hot rolled products of structural steels
EN 10029	Hot rolled steel plates 3 mm thick or above
EN 10034	Structural steel I and H sections - Tolerances on

Reference	Description
	shape and dimensions
EN 10051	Continuously hot-rolled uncoated plate, sheet and strip of non-alloy and alloy steels - Tolerances on dimensions and shape
EN 10055	Hot rolled steel equal flange tees with radiused root and toes - Dimensions and tolerances on shape and dimensions
EN 10056	Structural steel equal and unequal leg angles
EN 10079	Definition of steel products
EN 10080	Steel for the reinforcement of concrete - Weldable reinforcing steel – General
EN 10088	Stainless steels
EN 10111	Continuously hot rolled low carbon steel sheet and strip for cold forming - Technical delivery conditions
EN 10142	Continuously hot-dip zinc coated low carbon steels strip and sheet for cold forming. Technical delivery conditions
EN 10163	Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections
EN 10164	Steel products with improved deformation properties perpendicular to the surface of the product - Technical delivery conditions
EN 10168	Steel products - Inspection documents - List of information and description
EN 10204	Metallic products - Types of inspection documents
EN 10210	Hot finished structural hollow sections of non-alloy and fine grain structural steels
EN 10218	Steel wire and wire products
EN 10219	Cold formed welded structural hollow sections of non-alloy and fine grain steels
EN 10223	Steel wire and wire products for fences
EN 10240	Internal and/or external protective coatings for steel tubes - Specification for hot dip galvanized coatings applied in automatic plants
EN 10244	Steel wire and wire products. Non-ferrous metallic coatings on steel wire.
EN 10250	Open die steel forgings for general engineering purposes
EN 10327	Continuously hot-dip coated strip and sheet of low carbon steels for cold forming. Technical delivery conditions
EN 12002	Adhesives for tiles - Determination of transverse

Reference	Description
	deformation for cementitious adhesives and grouts
EN 12003	Adhesive for tiles - Determination of shear adhesion strength of reaction resin adhesives
EN 12004	Adhesives for tiles - Requirements, evaluation of conformity, classification and designation
EN 12020	Aluminium and aluminium alloys - Extruded precision profiles in alloys EN AW-6060 and EN AW-6063
EN 12039	Flexible sheets for waterproofing - bitumen sheets for roof waterproofing - Determination of adhesion of granules
EN 12046	Operating forces - Test method
EN 12051	Building hardware. Door and window bolts. Requirements and test methods
EN 12074	Welding consumables. Quality requirements for manufacture, supply and distribution of consumables for welding and allied processes
EN 12086	Thermal insulating products for buildings application - Determination of water vapour transmission properties
EN 12087	Thermal insulating products for building applications - Determination of long term water absorption by immersion
EN 12088	Thermal insulating products for buildings application - Determination of long term water absorption by diffusion
EN 12091	Thermal insulating products for buildings application - Determination of freeze-thaw resistance
EN 12150	Glass in building - Thermally toughened soda lime silicate safety glass
EN 12194	Shutters, external and internal and blinds - Misuse - Test methods
EN 12206	Paints and varnishes - Coating of aluminium and aluminium alloys for architectural purposes
EN 12207	Windows and doors - Air permeability - Classification.
EN 12208	Windows and doors - Water tightness - Classification.
EN 12209	Building hardware. Locks and latches. Mechanically operated locks, latches and locking plates. Requirements and test methods
EN 12210	Windows and doors - Resistance to wind load - Classification.

Reference	Description
EN 12211	Windows and doors - Resistance to wind load - Test methods
EN 12216	Shutters, external blinds, internal blinds - Terminology, glossary and definitions
EN 12217	Doors - Operating forces - Requirements and classification
EN 12219	Doors Climatic influences - Requirements and classification.
EN 12224	Geotextiles and geotextile-related products. Determination of the resistance to weathering
EN 12354	Estimation of Acoustic Performance of Buildings from the Performance of Elements
EN 12258	Aluminium and aluminium alloys- Terms and definitions
EN 12310	Flexible sheets for waterproofing. Determination of resistance to tearing
EN 12311	Flexible sheets for waterproofing. Determination of tensile properties.
EN 12316	Flexible sheets for waterproofing. Determination of peel resistance of joints
EN 12317	Flexible sheets for waterproofing - Determination of shear of joints
EN 12337	Glass in building - Chemically strengthened soda lime silicate glass
EN 12350	Testing fresh concrete
EN 12365	Building hardware - Gasket and weatherstripping for doors, windows, shutters and curtain walling
EN 12370	Natural stone test methods - Determination of resistance to salt crystallisation
EN 12371	Natural stone test methods - Determination of frost resistance
EN 12372	Natural stone test methods - Determination of flexural strength under concentrated load
EN 12373	Aluminium and aluminium alloys. Anodizing.
EN 12390	Testing hardened concrete
EN 12400	Windows and pedestrian doors - Mechanical durability - Requirements and classification.
EN 12407	Natural stone test methods - Petrographic examination
EN 12412	Thermal performance of windows, doors and shutters - Determination of thermal transmittance by hot box method



Reference	Description
EN 12429	Thermal insulating products for building applications - Conditioning to moisture equilibrium under specified temperature and humidity conditions
EN 12440	Natural stone - Denomination criteria
EN 12447	Geotextiles and geotextile-related products. Screening test method for determining the resistance to hydrolysis in water
EN 12504	Testing concrete in structures
EN 12519	Windows and pedestrian doors – Terminology
EN 12524	Building materials and products - Hygrothermal properties - Tabulated design values
EN 12534	Welding consumables. Wire electrodes, wires, rods and deposits for gas shielded metal arc welding of high strength steels. Classification
EN 12584	Imperfections in oxyfuel flame cuts, laser beam cuts and plasma cuts - Terminology
EN 12591	Bitumen and bituminous binders - Specifications for paving grade bitumens
EN 12594	Bitumen and bituminous binders - Preparation of test samples
EN 12597	Bitumen and bituminous binders – Terminology
EN 12613	Plastics warning devices for underground cables and pipelines with visual characteristics
EN 12620	Aggregates for concrete
EN 12664	Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Dry and moist products of medium and low thermal resistance
EN 12667	Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Products of high and medium thermal resistance
EN 12691	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of resistance to impact
EN 12697	Bituminous mixtures - Test methods for hot mix asphalt
EN 12765	Classification of thermosetting wood adhesives for non-structural applications.
EN 12808	Grouts for tiles
EN 12825	Raised access floors

Reference	Description
EN 12878	Pigments for the colouring of building materials based on cement and or lime – Specifications and methods of test
EN 12898	Glass in building - Determination of the emissivity
EN 12970	Mastic asphalt for waterproofing - Definitions, requirements and test methods
EN 13009	Hygrothermal performance of building materials and products - Determination of hygric expansion coefficient
EN 13036	Road and airfield surface characteristics - Test methods
EN 13043	Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas
EN 13108	Bituminous mixtures - Material specifications
EN 13111	Flexible sheets for waterproofing - Underlays for discontinuous roofing and walls - Determination of resistance to water penetration
EN 13115	Windows - Classification of mechanical properties - Racking, torsion and operating forces
EN 13139	Aggregates for mortar
EN 13161	Natural stone test methods - Determination of flexural strength under constant moment
EN 13162	Thermal insulation products for buildings - Factory made mineral wool (MW) products - Specification
EN 13163	Thermal insulation products for buildings - Factory made products of expanded polystyrene (EPS) – Specification
EN 13164	Thermal insulation products for buildings - Factory made products of extruded polystyrene foam (XPS) – Specification
EN 13172	Thermal insulating products - Evaluation of conformity
EN 13179	Test for filler aggregate used in bituminous mixtures
EN 13242	Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction
EN 13249	Geotextiles and geotextile-related products - Characteristics required for use in the construction of roads and other trafficked areas (excluding railways and asphalt inclusion)
EN 13251	Geotextiles and geotextile-related products - Characteristics required for use in earthworks,



Reference	Description
	foundations and retaining structures
EN 13253	Geotextiles and geotextile-related products - Characteristics required for use in erosion control works (coastal protection, bank revetments)
EN 13285	Unbound mixtures. Specifications
EN 13286	Unbound and hydraulically bound mixtures. Test Methods.
EN 13364	Natural stone test methods - Determination of the breaking load at dowel hole
EN 13369	Common rules for precast concrete products
EN 13373	Natural stone test methods - Determination of geometric characteristics on units
ENV 13381	Test methods for determining the contribution to the fire resistance of structural members
EN 13415	Test of adhesives for floor covering. Determination of the electrical resistance of adhesive films and composites
EN 13416	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Rules for sampling
EN 13454	Binders, composite binders and factory made mixtures for floor screeds based on calcium sulphate
EN 13476	Plastics piping systems for non-pressure underground drainage and sewerage. Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)
EN 13479	Welding consumables. General product standard for filler metals and fluxes for fusion welding of metallic materials
EN 13494	Thermal insulation products for building applications - Determination of the tensile bond strength of the adhesive and of the base coat to the thermal insulation material
EN 13500	Thermal insulation products for buildings - External thermal insulation composite systems (ETICS) based on mineral wool – Specification
EN 13501	Fire classification of construction products and building elements
EN 13541	Glass in building - Security glazing - Testing and classification of resistance against explosion pressure
EN 13562	Geotextiles and geotextile-related products. Determination of resistance to penetration by

Reference	Description
	water (hydrostatic pressure test)
EN 13583	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of hail resistance
EN 13658	Metal lath and beads - Definitions, requirements, and test methods
EN 13670	Execution of concrete structures
EN 13707	Flexible sheets for waterproofing - Reinforced bitumen sheets for roof waterproofing - Definitions and characteristics
EN 13719	Geotextiles and geotextile-related products. Determination of the long term protection efficiency of geotextiles in contact with geosynthetic barriers
EN 13755	Natural stone test methods – Determination of water absorption at atmospheric pressure
EN 13793	Thermal insulating products for building applications - Determination of behaviour under cyclic loading
EN 13808	Bitumen and bituminous binders. Framework for specifying cationic bituminous emulsions
EN 13877	Concrete pavements
EN 13888	Grout for tiles - Requirements, evaluation of conformity, classification and designation
EN 13893	Test of adhesives for floor covering. Determination of the electrical resistance of adhesive films and composites
EN 13897	Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of watertightness after stretching at low temperature
EN 13914	Design, preparation and application of external rendering and internal plastering
EN 13950	Gypsum plasterboard thermal/acoustic insulation composite panels - Definitions, requirements and test methods
EN 13963	Jointing Materials for Gypsum boards Definitions, Requirements and Test Methods
EN 13964	Suspended Ceilings - Requirements and Test Methods
EN 13969	Flexible sheets for waterproofing - Bitumen damp proof sheets including bitumen basement tanking sheets - Definitions and characteristics
EN 13970	Flexible sheets for waterproofing - Bitumen water vapour control layers - Definitions and

Reference	Description
	characteristics
EN 13984	Flexible sheets for waterproofing - Plastic and rubber vapour control layers - Definitions and characteristics
EN 14024	Metal profiles with thermal barrier - Mechanical performance - Requirements, proof and tests for assessment
EN 14030	Geotextiles and geotextile-related products. Screening test method for determining the resistance to acid and alkaline liquids
EN 14187	Cold applied joint sealants
EN 14188	Joint fillers and sealants
EN 14195	Metal Framing, Components for Gypsum Plasterboard System - Definitions, Requirements and Test Methods
EN 14231	Natural stone test methods - Determination of the slip resistance by means of the pendulum tester
EN 14259	Adhesives for floor covering. Requirements for mechanical and electrical performance
EN 14351	Windows and doors - Product standard, performance characteristics
EN 14353	Metal beads and feature profiles for use with gypsum plasterboards - Definitions, requirements and test methods
EN 14399	High strength structural bolting for preloading
EN 14411	Ceramic tiles - Definitions, classification, characteristics and marking
EN 14483	Vitreous and porcelain enamels - Determination of resistance to chemical corrosion
EN 14532	Welding consumables. Test methods and quality requirements.
EN 14566	Mechanical fasteners for gypsum plasterboard systems - Definitions, requirements and test methods
EN 15048	Non-preloaded structural bolting assemblies
EN 20140	Acoustics - Measurement of sound insulation in buildings and of building elements
EN 20273	Fasteners - Clearance holes for bolts and screws
EN 25817	Arc-welded joints in steel. Guidance on quality levels for imperfections.
EN 26927	Building construction - Jointing products - Sealants – Vocabulary
EN 28394	Building construction - Jointing products -

Reference	Description
	Determination of extrudability of one-component sealants
EN 29048	Building construction - Jointing products - Determination of extrudability of sealants using standardized apparatus
EN 45011	General requirements for bodies operating product certification systems
EN 60335	Household and similar electrical appliances – Safety
EN ISO 140	Acoustics - Measurement of Sound Insulation in Buildings and of Building Elements
EN ISO 354	Acoustics -- Measurement of sound absorption in a reverberation room
EN ISO 717	Acoustics - Rating of sound insulation in buildings and of building elements
EN ISO 898	Mechanical properties of fasteners made of carbon steel and alloy steel
EN ISO 1461	Hot dip galvanized coatings on fabricated iron and steel articles - Specifications and test methods
EN ISO 1513	Paints and varnishes - Examination and preparation of samples for testing
EN ISO 2039	Plastics - Determination of hardness
EN ISO 2320	Prevailing torque type steel hexagon nuts - Mechanical and performance requirements
EN ISO 2808	Paints and varnishes. Determination of film thickness
EN ISO 2810	Paints and varnishes - Natural weathering of coatings - Exposure and assessment
EN ISO 3269	Fasteners - Acceptance inspection
EN ISO 3382	Acoustic - Measurement of the Reverberation Time of Room with reference to other Acoustical Parameters.
EN ISO 3506	Mechanical properties of corrosion-resistant stainless steel fasteners
EN ISO 4014	Hexagon head bolts - Product grades A and B
EN ISO 4016	Hexagon head bolts - Product grade C
EN ISO 4032	Hexagon nuts, style 1. Product grades A and B
EN ISO 4034	Hexagon nuts. Product grade C
EN ISO 4526	Metallic coatings - Electroplated coatings of nickel for engineering purposes
EN ISO 4618	Paints and varnishes - Terms and definitions
EN ISO 4759	Tolerances for fasteners

Reference	Description
EN ISO 5817	Welding - Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) - Quality levels for imperfections
EN ISO 6157	Fasteners - Surface discontinuities
EN ISO 7085	Mechanical and performance requirements of case hardened and tempered metric thread rolling screws
EN ISO 7089	Plain washers- Nominal series- Product grade A
EN ISO 7090	Plain washers, chamfered - Normal series - Product grade A
EN ISO 7091	Plain washers - Normal series - Product grade C
EN ISO 7093	Plain washers - Large series
EN ISO 7389	Building construction - Jointing products - Determination of elastic recovery of sealants
EN ISO 7390	Building construction - Jointing products - Determination of resistance to flow of sealants
EN ISO 8289	Vitreous and porcelain enamels - Low voltage test for detecting and locating defects
EN ISO 8339	Building construction - Sealants - Determination of tensile properties (Extension to break)
EN ISO 8340	Building construction - Sealants - Determination of tensile properties at maintained extension
EN ISO 8502	Preparation of steel substrates before application of paints and related products - Tests for the assessment of surface cleanliness
EN ISO 8504	Preparation of steel substrates before application of paints and related products - Surface preparation methods
EN ISO 9013	Thermal cutting - Classification of thermal cuts - Geometrical product specification and quality tolerances
EN ISO 9046	Building construction - Jointing products - Determination of adhesion/cohesion properties of sealants at constant temperature
EN ISO 9047	Building construction - Jointing products - Determination of adhesion/cohesion properties of sealants at variable temperatures
EN ISO 9692	Welding and allied processes. Recommendations for joint preparation. Manual metal-arc welding, gas-shielded metal-arc welding, gas welding, TIG welding and beam welding of steels
EN ISO 9969	Thermoplastics pipes. Determination of ring stiffness
EN ISO 10077	Thermal performance of windows, doors and

Reference	Description
	shutters - Calculation of thermal transmittance
EN ISO 10319	Geotextiles. Wide-width tensile test
EN ISO 10365	Adhesives - Designation of main failure patterns
EN ISO 10545	Ceramic tiles
EN ISO 10563	Building construction - Sealants for joints - Determination of change in mass and volume
EN ISO 10590	Building construction - Sealants - Determination of tensile properties of sealants at maintained extension after immersion in water
EN ISO 10591	Building construction - Sealants - Determination of adhesion/cohesion properties after immersion in water
EN ISO 10684	Fasteners - Hot dip galvanized coatings
EN ISO 11058	Geotextiles and geotextile-related products -- Determination of water permeability characteristics normal to the plane, without load
EN ISO 11431	Building construction - Jointing products - Determination of adhesion/cohesion properties of sealants after exposure to heat, water and artificial light through glass
EN ISO 11432	Building construction - Sealants - Determination of resistance to compression
EN ISO 11600	Building construction - Jointing products - Classification and requirements for sealants
EN ISO 11654	Acoustic - Sound Absorbers for use in Buildings Rating of Sound Absorption
EN ISO 11890	Paints and varnishes - Determination of volatile organic compound (VOC) content
EN ISO 12236	Geosynthetics -- Static puncture test (CBR test)
EN ISO 12567	Thermal performance of windows and doors - Determination of thermal transmittance by hot box method
EN ISO 12570	Hygrothermal performance of building materials and products - Determination of moisture content by drying at elevated temperature
EN ISO 12571	Hygrothermal performance of building materials and products - Determination of hygroscopic sorption properties
EN ISO 12572	Hygrothermal performance of building materials and products - Determination of water vapour transmission properties
EN ISO 12944	Paints and Varnishes – Corrosion protection of steel structures by protective paint systems.

Reference	Description
EN ISO 12956	Geotextiles and geotextile-related products -- Determination of the characteristic opening size
EN ISO 13433	Geotextiles and geotextile - related products. Dynamic perforation test (Cone drop test)
EN ISO 13918	Welding - Studs and ceramic ferrules for arc stud welding
EN ISO 14122	Safety of machinery - Permanent means of access to machinery
EN ISO 14555	Welding – Arc stud welding of metallic materials.
EN ISO 14688	Geotechnical investigation and testing - Identification and classification of soil
EN ISO 14713	Protection against corrosion of iron and steel in structures - Zinc and aluminium coatings – Guidelines
EN ISO 14731	Welding coordination - Tasks and responsibilities
EN ISO 15148	Hygrothermal performance of building materials and products - Determination of water absorption coefficient by partial immersion
EN ISO 15186	Acoustics - Measurements of Sound Insulation in Buildings and of Building Elements using Sound Intensity.
EN ISO 15695	Vitreous and porcelain enamels - Determination of scratch resistance of enamel finishes
EN ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories
ANSI A108.1	American National Standard Specifications for Installation of Ceramic Tile
ASTM C 289	Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates
ASTM C 635	Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings
ASTM C 636	Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels
ASTM C 834	Latex Sealants
ASTM C 840	Application and Finishing of Gypsum Board
ASTM C1063	Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
ASTM D 3273	Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
ASTM D 4263	Standard Test Method For Indicating Moisture In

Reference	Description
	Concrete By The Plastic Sheet Method
ASTM D 4444	Standard Test Method For Laboratory Standardization And Calibration Of Hand-Held Moisture Meters
ASTM D 4914	Standard Test Methods for Density and Unit Weight of Soil and Rock in Place by the Sand Replacement Method in a Test Pit
ASTM E 1190	Standard test methods for strength of power-actuated fasteners installed in structural members
ASTM E 90	Standard Test Method For Laboratory Measurement Of Airborne Sound Transmission Loss Of Building Partitions And Elements
ASTM E 488	Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements
ASTM E 1264	Acoustical Ceiling Products
ASTM F 1869	Standard Test Method For Measuring Moisture Vapour Emission Rate Of Concrete Subfloor Using Anhydrous Calcium Chloride
BS 1186	Timber for and workmanship in joinery. Specification for timber.
BS 1203	Specification for synthetic resin adhesives (Phenolic and Aminoplastic) for Plywood
DIN 267	Fasteners - Technical delivery conditions
DIN 1259	Glass
DIN 4102	Fire Behaviour of Building Materials and Building Components
DIN 4103	Internal non-loadbearing partitions
DIN 4107	Settlement observations during and after construction of buildings
DIN 4109	Noise Control in Buildings
DIN 4123	Protection of buildings in the area of excavations, foundations and underpinnings
DIN 4124	Building pits and trenches Slopes, working space widths, sheeting
DIN 7863	Non cellular elastomer glazing and panel gaskets; technical delivery conditions
DIN 18089	Fire barriers; fillers for fire-doors; mineral fibre boards (felts); definition, designation, requirements, tests
DIN 18093	Fire barriers; installation of fire doors in fireproof masonry or concrete walls; position and shapes of anchorages, installation
DIN 18095	Smoke control doors; concepts and requirements

Reference	Description
DIN 18100	Doors; wall openings for doors with dimensions in accordance with DIN 4172
DIN 18101	Doors; doors for residential buildings; sizes of door leaves, position of hinges and lock, interdependence of dimensions
DIN 18111	Door frames - Steel door frames
DIN 18168	Light Ceiling Linings and Under Ceilings
DIN 18180	Gypsum plasterboards - Types and requirements
DIN 18181	Gypsum plasterboards for building construction - Application
DIN 18182	Accessories for use with gypsum plasterboards
DIN 18183	Partitions and wall linings with gypsum boards on metal framing
DIN 18202	Dimensional Tolerances in Building Construction
DIN 18203	Tolerances in building construction
DIN 18335	German construction contract procedures (VOB) - Part C: General technical specifications in construction contracts (ATV) - Structural steelwork
DIN 18357	German construction contract procedures (VOB) - Part C: General technical specifications in construction contracts (ATV) - Mounting of door and window hardware
DIN 18360	German construction contract procedures (VOB) - Part C: General technical specifications in construction contracts (ATV) – Metalwork
DIN 18361	German construction contract procedures (VOB) - Part C: General technical specifications in construction contracts (ATV) - Glazing works
DIN 18364	German construction contract procedures (VOB) - Part C: General technical specifications in construction contracts (ATV) - Corrosion protection of steel structures
DIN 18365	German construction contract procedures (VOB) - Part C: General technical specifications in construction contracts (ATV) - Flooring work
DIN 18545	Glazing with sealants; rebates; requirements
DIN 18560	Floor screeds in building construction
DIN 24537	Gratings used as floor coverings - Part 1: Metal gratings
DIN 51958	Testing of organic floor coverings (except textile floor coverings); chemical-physical effect of test agents up to 24 hours
DIN 51961	Resistance to cigarette embers

Reference	Description
DIN 52453-2	Testing of sealing compounds for sealing and glazing in building constructions; migration of binder, paper filter method
DIN 52455	Testing of sealing compounds in buildings constructions - Adhesion and expansion test
DIN 53516	Testing for abrasion resistance
DIN 59600	Strips, Plates and Sheets of Aluminium and Wrought Aluminium Alloys, Hot Rolled, Dimensions
DIN 68706	Interior doors made from wood and wood-based panels
DIN 68800	Protection of timber used in buildings; general specifications
ISO 286-2	ISO system of limits and fits - Part 2: Tables of standard tolerance grades and limit deviations for hole and shafts
ISO 1891	Bolts, screws, nuts and accessories - Terminology and nomenclature - Trilingual edition
ISO 4649	Rubber, vulcanized or thermoplastic - determination of abrasion resistance using a rotating cylindrical drum device
ISO 8992	Fasteners – General Requirements for bolts, screws, studs and nuts.

## 7.6

## HVAC

### Bulgarian Legislation

Reference	Description
State Gazette No. 98/14.11.2008 and amendments SG. 6/23.01.2009; SG. 19/13.03.2009; SG. 42/05.06.2009; SG. 82/16.10.2009; SG. 15/23.02.2010	Energy Efficiency Act

Reference	Description
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No.15 15/2005	Ordinance № 15 of the 2005 technical regulations and standards for design, construction and operation of facilities and equipment for generation, transmission and distribution of heat Ordinances
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 4/2006	Reduce harmful noise with Noise Reduction for buildings in their design and the rules and regulations for the implementation of the works in respect of noise emitted during construction
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 4/17.06.2005	Design, construction and operation of building water supply and sewerage installations
MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS ORDINANCE No. 7/15.12.2004 2008 and amendments SG. 85 of 2009, promulgated, SG. 5 2005 , as amended. and supplemented. No. 85 of 2009, amended. No.88 and 92 of 2009, as amended. and supplemented. No. 2 of 2010	Energy efficiency, heat and energy in building

**Greek Legislation**

Reference	Description
TOTEE 20701-1/2010	Guidelines of Technical Chamber of Greece - National Analytical Specifications of parameters for the calculation of the Buildings energy efficiency and the decision of the Energy Efficiency certificate
TOTEE 20701-2/2010	Guidelines of Technical Chamber of Greece - Thermo physic properties of structural modules and examination of the Thermo-insulating adequacy of Buildings

Reference	Description
TOTEE 20701-3/2010	Guidelines of Technical Chamber of Greece – Climatic data for Greek regions
T.O.T.E.E. 2423/86	Air-conditioning Installations in Buildings
T.O.T.E.E. 2425/87	Elements for Calculating Air-conditioning loads in Building Areas
T.O.T.E.E. 2421/86	Hot water distribution for Heating in Building Areas

7.7

**Fire Fighting**

**Bulgarian Legislation**

Reference	Description
Ministry Of Regional Development And Public Works - Ordinance № Iz-1971 / 29-10-2009	Ordinance № Iz-1971 from 29 October 2009 for construction and technical rules and norms for fire safety
Ministry Of Regional Development And Public Works - PO-PS-1227/26.11.2010	Guidelines for the implementation of Regulation № Iz-1971 from 2009 for construction and technical rules and norms for fire safety

**Greek Legislation**

Reference	Description
Π.Δ. 71/88	“Regulations for Fire Protection of buildings”
K.Y.A. Φ15/οικ. 1589/104/2006	“Fire regulation for industrial buildings and mechanical installations”
TOTEE2451/86	Technical chamber of Greece Recommendations - Buildings Mechanical Installations: Fire Fighting Water Systems

**International Codes and Standards (common for both countries)**

Reference	Description
EN 2:1992/A1:2004	Classification of fires
EN 1866	Mobile fire extinguishers
EN 3	Portable fire extinguishers
EN-15004	Fixed fire fighting systems - Gas extinguishing systems
EN-12094	Fixed fire fighting systems - Components for gas extinguishing systems
EN10240	Internal and/or external protective coatings for steel tubes
EN 10220	Seamless and welded steel tubes - Dimensions and masses per unit length
EN10255	Non-alloy steel tubes suitable for welding or threading. Technical delivery conditions

Reference	Description
EN 1092	Flanges and their joints - Circular flanges for pipes, valves, fittings and accessories
EN 12201	Plastic piping systems for water supply. Polyethylene (PE). General
EN-12845	Fixed fire fighting systems - Automatic sprinkler systems - Design, installation and maintenance
EN 14384	Pillar fire hydrants
EN 671	Fixed fire fighting systems - Hose systems
EN ISO 14557	Fire-fighting hoses - Rubber and plastics suction hoses and hose assemblies.
IEC	International Electrotechnical Commission
EN-54	Fire detection and fire alarm systems
NFPA	As applicable

8.

**Norms and Legislations – SCADA / Telecoms & Security FEED**

Reference	Description
<b>EU LEGISLATION</b>	
ATEX 94/9/EC	Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres.
ATEX 99/92/EC	Safety of Installation. (ATEX 137)
PED 97/23/EC	Pressure Equipment Directive
Directive 89-336 CEE	Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility
<b>CODES AND STANDARDS</b>	
AGA 12	Cryptographic Protection of SCADA Communications
API 1164	Pipeline SCADA Security
EIA -359	Standard Colours for Colour Identification and Coding
EIA RS 232C	Interface between data terminal equipment employing serial binary data interchange
EN 1594	Gas Supply Systems – Pipelines - Maximum operating pressure over 16 bar - Functional Requirements
EN 5026	Cable glands for electrical installations



Reference	Description
EN 10143	Continuously hot-dip coated steel sheet and strip. Tolerances on dimensions and shape
EN 50173-1	Information technology — Generic cabling systems
EN 50267	Common test methods for cables under fire conditions.
EN 55022	Information technology equipment - Radio disturbance characteristics - Limits
EN 60079-0	Electrical Apparatus for explosive gas atmosphere-Part 0: General Requirements;
EN 60079-1	Electrical Apparatus for explosive gas atmosphere-Part 1: Flameproof enclosures “d”;
EN 60079-7	Electrical Apparatus for explosive gas atmosphere-Part 7: Increased Safety “e”;
EN 60079-10-1	Electrical Apparatus for explosive gas atmosphere-Part 10: Classification of hazardous areas;
EN 60079-11	Electrical Apparatus for explosive gas atmosphere-Part 11: Intrinsically Safe “i”;
EN 60079-14	Electrical Apparatus for Explosive Gas Atmospheres. Electrical installations in hazardous areas.
EN 60079-15	Electrical Apparatus for explosive gas atmosphere-Part 15: Construction, Test and marking of type of protection ‘n’;
EN 60228	Conductors of Insulated Cables
EN 60269	Low Voltage Fuses
EN 60332	Tests on electric and optical fibre cables under fire conditions
EN 60529	Classification for degrees of protection provided by enclosures (IP rating)
EN 60670	Boxes and enclosures for electrical accessories for household and similar fixed electrical installations.
EN 60793-1-1	Optical fibres – Part 1-1: Measurement methods and test procedures – General and guidance
EN 60794-1-2	Optical fibre cables Part 1-2: Generic specification Basic optical cable test procedures
EN 60811	Common Test Methods for Insulating and Sheathing Materials of Electric Cables
EN 61000	Electromagnetic Compatibility
EN 61386-1	Specification for conduit systems for cable management. General requirements
EN 61508-1	Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems-Part 1: General Requirements

Reference	Description
EN 61508-2	Functional Safety of Electrical/Electronic/Programmable Electronic Safety-Related Systems-Part 2: Requirements for Electrical/Electronic/Programmable Electronic Safety-Related Systems
EN 61643	Low Voltage Surge Protective Devices
EN 62040	Uninterruptible power supply systems
EN 62305	Protection against Lightning
EN 62337	Commissioning of Electrical, Instrumentation and Control Systems in the Process Industry-Specific Phase and milestones
EN ISO 3740	Determination of sound power levels of noise sources
EN ISO 3746	Acoustics - Determination of Sound Power Levels and Sound Energy Levels of Noise Sources using Sound Pressure – Survey Method using an Enveloping Measurement Surface over a Reflecting Plane
EPPA	European Perimeter Protection Association - Standard for Fencing Systems
IEC 14443	Identification cards - Contactless integrated circuit cards -- Proximity cards
IEC 15693:2010	Identification cards - Contactless integrated circuit cards - Vicinity cards
IEC 60297	Mechanical structures for electronic equipment - Dimensions of mechanical structures of the 482,6 mm (19 in) series
IEC-60331	Fire Resisting Characteristics of Electrical Cables.
IEC 60364	Low Voltage Electrical Installations
IEC 60502-1	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) - Part 1: Cables for rated voltages of 1 kV (Um = 1,2 kV) and 3 kV (Um = 3,6 kV)
IEC 60534-2-1	Industrial Process Control Valves – Part 2-1: Flow Capacity Sizing Equations for Fluid Flow under Installed Conditions
IEC 60849:1998	Sound Systems for Emergency Purposes
IEC 60874	Connector for Optical Fibres and Cables.
IEC 61073-1	Fibre optic interconnecting devices and passive components - Mechanical splices and fusion splice protectors for optical fibres and cables - Part 1: Generic specification
IEC 61082	Preparation of documents used in electro-technology
IEC 61511-1	Functional safety - Safety instrumented systems for the process industry sector - Framework, definitions, system, hardware and software requirements
IEC 78101: 2003	Identification cards - Physical characteristics
IEEE 730	Software Quality Assurance Plan


Reference	Description
IEEE 802.3u	Compliant 100Base-TX twisted pair interfaces, with RJ-45 connector
IEEE 802.3z	Compliant 1000Base-T twisted pair interfaces, with RJ-45 connector, port-based VLAN (IEEE 802.1Q)
IEEE 802.3an-2006	Specific requirements Part 3, Amendment 1: Physical Layer and Management Parameters for 10 Gbit/s Operation
IEEE 802.3af-2003	Power over Ethernet Standard
IEEE 802.3at-2009	Power over Ethernet Plus Standard
IEEE 829	Software Test Documentation
IEEE 830	Software Requirement Specification
ISA 99	Security for Industrial Automation and Control Systems
ISO 10303	Standard for Industrial Automation Systems and Integration - Product data representation and exchange
ISO 80000-1	SI Units and recommendation for use of their multiples and of certain other units
ISO/IEC 11801	Information technology — Generic cabling for customer premises
ISO/IEC 27002	Information Technology – Code of Practice for Information Security Management
ITU G.655	Characteristics of a non-zero dispersion-shifted single-mode optical fibre and cable
ITU G.692	Optical interfaces for multi-channel systems with optical amplifiers
ITU G.702	Digital hierarchy bit rates
ITU G.703	Physical/electrical characteristics of hierarchical digital interfaces.
ITU G.704	Synchronous Frame Structures Used at Primary and Secondary Hierarchical Levels.
ITU G.706	Frame alignment and cyclic redundancy check (CRC) procedures relating to basic frame structures defined in Recommendation G.704.
ITU G.707	Network node interface for the synchronous digital hierarchy (SDH). This Recommendation includes the withdrawn G.708, and G.709 Recommendations
ITU G.711	Pulse code modulation (PCM) of voice frequencies
ITU G.712	Transmission performance characteristics of pulse code modulation channels
ITU G.731	Primary PCM multiplex equipment for voice frequencies.
ITU G.732	Characteristics of primary PCM multiplex equipment operating at 2048 kbit/s.
ITU G.735	Characteristics of primary PCM multiplex equipment operating at 2048 kbit/s and offering synchronous digital access at 384 kbit/s and/or 64 kbit/s.


Reference	Description
ITU G.737	Characteristics of an external access equipment operating at 2048 kbit/s offering synchronous digital access at 384 kbit/s and/or 64 kbit/s.
ITU G.781	Synchronization layer functions
ITU G.783	Characteristics of SDH
ITU G.784	SDH Management
ITU G.811	Timing characteristics of primary reference clocks
ITU G.812	Timing requirements of slave clocks suitable for use as node clocks in synchronization networks
ITU G.821	Error performance of an international digital connection operating at a bit rate below the primary rate and forming part of an integrated services digital network.
ITU G.823	The control of jitter and wander within digital networks which are based on the 2048 kbit/s hierarchy.
ITU G.921	Digital sections based on the 2048 kbit/s hierarchy.
ITU G.957	Optical interfaces for equipments and systems relating to the synchronous digital hierarchy.
TIA/EIA 455	Test Procedures for Fibre Optic Fibres, Cables, Transducers, Connecting and Terminating Devices
TIA/EIA-568-B.2-10	Addendum 1-Transmission Performance Specifications for 4-pair 100-Ω Augmented Category 6 Cabling
TIA 598	Standard for Colour Coding of Fibre Optic Cables

## **APPENDIX E:      AUTHORITIES LIST**


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ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)										
			Contacts with Authorities - List of Correspondence with Authorities Επαφές με Αρχές - Λίστα αλληλογραφίας με Αρχές								AS OF 26.07.2012		
List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παραχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
	1	REGIONAL SERVICES / ΠΕΡΙΦΕΡΕΙΑ											
	1.1	Development Planning, Environment and Infrastructure / Γ.Δ. Αναπτυξιακού Προγραμματισμου, Περιβαλλοντος & Υποδομων											
1	1	General Directorate for Development Planning, Environment And Infrastructures / Envinromental Dpt. - Region. of Eastern Macedonia & Thrace Διεύθυνση ΠΙΕ.ΧΩ Περιφέρειας Α.Μ.Θ. - ΚΟΜΟΤΙΝΗ	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	ΔΙΟΙΚΙΤΗΡΙΟ Dimokratias 1, 691 00, Komotini ΔΙΟΙΚΗΤΗΡΙΟ Δημοκρατίας 1 ΤΚ 69 100 – ΚΟΜΟΤΗΝΗ	2531350347 25313-50123 / 25313-50338 2531350339(Πρωτ. .) 2531350305	Mrs. Papadopoulou Maria Mrs. Apostolidou κα Παπαδοπούλου (Προϊστ.) κα Αποστολίδου	A.R. No / Αρ.Πρ.Αίτ. 36872/11, 13.09.2011	Collection of data regarding Environmental & Spatial Planning issues along the broader area of pipeline routing, within Authority's Jurisdiction Συγκέντρωση στοιχείων αναφορικά με περιβαλλοντικά θέματα, την ύπαρξη χωροταξικών και πολεοδομικών ρυθμίσεων	P.R. No / Αρ.Πρ.Παρ. 1892/ 23.09.2011				14.10.2011 Mrs Apostolidou from Environmental Dpt. will forward the letter to Regional Spatial Planning Dpt., as the responsible authority for environmental and hydrological data is the relevant dpt of Reg. Sect. of Rodopi (Mrs Mireli)
							A.R. No / Αρ.Πρ.Αίτ. 37110/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης					Upon the receival of the letter Mrs. Papadopoulou informed CM that they will not send an official answer, as the letter 1891/ 10.10.2011 refers to both of the Authority's Departments
2	2	General Directorate for Development Planning, Environment And Infrastructures / Envinroment & Water resources Dpt. - Reg. Sect. of Rodopi Διεύθυνση ΠΙΕΧΩ Τμήμα Περιβάλλοντος και ΥδροοικονομίαςΠ.Ε. Ροδόπης	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	ΔΙΟΙΚΙΤΗΡΙΟ Dimokratias 1, 691 00, Komotini ΔΙΟΙΚΗΤΗΡΙΟ Δημοκρατίας 1 ΤΚ 69 100 – ΚΟΜΟΤΗΝΗ	25313-50347 2531350225	Mrs. Papadopoulou Maria Mrs. Mireli κα Παπαδοπούλου (Προϊστ.) κα Μιρέλη	A.R. No/ Αρ.Πρ.Αίτ. 36873/11, 13.09.2011	Collection of data regarding streams, rivers etc., Environmental & Spatial Planning issues Συγκέντρωση στοιχείων αναφορικά με περιβαλλοντικά & Υδρολογικά θέματα (οριοθέτηση περιοχών/ρεμάτων – σχετικά ΦΕΚ, περιορισμούς που διέπουν αυτές κλπ.)	P.R. No / Αρ.Πρ.Παρ. 1891/ 23.09.2011	1891/ 10.10.2011	No data provided	They are a newly established service and they haven't got file with such data.	Mrs. Mireli said that they are a newly established service (Kallikratis implementation started on 01.01.2011) and they haven't got file with such data. They sent a relevant official letter.
							A.R. No / Αρ.Πρ.Αίτ. 37611/12, 24.07.2012	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 3489 / 26.07.12				
3	3	General Directorate for Development Planning, Environment And Infrastructures/ Development Planning Division Γ.Δ. Αναπτ.Προγ/μού, Περι/λοντος&Υποδομών / Δ/ση Αναπτ.Προγ/μού	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	Kakoulidou 1 691 00, Komotini Γ. Κακούλιδου 1 691 00, Κομοτηνή	2531352191 2531021644	Mr. Kaloudis Mrs Hametidou κος Καλούδης κα Χαμετίδου	A.R. No/ Αρ.Πρ.Αίτ. 36879/11, 13.09.2011	Collection of data regarding development programs, studies or projects that may affect P/I routing Συγκέντρωση στοιχείων αναφορικά με προγράμματα, μελέτες ή έργα τα οποία ενδεχομένως επηρεάζουν τη χάραξη, στην ευρύτερη περιοχή ενδιαφέροντος	P.R. No / Αρ.Πρ.Παρ. 54866/1002, 20.09.2011		No data provided	The application letter was forwarded by Development Planning Division to R.S of Kavala. The issue is not under Authority's (R.S of Kavala) jurdisdiction.	Mrs Hametidou will submit an official answer that there aren't any projects under Region's jurisdiction at the area of interest.
							A.R. No / Αρ.Πρ.Αίτ. 37119/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης					


ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)										
			Contacts with Authorities - List of Correspondence with Authorities Επαφές με Αρχές - Λίστα αλληλογραφίας με Αρχές										
List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
4	4	General Directorate for Development Planning, Environment And Infrastructures / Technical Projects Division Γ.Δ. Αναπτ.Προγ/μού, Περ/λοντος&Υποδομών / Δ/ση Τεχνικών Εργων	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	Sismanoglou 78 691 00, Komotini Σισμάνογλου 78 691 00, Κομοτηνή	2531026116 2531021644	Mr. Dermexis Mrs Hametidou κος Δερμεξής κα Χαμετίδου	A.R. No / Αρ.Πρ.Αίτ. 36861/11, 13.09.2011	Collection of data regarding Existing, ongoing, or planned projects (Transportation, Land Reclamation, Hydraulics, E / M, Environmental Projects, etc.) Συγκέντρωση στοιχείων αναφορικά με υφιστάμενα έργα, έργα που τυχόν βρίσκονται σε εξέλιξη, ή προγραμματίζονται, (Συγκοινωνιακά, Εγγειοβελτιωτικά, Υδραυλικά, Η/Μ, Έργα Περιβάλλοντος, κλπ.)	P.R. No / Αρ.Πρ.Παρ. 938, 20.09.2011	938/ 19.10.2011	No data provided	There aren't any projects under Authority's jurisdiction in the area of concern. They haven't got files with official data that may affect p/l routing.	Mrs Hametidou will submit an official answer that there aren't any projects under Region's jurisdiction at the area of interest. She suggested to contact Technical Projects Division of Rodopi Regional Section (already contacted). In case we need certain Hydrological data we have to send a special application in order to search files owned by an older authority (prior to Kallikratis implementation).
5	5	General Directorate for Development Planning, Environment And Infrastructures / Technical Projects Division of Rodopi Regional Section Περιφερειακη Ενοτητα Ροδοπης/Δ/ση Τεχνικών Εργων	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	DIOIKITIRIO Dimokratias 1, 691 00, Komotini ΔΙΟΙΚΗΤΗΡΙΟ Δημοκρατίας 1 TK 69 100 – ΚΟΜΟΤΗΝΗ	2531350115 2531350306	Chrstophorides (Mr) Dir Mr Karamanolis (Deputy Director) Mrs Fotiadou (assign.) Χριστοφορίδης-Δ/ντής Καραμανώλης-Αν.Δ/ντης κα Φωτιάδου	A.R. No / Αρ.Πρ.Αίτ. 36877/11, 13.09.2011	Collection of data regarding Existing, ongoing, or planned projects (Transportation, Land Reclamation, Hydraulics, E / M, Environmental Projects, etc.) Συγκέντρωση στοιχείων αναφορικά με υφιστάμενα έργα, έργα που τυχόν βρίσκονται σε εξέλιξη, ή προγραμματίζονται, (Συγκοινωνιακά, Εγγειοβελτιωτικά, Υδραυλικά, Η/Μ, Έργα Περιβάλ., κλπ.)	P.R. No / Αρ.Πρ.Παρ. 1450, 20.09.2011				Mr Karamanolis stated that the assigned person will contact us on 17/10
							A.R. No / Αρ.Πρ.Αίτ. 37109/11, 02.12.2011	Notice for reply delay and request for urgent actions Επίσημανση καθυστέρησης και ανάγκη επίστευσης απάντησης		1996/ 07.12.2011	No data provided	Authority's in progress and future Projects do not affect p/l routings.	
							A.R. No / Αρ.Πρ.Αίτ. 37612/12- 24.07.12	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 1565 / 26.07.12				
	1.2	Agricultural Economy & Veterinary / Γενική Διεύθυνση Περιφερειακής Αγροτικής Οικονομίας και Κτηνιατρικής											
6	1	Agricultural Ecomony Directorate Region of Eastern Macedonia & Thrace Γενική Διεύθυνση Περιφερειακής Αγροτικής Οικονομίας και Κτηνιατρικής / Διεύθυνση Αγροτικής Οικονομίας Περ ΑΜΘ	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	DIOIKITIRIO Dimokratias 1, 691 00, Komotini ΔΙΟΙΚΗΤΗΡΙΟ Δημοκρατίας 1 TK 69 100 – ΚΟΜΟΤΗΝΗ	2531350439	Hatzopoulou (Mrs) κα Χατζοπούλου	A.R. No / Αρ.Πρ.Αίτ. 36854/11, 13.09.2011	Data collection for Argicultural Engineering infrastructure in the pipeline area. Also for high value agricultural areas Συγκέντρωση στοιχείων αναφορικά με τα υφιστάμενα και μελλοντικά εγγειοβελτιωτικά έργα καθώς και τις ζώνες υψηλής γεωργικής παραγωγικότητας	P.R. No Αρ.Πρ.Παρ. 03/01/721, 20.09.2011	721/ 28.09.2011	No data provided	a.There are no major land reclamation works along p/l routing b.They haven't got data for high value agricultural areas as such maps have not been elaborated in Rodopi Prefecture. c.P/l crosses irrigated areas (Pandrosos up to Komotini ΒΠΠΕ) d.P/l crosses forest areas from Pandrosos up to Borders	





ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)									<div></div>	
			Contacts with Authorities - List of Correspondence with Authorities Επαφές με Αρχές - Λίστα αλληλογραφίας με Αρχές										
List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
7	2	Agricultural Economy & Veterinary Directorate - Region. Sect. of Rodopi Διεύθυνση Αγροτικής Οικονομίας & Κτηνιατρικής Περ. Εν Ροδόπης - ΚΟΜΟΤΙΝΗ	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	DIOIKITIRIO Dimokratias 1, 691 00, Komotini ΔΙΟΙΚΗΤΗΡΙΟ Δημοκρατίας 1 ΤΚ 69 100 – ΚΟΜΟΤΗΝΗ	25313-50420	Raptis (Dir) κος Ράπτης (Δ/ντής)	A.R. No / Αρ.Πρ.Αίτ. 36862/11, 13.09.2011	Data collection for high value agricultural areas Συγκέντρωση στοιχείων αναφορικά με τα υφιστάμενα και μελλοντικά εγγειοβελτιωτικά έργακαθώς και τις ζώνες υψηλής γεωργικής παραγωγικότητας	P.R. No Αρ.Πρ.Παρ. 10405, 20.09.2011	10405/ 06.10.2011	No data provided	a.There are no major land reclamation works along p/l routing b.They haven't got data for high value agricultural areas as such maps have not been elaborated in Rodopi Prefecture. c.P/l crosses irrigated areas (Pandrosos up to Komotini ΒΙΠΕ)	
		Διεύθυνση Αγροτικής Οικονομίας & Κτηνιατρικής Περ. Εν Ροδόπης ΚΟΙΝΟΠΟΙΗΣΗ : Περιφερειακο Συμβούλιο Περιφέρειας ΑΜΘ					A.R. No / Αρ.Πρ.Αίτ. 37617/12-24.07.12	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 7413 / 26.07.12				
8	3	Gen.Dir.for Agricultural Ec.&Veterinary Directorate of Land Policy Attn:Surveying Department Consolidation Department Surveying, Consolidation Department of Rodopi Reg. Section Δ/ση Αγρ.Οικον. &Κτηνιατρικής/ Δ/ση Πολιτικής Γης	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	Philipou 82 69 100, Komotini Φιλίππου 82 69 100, ΚΟΜΟΤΗΝΗ	2531354205 2531354225 2531353916	Mr Stabologlou Mr. Zamboglou κος Σταμπόλογλου κος Ζάμπογλου	A.R. No / Αρ.Πρ.Αίτ. 36885/11, 13.09.2011	Data collection for topographical issues, urban planning (settlement boundaries, etc.), land consolidation and distribution Συγκέντρωση στοιχείων αναφορικά με το πολεοδομικό καθεστώς (όρια οικισμών κλπ.), χρήσεις γης, περιγράμματα των περιοχών αναδασμών και διανομών	P.R. No Αρ.Πρ.Παρ. 03/03/418, 20.09.2011	03/03/418/ 29.09.2011	No data provided	Relevant data regarding consolidated land will be provided at Authority's premises (deposit fee is required) <b>C&amp;M will proceed to suggested actions, after the finalization of p/l routing and during the detail design phase.</b>	
	1.3	Development / Γενική Διεύθυνση Ανάπτυξης											
9	1	General Directorate for Development Γενική Διεύθυνση Ανάπτυξης	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	DIOIKITIRIO Dimokratias 1, ΔΙΟΙΚΗΤΗΡΙΟ Δημοκρατίας 1 69 100 – ΚΟΜΟΤΗΝΗ	2531350126 2531350450	Mr. Delidis Mr Psaltis Panagiotis Mr Tatarakis κος Δελίδης κος Ψάλτης Π. Κος Ταταράκης	A.R. No / Αρ.Πρ.Αίτ. 36881/11, 13.09.2011	Provision of information available by Authority, on the area of interest Παροχή διαθέσιμων στοιχείων αρμοδιότητας της Υπηρεσίας στην περιοχή ενδιαφέροντος	P.R. No Αρ.Πρ.Παρ. 176, 21.09.2011				
							A.R. No / Αρ.Πρ.Αίτ. 37108/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης		303 / 21.12.2011	No data provided	No involvement with Projects under Authority's jurisdiction	
	1.4	Intermediate Management Authority / Ενδιαμεση Διαχειριστική Αρχή											




ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONSTRUCT NUMBER: C-17-2011)										
			Contacts with Authorities - List of Correspondence with Authorities Επαφές με Αρχές - Λίστα αλληλογραφίας με Αρχές										
List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
10	1	Intermediate Management Authority - Region. of Eastern Macedonia & Thrace Ενδιάμεση Διαχειριστική Αρχή Περιφέρειας Ανατολικής Μακεδονίας Θράκης	Region of East Macedonia & Thrace - Περιφέρεια Αν. Μακεδονίας - Θράκης	Irodotou 28, Ηροδότου 28, 69100 Komotini	25313 52300	Mr Pitsinigos B. Κος Πιτσινίγκος Β.	A.R. No / Αρ.Πρ.Αίτ. 36880/11, 13.09.2011	Collection of data regarding existing, ongoing, or planned projects under Authority's jurisdiction Συγκέντρωση στοιχείων αναφορικά με υλοποιούμενα και προγραμματιζόμενα έργα καθώς και οποιοδήποτε άλλο στοιχείο αρμοδιότητας της Υπηρεσίας	P.R. No Αρ.Πρ.Παρ. 1730, 20.09.2011	1730/A/ 05.10.2011	Egnatia Motorway interchange at BIIE area (jpg file)	a.No Project under Regional Operational Programme, affects p/l routing. b.The construction of the Egnatia Motorway interchange at BIIE area is planned c.Construction of road "Komotini-Nimfea-Boarders". Relevant contacts have to be made with Egnatia Odos S.A. ( (Item No 5.1) and Ministry of infrastructures Management Authority.	
	2	DECENTRALIZED ADMINISTRATION / ΑΠΟΚΕΝΤΡΩΜΕΝΗ ΔΙΟΙΚΗΣΗ											
	2.1	Environmental Authorities / Περιβαλλοντικές Υπηρεσίες											
11	1	General Directorate of Planning & Environmental Policy Γενική Διεύθυνση Χωροταξίας & Περιβαλλοντικής Πολιτικής	Decentralized Administration of Macedonia & Thrace - Αποκεντρωμένη Διοίκηση Μακεδονίας - Θράκης	Taki Economides 1 - THESSALONIKI Τάκη Οικονομίδη 1 - ΘΕΣ/ΝΙΚΗ	2313309169	Mr P. Georgiadis κος Γεωργιάδης	A.R. No / Αρ.Πρ.Αίτ. 36874/11, 13.09.2011	For Information Προς πληροφόρηση	P.R. No Αρ.Πρ.Παρ. 7970, 20.09.2011				
12	2	General Directorate of Planning & Environmental Policy Division of Environment and Spatial Planning EM-TH Department of Environment & Spatial Planning Department of Urban Planning Γενική Διεύθυνση Χωροταξίας & Περιβαλλοντικής Πολιτικής Διεύθυνση Περιβάλλοντος και Χωρικού Σχεδιασμού ΑΜΘ Τμήμα Περ/κού & Χωρικού Σχεδιασμού Τμήμα Πολεοδομικού Σχ/μού	Decentralized Administration of Macedonia & Thrace - Αποκεντρωμένη Διοίκηση Μακεδονίας - Θράκης	3rd km Komotini-Alexandroupoli 3ο χλμ. Κομοτηνής - Αλεξανδρ/λης 691 00	2531027966 2531032140	Mrs. L. Rizou (director) Mrs. Vezirianidou(Urban Planning dpt) κα Ρίζου(Δντρια) κα Βεζυριανίδου (Πολεοδ.)	A.R. No / Αρ.Πρ.Αίτ. 36868/11, 13.09.2011	Collection of data regarding Environmental & Spatial Planning issues along the broader area of pipeline routing, within Authority's Jurisdiction Συγκέντρωση στοιχείων αναφορικά με περιβαλλοντικά θέματα, την ύπαρξη χωροταξικών και πολεοδομικών ρυθμίσεων, ΑΕΠΟ του έργου «Οδός Κομοτηνή – Νυμφαία – Ελληνοβουλγαρικά Σύνορα»	P.R. No / Αρ.Πρ.Παρ. 3640, 20.09.2011	3830/ 10.10.2011	Environmental Terms for the road Komotini - Nimfaia - Greek-Bulgarian borders (Egnatia Highway Vertical road)	a.Suggestion for p/l routing to the east of the road Komotini - Nimfaia - Greek-Bulgarian borders b.According to the General Urban Plan (ΓΠΣ) of Komotini -which is at the final stage of approval procedure- p/l routing passes through the proposed Urban Control Zone (ZOE). Further investigation with Komotini Municipality ( Item No 4.1) is required.	
							A.R. No / Αρ.Πρ.Αίτ. 37608/12- 24.07.12	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 3061 / 26.07.12				


ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONSTRUCT NUMBER: C-17-2011)										
			Contacts with Authorities - List of Correspondence with Authorities Επαφές με Αρχές - Λίστα αλληλογραφίας με Αρχές								AS OF 26.07.2012		
List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
13	3	General Directorate of Planning & Environmental Policy Division of Water EM-TH Διεύθυνση Υδάτων Ανατολικής Μακεδονίας - Θράκης ΑΔΜΘ	Decentralized Administration of Macedonia & Thrace - Αποκεντρωμένη Διοίκηση Μακεδονίας - Θράκης	Εθν. Antistasis 2, PO Box 1173, 65110, Kavala Εθν. Αντίστασης 2, Τ.Θ. 1173, 65110, Καβάλα	2510228942 - 52	Chriysochoides (Mr.) Dir. - Kambas (Mr) κος Χρυσοχοΐδης κος Καμπάς	A.R. No / Αρ.Πρ.Αίτ. 36875/11, 13.09.2011	a) Collection of data regarding streams, rivers etc. along the broader area of pipeline routing b)Information about scheduled or in progress projects within Authority's Jurisdiction Συγκέντρωση στοιχείων αναφορικά με υδρολογικά θέματα (οριοθέτηση ρεμάτων – σχετικά ΦΕΚ, κλπ.), την ύπαρξη θεσμοθετημένων ρυθμίσεων και έργα	P.R. No / Αρ.Πρ.Παρ. 16609, 20.09.2011	16609/ 28.09.2011	No data provided	Authority hasn't got relevant data On 07.10.2011, during a telephone contact with Mr. Kambas, after receiving Authpity's answer, he informed us the following: a.Relevant data may be provided by Regional Technical Projects Division (Item No 1.1.4) b.Authority investigated possible involvement of p/l routing with a quarry area and noted no involvement.	
		Agricultural Authorities / Αγροτικές Διευθύνσεις											
14	1	Agricultural Development Directorate - DAEMTH Διεύθυνση Αγροτικών Υποθέσεων Ανατολικής Μακεδονίας-Θράκης ΑΔΜΘ	Decentralized Administration of Macedonia & Thrace - Αποκεντρωμένη Διοίκηση Μακεδονίας - Θράκης	D. Tsetine 1, Δημητρίου Τσετινέ 1, 69100 KOMOTINI	25310-25030 25310-72518	Karabaglides Chr (Mr) - Tasidou (Mrs.) κος Καραμπαγλίδης κα Τασίδου	A.R. No / Αρ.Πρ.Αίτ. 368561/11, 13.09.2011	Data collection for high value agricultural areas Συγκέντρωση στοιχείων αναφορικά με τα υφιστάμενα και μελλοντικά εγχειοβελτιωτικά έργα δικαιοδοσίας σας καθώς και τις ζώνες υψηλής γεωργικής παραγωγικότητας	P.R. No / Αρ.Πρ.Παρ. 16669, 20.09.2011	17327/ 27,09,2011	No data provided	Provision of relevant Data is under 1.2.1, 2, 3 Authorities Jurisdiction	


ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)										
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List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
	2.2	Forest Inspection Authorities / Δασικές Υπηρεσίες											
15	1	Δ/ση Συντονισμού & Επιθεώρησης Δασών ΑΔΜΘ	Decentralized Administration of Macedonia & Thrace - Αποκεντρωμένη Διοίκηση Μακεδονίας - Θράκης	Georgikis Sxolis Av. Α.Γεωργ.Σχολής 46 - 55 134 ΘΕΣ/ΝΙΚΗ	2313-309585 2313-303341	Anastasiou (Mr) Director Mrs E. Kika κος Αναστασίου (Δ/ντής)	A.R. No / Αρ.Πρ.Αίτ. 36866/11, 13.09.2011	Data collection for Protected Forest Areas Συγκέντρωση στοιχείων αναφορικά με τις υφιστάμενες προστατευόμενες δασικές περιοχές (οριοθέτηση περιοχών – σχετικά ΦΕΚ, σχετικούς περιορισμούς κλπ.)	P.R. No / Αρ.Πρ.Παρ. 63041, 20.09.2011	63041/ 5.10.2011		Authority forwards the letter to Forest Inspection Directorate of Rodopi (item no 2.2.3)	
16	2	Γενική Διεύθυνση Δασών & Αγροτικών Υποθέσεων ΑΔΜΘ	Decentralized Administration of Macedonia & Thrace- Αποκεντρωμένη Διοίκηση Μακεδονίας - Θράκης	Τάκη Οικονομίδη - Καθ.Ρωσσίδου 11 ΘΕΣ/ΝΙΚΗ	2313309114 & 891	Fragiskakis (Mr) Director κος Φραγκισκάκης (Δ/ντής)	A.R. No / Αρ.Πρ.Αίτ. 36857/11, 13.09.2011	Data collection for Protected Forest Areas Συγκέντρωση στοιχείων αναφορικά με τις υφιστάμενες προστατευόμενες δασικές περιοχές (οριοθέτηση περιοχών – σχετικά ΦΕΚ, σχετικούς περιορισμούς κλπ.)	P.R. No / Αρ.Πρ.Παρ. 62942, 20.09.2011				
							A.R. No / Αρ.Πρ.Αίτ. 37107/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης		87038 / 06.12.2011		Authority forwarded the letter to Forest Inspection Directorate of Rodopi. Authority hasn't got any further data or comments	
17	3	Forest Inspection Directorate of Rodopi Διεύθυνση Δασών Ροδόπης (ΑΔΑΜΘ) - ΚΟΜΟΤΙΝΗ	Decentralized Administration of Macedonia & Thrace- Αποκεντρωμένη Διοίκηση Μακεδονίας - Θράκης	3rd km Komotini - Alexandroupolis TK 69 100 ΚΟΜΟΤΙΝΗ	25310-73673	Ntinias Vas. (Mr) - κος Ντίνας κος Τσομπανίδης ή Αθανασίου	A.R. No / Αρ.Πρ.Αίτ. 36871/11, 13.09.2011	Data collection for Protected Forest Areas Συγκέντρωση στοιχείων αναφορικά με τις υφιστάμενες προστατευόμενες δασικές περιοχές (οριοθέτηση περιοχών – σχετικά ΦΕΚ, σχετικούς περιορισμούς κλπ.)	P.R. No / Αρ.Πρ.Παρ.17060, 23.09.2011	17060/ 26.10.2011	C D with a routing proposed by the Authority	According to field survey, Authority proposes a combination of proposed an alternative p/l routes for the minimization of possible damage to the environment	
							A.R. No / Αρ.Πρ.Αίτ. 37615/12, 24.07.2012	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 15052 / 26.07.12				
	3	LOCAL ARCHAEOLOGICAL SERVICES / ΤΟΠΙΚΕΣ ΑΡΧΑΙΟΛΟΓΙΚΕΣ ΥΠΗΡΕΣΙΕΣ											
18	1	15th Byzantine Antiquities Inspection Authority 15η Εφορεία Βυζαντινών Αρχαιοτήτων - ΚΟΜΟΤΙΝΗ	Ministry of Culture & Tourism Υπουργείο Πολιτισμού & Τουρισμού	Sokratous Σωκράτους 11 69 100 ΚΟΜΟΤΙΝΗ	25310-35870	I Kanonides (Mr) Director - Zoe Miltakaki (Mrs) κος Κανονίδης (Δντης) κα Μητσακάκη	A.R. No / Αρ.Πρ.Αίτ. 36852/11, 13.09.2011	Collection of data for Antiquities (Byzantine) Συγκέντρωση στοιχείων Βυζαντινών Αρχαιοτήτων	P.R. No / Αρ.Πρ.Παρ. 2529, 20.09.2011	2529/ 29.09.2011	No data provided	Proposed and alternative routings near Papikio mountain Arhaeological area (ΦΕΚ 284/Β/87). Authority has no objection, provided that the proposed route is followed.	

ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONSTRUCT NUMBER: C-17-2011)										
			Contacts with Authorities - List of Correspondence with Authorities Επαφές με Αρχές - Λίστα αλληλογραφίας με Αρχές										
List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
							A.R. No / Αρ.Πρ.Αίτ. 37614/12- 24.07.12	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 2341 / 26.07.12				
19	2	ΙΘ' Classical Antiquities Inspection Authority ΙΘ΄ Εφορεία Προϊστορικών και Κλασικών Αρχαιοτήτων - ΚΟΜΟΤΙΝΗ	Ministry of Culture & Tourism Υπουργείο Πολιτισμού & Τουρισμού	A. Symeonidi 4 - Arch. Museo A. Συμεωνίδη 4 Αρχαιολογικό Μουσείο Komotini - 69100	25310-22411	Dim. Slilardi κα Σιλιάρδη	A.R. No / Αρ.Πρ.Αίτ. 36855/11, 13.09.2011	Collection of data for Antiquities (Classical) Συγκέντρωση στοιχείων Κλασικών Αρχαιοτήτων	P.R. No / Αρ.Πρ.Παρ. 3220, 20.09.2011	Authority's answer is incorporated into the Consolidated answer: Η απάντηση της υπηρεσίας ενσωματώθηκε στην επιστολή: ΥΠΠΟΤ/ΓΔΑΠ Κ/ΑΡΧ/Α1/Φ40/ 108145/4643/21 .11.11			Authority has identified some antiquities in the general p/l corridor area.They will proceed to field survey on 17/10, in order to pinpoint such antiquities via GPS. There are not fully protected archaeological zones uner their jurisdiction, along the general p/l corridor area.
							A.R. No / Αρ.Πρ.Αίτ. 37616/12- 24.07.12	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 3009 / 26.07.12				
20	3	Newer Antiquities Inspection Authority Υπηρεσία Νεοτέρων Μνημείων και Τεχν. Εργων ΑΜΘ - ΞΑΝΘΗ	Ministry of Culture & Tourism Υπουργείο Πολιτισμού & Τουρισμού	Thermopylon 1 - 67100 Θερμοπυλών 1 Ξάνθη	25410-26760	Baltazopoulou (Mrs) - Director κα Μπαλταζοπούλου	A.R. No / Αρ.Πρ.Αίτ. 36867/11, 13.09.2011	Collection of data for Antiquities (Newer) Συγκέντρωση στοιχείων Νεοτέρων Αρχαιοτήτων	P.R. No / Αρ.Πρ.Παρ. 509, 20.09.2011	509/ 26.09.2011	No data provided	No involvement with Antiquities under Authority's jurisdiction	
	4	MUNICIPALITY SERVICES / ΔΗΜΟΣ ΚΟΜΟΤΗΝΗΣ											
21	1	Municipality of Komotini / City Planning Division Technical Services Division (Δήμος Κομοτηνής / Δ/ση Πολεοδομίας Δ/ση Τεχνικών Υπηρεσιών)	Municipality of Komotini	1 Viziinou Park, Πλ. Βυζυηνού 1 691 00, Komotini	25313 - 50348 25313 - 50329	Mr. Papatheodorou Mrs Antoniadou	A.R. No / Αρ.Πρ.Αίτ. 36884/11, 13.09.2011	Collection of data regarding city planning drawings, existing and future settlements or future expansions etc. along the broader area of pipeline routing, within Authority's Jurisdiction Συγκέντρωση στοιχείων αναφορικά με την ύπαρξη χωροταξικών και πολεοδομικών ρυθμίσεων, υφιστάμενα, εν εξελίξει ή προγραμματιζόμενα έργα	P.R. No / Αρ.Πρ.Παρ. 2974, 20.09.2011	e-mail 11.10.2011  2974/16.11.201 1			Mr Papatheodorou will send us he General Urban Plan (ΓΠΣ) of Komotini -which is at the final stage of approval procedure. (First part was submitted unofficially on 10/10 )


ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONSTRUCT NUMBER: C-17-2011)									<div></div>	
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List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
							A.R. No / Αρ.Πρ.Αίτ. 37609/12-24.07.12	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 40981 / 26.07.12				
22	2	Komotini Municipal Water Supply - Sewage Corporation (Δημοτική Επιχείρηση Υδρευσης – Αποχέτευσης Κομοτηνής (Δ.Ε.Υ.Α.Κ.))	Municipality of Komotini	Bakalbassis 6, Μπακάλμπαση6 69100 Komotini	2531025555	Mr. Gountakos Mr. Peltekis κος Γκουντάκος κος Πελέκης	A.R. No / Αρ.Πρ.Αίτ. 36883/11, 13.09.2011	Collection of data regarding Water Supply and Sewerage infrastructure along the broader area of pipeline routing, within Authority's Jurisdiction Συγκέντρωση στοιχείωναν αναφορικά με υφιστάμενες εγκαταστάσεις / δίκτυα καθώς και έργα αρμοδιότητας της Υπηρεσίας	P.R. No / Αρ.Πρ.Παρ. 3275, 20.09.2011				On 14/10, Mr Peltekis said to contact early next week On 20/10, Mr Peltekis said they have prepared the official answer and they are about to send it.
							A.R. No / Αρ.Πρ.Αίτ. 37111/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης					





ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)										
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	5	MINISTERIAL - CENTRAL AUTHORITY SERVICES / ΥΠΟΥΡΓΕΙΑ - ΚΕΝΤΡΙΚΕΣ ΥΠΗΡΕΣΙΕΣ											
23	1	EGNATIA ODOS S.A. (ΕΓΝΑΤΙΑ ΟΔΟΣ Α.Ε.)	Ministry of Infrastructure, Transportation and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	6th Km Road Thessaloniki - Thermi, 6ο χλμ. Θεσ/νίκης - Θέρμης 570 01, Thessaloniki	2310470353 2310470190	Mr. Simeoforidis κος Συμεοφορίδης	A.R. No / Αρ.Πρ.Αίτ. 36889/11, 13.09.2011	Request for the following: a) Submission of 1:5.000 drawings for the road Komotini - Nimfaia - Greek-Bulgarian borders b)expropriation limits, rest and/or tolls areas c) scheduled and future projects Αίτηση για: α) χάρτες 1:5.000 της χάραξης «Οδός Κομοτηνή – Νυμφαία – Ελληνοβουλγαρικά Σύνορα» β) όρια απαλλοτρίωσης της οδού, και περιοχών ΣΕΑ, κτιρίων εξυπηρέτησης διοδίων κλπ. γ) διαθέσιμα στοιχεία αναφορικά με προγραμματιζόμενα και μελλοντικά έργα	P.R. No / Αρ.Πρ.Παρ. Α304836, 20.09.2011	e-mail 11.11.2011 Εκκρεμεί η επιστολή της Υπηρεσίας		Mr. Simeoforidis said that he will send road axis, expropriation limits etc. upon consultation with the Studies Division Head	
							A.R. No / Αρ.Πρ.Αίτ. 37613/12-24.07.12	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. Α333280 / 26.07.12				
24	2	Greek Railway Organization / Infrastructure General Division (Ο.Σ.Ε. / Γενική Διεύθυνση Υποδομής) Studies Division(Δνση Μελετών)	Ministry of Infrastructure, Transport and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	1-3 Karolou str. Καρόλου 1, 10437, Athens	2105297206 2105297248	Mr. Mouroudelis(Δ.Μ) Mrs. Vamvakousi κος Μωρουδέλης κα Βαμβακούση	A.R. No / Αρ.Πρ.Αίτ. 36888/11, 13.09.2011	Request of the following: a) routing of the railroad b) expropriation limits c) existance of electric drive railroad areas d) scheduled and future works α) χάραξη υφιστάμενης σιδηροδρομικής γραμμής β) τα όρια απαλλοτρίωσης / προϋποθέσεις διέλευσης του αγωγού γ) εάν υφίσταται ή προβλέπεται ηλεκτροκίνηση της γραμμής δ) εν εξελίξει ή προγρ/ζόμενες εργασίες /επέκταση υφιστάμενου δικτύου	P.R. No / Αρ.Πρ.Παρ. 2645114, 20.09.2011			Authority will proceed to the collection of scheduled and future works in the area (if any). We will contact again on 18/10	
							A.R. No / Αρ.Πρ.Αίτ. 37113/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης					


ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)										
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25	3	Greek Railway Organization / Infrastructure General Division (Ο.Σ.Ε. / Γενική Διεύθυνση Υποδομής) Production Division(Δνση Παραγωγής)	Ministry of Infrastructure, Transport and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	4 Stathmou str. Σταθμού 4, Thessaloniki	2310599338 2310599345	Mr. Giovos κος Γιωβος	A.R. No / Αρ.Πρ.Αίτ. 36888/11, 13.09.2011	Request of the following: a) routing of the railroad b) expropriation limits c) existance of electric drive railroad areas d) scheduled and future works α) χάραξη υφιστάμενης σιδηροδρομικής γραμμής β) τα όρια απαλλοτρίωσης / προϋποθέσεις διέλευσης του αγωγού γ) εάν υφίσταται ή προβλέπεται ηλεκτροκίνηση της γραμμής δ) εν εξελίξει ή προγρ/ζόμενες εργασίες /επέκταση υφιστάμενου δικτύου	P.R. No / Αρ.Πρ.Παρ. 2046518, 20.09.2011	2046534 / Φ1600-2 / 22.11.2011		NO INVOLVEMENT	
26	4	Projects Railway Company S.A. (ΕΡΓΑ Ο.Σ.Ε. Α.Ε.)	Ministry of Infrastructure, Transport & Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	27 Karolou str., Καρόλου 27, 104 37, Athens	1.2105283344 2.2105283120 3.2105283395	1Mr. Krokos 2.δ/νη συντονισμού 3.Προϊστ.δ/νης, κος Κοτσαράς	A.R. No / Αρ.Πρ.Αίτ. 36888/11, 13.09.2011	Request of the following: a) routing of the railroad b) expropriation limits c) existance of electric drive railroad areas d) scheduled and future works α) χάραξη υφιστάμενης σιδηροδρομικής γραμμής β) τα όρια απαλλοτρίωσης / προϋποθέσεις διέλευσης του αγωγού γ) εάν υφίσταται ή προβλέπεται ηλεκτροκίνηση της γραμμής δ) εν εξελίξει ή προγρ/ζόμενες εργασίες /επέκταση υφιστάμενου δικτύου	P.R. No / Αρ.Πρ.Παρ. 205397, 20.09.2011	209262 / 30.12.2011		NO INVOLVEMENT	
							A.R. No / Αρ.Πρ.Αίτ. 37112/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσκευσης απάντησης		209262 / 30.12.2011		Authority is responsible for scheduled and future works. No scheduled works in the wider area of interest.	
27	5	GEAOSE S.A. (ΓΑΙΑΟΣΕ Α.Ε)	Ministry of Infrastructure, Transport & Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	301LiossionAv. Λιοσίων 301, 104 45, Athens	2108318158	Managing Director Mr. S.Xekalakis κος Ξεκαλάκης	A.R. No / Αρ.Πρ.Αίτ. 36888/11, 13.09.2011	Request of the following: a) routing of the railroad b) expropriation limits c) existance of electric drive railroad areas d) scheduled and future works α) χάραξη υφιστάμενης σιδηροδρομικής γραμμής β) τα όρια απαλλοτρίωσης / προϋποθέσεις διέλευσης του αγωγού γ) εάν υφίσταται ή προβλέπεται ηλεκτροκίνηση της γραμμής δ) εν εξελίξει ή προγρ/ζόμενες εργασίες /επέκταση υφιστάμενου δικτύου	P.R. No / Αρ.Πρ.Παρ. 19854, 20.09.2011	22.09.2011 (answer sent by e-mail: S.Xekalakis@geaiose.gr)	DWG with the routing of the railroad		




ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONSTRUCT NUMBER: C-17-2011)									<div></div>	
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28	6	Greek Telecommunication Organization / Regions General Division (Ο.Τ.Ε. / Γενική Διεύθυνση Περιφερειών)	Ministry of Infrastructure, Transport & Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	90 Kifissias ave., Λ. Κηφισίας 90, 151 24, Athens	2106117196	Mr. A. Pantazopoulos κος Πανταζόπουλος	A.R. No / Αρ.Πρ.Αίτ. 36890/11, 13.09.2011	For Information	P.R. No / Αρ.Πρ.Παρ. 183098, 21.09.2011	521/7522/ 05.10.2011			
29	7	Greek Telecommunication Organization / Region of North Greece (Ο.Τ.Ε. / Τηλεπ. Περιφέρεια Βορείου Ελλάδας)	Ministry of Infrastructure, Transport & Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	33 Karolou Dil str. Καρόλου Ντηλ 33 546 23, Thessaloniki	2310361220 2310361192	Mr. I. Thalakourithis Mr. S. Mavridis κ. Ι. Δαλακουρίδης κ. Σ. Μαυρίδης	A.R. No / Αρ.Πρ.Αίτ. 36890/11, 13.09.2011	Information about the existance of G.T.O.'s networks within pipeline routing broader area /scheduled and future works for the installation of new G.T.O.'s networks Πληροφορίες αναφορικά με υφιστάμενα / σε εξέλιξη δίκτυα και υποδομές, καθώς και με αυτά που τυχόν προγραμματίζονται	P.R. No / Αρ.Πρ.Παρ. 7117, 20.09.2011	521/7522/ 05.10.2011	cd with G.T.O.'s networksalong pipeline routing (proposed and alternatives)	Contact with the local Dpt of GTO is required, prior to construction works commencement date.	
30	8	Public Power Corporation (P.P.C.) (Δ.Ε.Η.) Department of Transmission System (Δ/νση Συστήματος Μεταφοράς)	Minisrty of Environment, Energy and Climate Change Υ.Π.Ε.Κ.Α.	70Ag.Annis str., Αγ.Αννης70, 122 41, Egaleo, Athens	210-3492150	Mr Vlahos κος Βλάχος	A.R. No / Αρ.Πρ.Αίτ. 36859/11, 13.09.2011	Request for information about the crossings of IGB pipeline with the existing or in progress HV lines / structures (Substations etc.) Αίτηση για τα διαθέσιμα στοιχεία σχετικά με υφιστάμενες/εν εξελίξει γραμμές του Σ.Μ. Υ. Τ. και υποσταθμούς κατά μήκος της προκαταρκτικής και εναλ.οδεύσεων και στην ευρύτερη περιοχή	P.R. No / Αρ.Πρ.Παρ. 4185, 20.09.2011	1. ΔΣΜ/4129/ 27.09.2011 2. E-MAIL 24.10.2011, ΔΣΜ/4629/ 25.10.2011		2. High Voltage lines in the area of concern	
31	9	Public Power Corporation (P.P.C.) (Δ.Ε.Η.) Department of Transmission System New Projects (Διεύθυνση Νέων Έργων Μεταφοράς)	Minisrty of Environment, Energy and Climate Change Υ.Π.Ε.Κ.Α.	89 Dirrahiou & Kifisou str., 104 43, Athens (Δυρραχίου 89& Κηφισού 104 43, Αθήνα)	210-5192422 210-5192425	Mr Makrikostas Mr Mageiras(ass.) Κος Μακρυκόστας Κος Μάγειρας	A.R. No / Αρ.Πρ.Αίτ. 36858/11, 13.09.2011	Request for information about the crossings of IGB pipeline with future High Voltage lines / structures Αίτηση για τα διαθέσιμα στοιχεία σχετικά με Νέες γραμμές του Σ.Μ. Υ. Τ. και υποσταθμούς κατά μήκος της προκαταρκτικής και εναλ.οδεύσεων και στην ευρύτερη περιοχή	P.R. No / Αρ.Πρ.Παρ. 5321, 20.09.2011	24.10.2011 (answer sent by e-mail: mageiras@dne m.dei.grr)	No data provided	No involvement with Authority's projects	Mr Mageiras said to contact again on 20/10 21/10 Mr Mageiras will reply by e-mail. No new High Voltage lines are foreseen in the area of interest
32	10	Public Power Corporation (P.P.C.) (Δ.Ε.Η.) General Division of Mines (Γενική Διεύθυνση Ορυχείων)	Minisrty of Environment, Energy and Climate Change Υ.Π.Ε.Κ.Α.	89 Dirrahiou & Kifisou str., 104 43, Athens (Δυρραχίου 89& Κηφισού 104 43, Αθήνα)	210 5123999	Mr P. Nikolakakos, Director κος Νικολακάκος	A.R. No / Αρ.Πρ.Αίτ. 36876/11, 13.09.2011	Request for information about development of Mines Αίτηση για τα διαθέσιμα στοιχεία αναφορικά με την εξέλιξη των ορυχείων της ΔΕΗ Α.Ε. που τυχόν επηρεάζονται από την προκαταρκτική και τις εναλλακτικές οδεύσεις, καθώς και στην ευρύτερη περιοχή	P.R. No / Αρ.Πρ.Παρ. 2342, 20.09.2011	3723/ 13.10.2011	No data provided	No involvement with Authority's projects	Authority hasn't got Mines Development areas along p/l route. They will shortly send their official answer


ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΙΩΓΙΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)									<div></div>	
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33	11	Public Power Corporation (P.P.C.) (Δ.Ε.Η.) Department of Hydro-Electrical Projects (Διεύθυνση Υ/Η Παραγωγής)	Minisrty of Environment, Energy and Climate Change Υ.Π.Ε.Κ.Α.	56-58 Agisilaou str., 104 36, Athens (Αγησιλάου 56-58 104 36, Αθήνα)	210-5245048 210-3355174	Mr Maronikolakis Mrs Primpa (as) κος Μαρονικολάκης κα Πρίμπα	A.R. No / Αρ.Πρ.Αίτ. 36860/11, 13.09.2011	Request for information about existing and future Hydro-Electrical Projects across IGB pipeline routing Αίτηση για τα διαθέσιμα στοιχεία σχετικά με τα υφιστάμενα,σε εξέλιξη, ή μελλοντικά έργα κατά μήκος της προκαταρκτικής και των εναλλακτικών οδεύσεων και στην ευρύτερη περιοχή	P.R. No / Αρ.Πρ.Παρ. 5106, 20.09.2011	5286 / 27.09.2011	No data provided	No involvement with Authority's projects	
34	12	Public Power Corporation (P.P.C.) (Δ.Ε.Η.) Department of Renewable Sources ΔΕΗ Ανανεώσιμες Α.Ε.	Minisrty of Environment, Energy and Climate Change Υ.Π.Ε.Κ.Α.	3, Kapodistriou str. Καποδιστρίου 3, Αγ. Παρασκευή 15343	2112118000	Mr. Kapsalis κος Καψάλης	A.R. No / Αρ.Πρ.Αίτ. 36882/11, 13.09.2011	Submission of p/l routing for data / information regarding Small Hydro-Electrical Projects, Solar Systems and wind farm projects Αίτηση για τα διαθέσιμα στοιχεία σχετικά με υφιστάμενα/σε εξέλιξη/μελλοντικά ΥΗ, Αιολικά, Φωτοβολταϊκά έργα κατά μήκος της όδευσης και στην ευρύτερη περιοχή	P.R. No / Αρ.Πρ.Παρ. 3620, 20.09.2011	3703 / 27.09.2011	No data provided	No involvement with Authority's projects	
35	13	Civil Aviation Authority / Technical Services Division (Υπηρεσία Πολιτικής Αεροπορίας / Δ/ση Τεχνικών Υπηρεσιών (Δ7), Τμήμα Α)	Ministry of Infrastructure, Transport and Networks ΥΠΟ.ΜΕ.ΔΙ.	PO Adress 70360 166 10, Glifada Athens (Τ.Θ. 70360 166 10, Γλυφάδα)	2108916073	Mrs Papadaki κα Παπαδάκη	A.R. No / Αρ.Πρ.Αίτ. 36893/11, 13.09.2011	Request for data regarding existing /possible scheduled and future Authority's infrastructures within IGB pipeline routing broader area Αίτηση για τα διαθέσιμα στοιχεία αναφορικά με υφιστάμενες / εν εξελίξει / προγραμματισμένες μελλοντικές δραστηριότητες, υποδομές και έργα	P.R. No / Αρ.Πρ.Παρ. 29796, 21.09.2011	Δ7/Β/32006/410 8/ 10.10.2011	No data provided	The nearest airport is Komotini's airport which is under Hellenic Air Force (ΓΕΑ) jurisdiction (Item No 5.15)	
36	14	Industrial Development Bank (Ε.Τ.Β.Α. ΒΙ.ΠΕ.)	Piraeus Bank Greek State(35%) Όμιλος Πειραιώς Ελληνικο Δημοσιο(35%)	72-74 Salaminos Str. 176 75 Athens (Σαλαμίνος 72-74 176 75 Καλλιθέα)	2109540000	Mrs Komnou κα Κόμνου	A.R. No / Αρ.Πρ.Αίτ. 36891/11, 13.09.2011	Information for industrial zones along P/I routing Αίτηση για τα διαθέσιμα στοιχεία αναφορικά με ΒΙΠΕ κατά μήκος της όδευσης του αγωγού και στην ευρύτερη περιοχή	P.R. No / Αρ.Πρ.Παρ. 27232, 21.09.2011				
							A.R. No / Αρ.Πρ.Αίτ. 37114/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης					


ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΙΩΓΙΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONSTRUCT NUMBER: C-17-2011)									<div></div>	
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37	15	Ministry of National Defense / National Defense General Staff (ΥΠ.ΕΘ.Α. / Γ.Δ.Ο.Σ.Υ. ΓΕΕΘΑ/ΚΛΑΔΟΣ ΠΟΡΩΝ/ΔΥΠΟ)	Ministry of National Defense (ΥΠ.ΕΘ.Α.)	227-231 Mesogion Aven. 15451 Athens (Λεωφόρος Μεσογείων 227-231)	2106598596 2106593226-228 (ΓΕΑ) 2106553445 (ΓΕΣ)	Mr Giakoumakis Mrs Delihatsiou (ΓΕΑ) Mr Georgeles (ΓΕΣ) κος Γιακουμάκης καΔεληχάτσου κος Γεωργελές	A.R. No / Αρ.Πρ.Αίτ. 36892/11, 13.09.2011	Checking of routing through or near military sites, pipelines etc. Πληροφορίες στην περίπτωση που η χάραξη εμπλέκεται με υφιστάμενα ή προγραμματιζόμενα έργα των Επιτελείων (ΓΕΣ, ΓΕΑ)	P.R. No / Αρ.Πρ.Παρ. Γρ/τείαΥΠΕΘΑ/Γ ΔΟΣΥ/ΔΙΣΤΥ 61202/ 26.09.2011	Pending Η απάντηση εκκρεμεί			Mr Giakoumakis forwarded the application to Army General Staff (ΓΕΣ) and to Hellenic Air Force (ΓΕΑ)
		Army General Staff Xanthi Dpt (ΓΕΣ Δ' ΣΩΜΑ / ΔΙΣΧΕΔ)	Ministry of National Defense (ΥΠ.ΕΘ.Α.)	Xanthi (Ξάνθη), 67100	6974602342	Mr. Hasiotis (κος Χασιώτης)	A.R. No / Αρ.Πρ.Αίτ. 36962/1, 06.10.2011	Submission of an extra CD and a hard copy with p/l routing, upon Authority's request. Υποβολή χαρτών σε έντυπη μορφή κατόπιν αιτήματος της Υπηρεσίας	P.R. No / Αρ.Πρ.Παρ. 48800/ΔΣΣ/ΔΙΣΧ ΕΔ/ 07.10.2011			The Authority has no objection, subject to the following conditions: Contractor to Provide immediate notification of Military Service upon the start of construction works Military facilities of Nimfaia not to be affected Any modification to the defined construction works zone to be subjected to the approval of the Military Service	
							A.R. No / Αρ.Πρ.Αίτ. 37115/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης		Φ.900/264/4849 0 Σ.485 / 09.12.2011	No data provided		
38	16	HMGS Authority (ΓΥΣ)	Ministry of National Defense (ΥΠ.ΕΘ.Α.)	4 Evelpidon str., 11362 Athens (Ευελπίδων 4, Αθήνα)	2108206714, 2108206662	Mr. Manos κος Μάνος	A.R. No 36847/11, 12.09.2011	Request for the Provision of Topographical Maps Αίτηση για παροχή χαρτών 1/50.000, 1/5.000	P.R. No Αρ.Πρ.Παρ. 19084, 12.09.2011	16.09.2011 no ref.number 03.10.2011 no ref. number (χωρίς Αρ. Πρωτ.)	16.09.2011-Maps 1:50.000  03.10.2011-Maps 1:5.000		
39	17	GENERAL SECRETARIAT OF PUBLIC WORKS General Division of Transportation Works (G.D.T.W.) (ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΔΗΜΟΣΙΩΝ ΕΡΓΩΝ (Γ.Γ.Δ.Ε.) Γενική Δ/ση Συγκοινωνιακών Έργων	Ministry of Infrastructure, Transport and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	182 H. Trikoupi str., 101 78 Athens (Χ. Τρικούπη 182, 101 78 Αθήνα)	210 6456385	Mr. Makris κος Μακρής	A.R. No / Αρ.Πρ.Αίτ. 36887/11, 13.09.2011	For information Για πληροφόρηση και προώθηση στις εποπτευόμενες υπηρεσίες	P.R. No Αρ.Πρ.Παρ. 1078, 20.09.2011	Δ1/2912/ 29.09.2011 & ΔΜΕΟ/α/3787/ 21.10.2011			Mr Makris will be informed by the supervised authorities (Δ1 and ΔΜΕΟ)

ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΙΩΓΙΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONSTRUCT NUMBER: C-17-2011)										
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40	18	GENERAL SECRETARIAT OF PUBLIC WORKS General Division of Transportation Works Division of National Roads (Δ1) (ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΔΗΜΟΣΙΩΝ ΕΡΓΩΝ (Γ.Γ.Δ.Ε.) Γενική Δ/ση Συγκοινωνιακών Έργων Διεύθυνση Οδικών Έργων (Δ1)	Ministry of Infrastructure, Transport and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	7 Moustoxidi str., 114 73 Athens (Μουστοξύδη 7, 114 73 Αθήνα)	2106470665	Mrs. Dermitzaki(ass) κα Δερμιτζάκη	A.R. No / Αρ.Πρ.Αίτ. 36887/11, 13.09.2011	Request for the following: a) main roads routing drawings b) Information for expropriation limits c) Information for scheduled and future projects d) Information for prerequisites regarding IGB p/l installation under roads (where required) α) χάραξη οδικών αξόνων β) όρια απαλλοτρίωσης γ) προγ/ζόμενα/μελ. έργα δ) προϋποθέσεις διέλευσης κάτω από τμήματα των οδών	P.R. No Αρ.Πρ.Παρ. 2912, 20.09.2011	Δ1/2912/ 29.09.2011	Authority forwarded the letter to EGNATIA ODOS S.A.		
41	19	GENERAL SECRETARIAT OF PUBLIC WORKS General Division of Transportation Works National Roads Engineering Division (ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΔΗΜΟΣΙΩΝ ΕΡΓΩΝ (Γ.Γ.Δ.Ε.) Γενική Δ/ση Συγκοινωνιακών Έργων Διεύθυνση Μελετών Έργων Οδοποιίας (ΔΜΕΟ)	Ministry of Infrastructure, Transport and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	19 Alexandras Ave., 114 73 Athens (Α. Αλεξάνδρας 19, 101 78 Αθήνα)	2106463256	Mrs Kourou κα Κούρου	A.R. No / Αρ.Πρ.Αίτ. 36887/11, 13.09.2011	Request for the following: a) main roads routing drawings b) Information for expropriation limits c) Information for scheduled and future projects d) Information for prerequisites regarding IGB p/l installation under roads (where required) α) χάραξη οδικών αξόνων β) όρια απαλλοτρίωσης γ) προγ/ζόμενα/μελ. έργα δ) προϋποθέσεις διέλευσης κάτω από τμήματα των οδών	P.R. No Αρ.Πρ.Παρ. 3787, 20.09.2011				On 27.09.2011, Mrs Kourou requested the submission of a hard copy with p/l routing
					2106463256		A.R. No / Αρ.Πρ.Αίτ. 36928/11, 28.09.2011	Submission of an extra hard copy with p/l routing, upon Authority's request. Υποβολή χαρτών σε έντυπη μορφή κατόπιν αιτήματος της Υπηρεσίας		ΔΜΕΟ/α/3787/ 21.10.2011	No data provided	No involvement with Authority's studies Authority suggests contact with EGNATIA ODOS S.A.	
42	20	GENERAL SECRETARIAT OF PUBLIC WORKS General Division of Expropriations (Δ12) (Διεύθυνση Απαλλοτριώσεων & Τοπογραφήσεων (Δ12))	Ministry of Infrastructure, Transport and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	15, P. Tsaldari str. 176 76 Kallithea (Π. Τσαλδάρη 15, 176 76 Καλλιθέα)	2109232414 2109241446	Mr. Retzepis Mrs Kariotou κος Ρετζέπης κα Καριώτου	A.R. No / Αρ.Πρ.Αίτ. 36863/11, 13.09.2011	Request for the expropriation limits of the road Komotini - Nimfaia - Greek-Bulgarian borders Αίτηση για την παροχή των ορίων απαλλοτριώσεως του έργου «Οδός Κομοτηνή – Νυμφαία – Ελληνοβουλγαρικά Σύνορα»	P.R. No Αρ.Πρ.Παρ. 7136, 20.09.2011	Mrs Kariotou contacted to EGNATIA ODOS S.A., as they have the electronic file for the road exprop/r/tions. No further answer is expected.			Mrs Kariotou contacted to EGNATIA ODOS S.A., as they have the electronic file for the road expropriations.
							A.R. No / Αρ.Πρ.Αίτ. 37118/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίσπευσης απάντησης					



ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΙΩΓΙΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)									<div></div>	
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List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/ση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
43	21	GENERAL SECRETARIAT OF PUBLIC WORKS General Division of Hydraulic Projects Directorate of Water Supply and Sewerage (notification was submitted to the Division of Hydraulic Projects) (ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΔΗΜΟΣΙΩΝ ΕΡΓΩΝ (Γ.Γ.Δ.Ε.) Γενική Διεύθυνση Υδραυλικων Εργων Διεύθυνση Έργων Ύδρευσης-ΑποχέτευσηςΔ6 (με κοινοποίηση στη Γενική Διεύθυνση Χαριλάου Τρικούπη 182 10178, Αθήνα)	Ministry of Infrastructure, Transport and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	9, Fanarioton str., (Φαναριωτών 9, Αθήνα) 114 71	210 6424464 210 6412825	Mr. Daravelis κος Δαραβελης	A.R. No/ Αρ.Πρ.Αίτ. 36878/11, 13.09.2011	Data collection for Water Supply and Sewerage infrastructure in the pipeline area Συλλογή στοιχείων αναφορικά με υφιστάμενες εγκαταστάσεις / δίκτυα καθώς και έργα αρμοδιότητας της Υπηρεσίας που τυχόν βρίσκονται σε εξέλιξη, ή προγραμματίζονται στην ευρύτερη περιοχή ενδιαφέροντος	P.R. No Αρ.Πρ.Παρ. 938, 20.09.2011 /P.R. No 2216, 20.09.2011	Δ6 2216/ 26.09.2011	No data provided	No involvement with Authority's projects	
44	22	GENERAL SECRETARIAT OF PUBLIC WORKS General Division of Hydraulic Projects Agricultural Eng. Directorate/ (notification was submitted to the Division of Hydraulic Projects) (ΓΕΝΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΔΗΜΟΣΙΩΝ ΕΡΓΩΝ (Γ.Γ.Δ.Ε.) Γενική Διεύθυνση Υδραυλικων Εργων Διεύθυνση Εγγείων Βελτιώσεων (Δ7) (με κοινοποίηση στη Γενική Δνση Χαριλάου Τρικούπη 182, 10178)	Ministry of Infrastructure, Transport and Networks Υπουργείο ΥΠΟ.ΜΕ.ΔΙ.	9, Fanarioton str., (Φαναριωτών 9, Αθήνα) 114 71	210 6424464 2106445018	Mr. Manthos κος Μάνθος	A.R. No/ Αρ.Πρ.Αίτ. 36865/11, 13.09.2011	Data collection for Argicultural Engineering infrastructure in the pipeline area Συλλογή στοιχείων αναφορικά με τα υφιστάμενα και μελλοντικά εγχειοβελτιωτικά έργα	P.R. No Αρ.Πρ.Παρ. 1352, 20.09.2011	Δ7β/1352/Φ.Π.Ε P.AN.MAK.ΘΡ AK. / 29.09.2011	No data provided	Provision of such data is under relevant regional services jurisdiction (Item no 1.1.4, 5 and 1.2.1, 2)	
45	23	Inspection of Mines of North Greece Επιθεώρηση Μεταλλείων Βορείου Ελλάδας Τμήμα Τοπογραφικό & Κτηματολογικό	Ministry of Environment, Energy & Climatic Change - ΥΠΕΚΑ	6, Kountoyriotou and Fokaïas str. Κουντουριώτου 6 και Φωκαίας 54101, Thessaloniki	2310225115	Mr. Ioannou κος Ιωάννου	A.R. No / Αρ.Πρ.Αίτ. 36895/11, 13.09.2011	Data / information (if any) regarding Mines Συλλογή στοιχείων αναφορικά με τις θέσεις μεταλλείων και λατομείων στην ευρύτερη περιοχή ενδιαφέροντος	P.R. No Αρ.Πρ.Παρ. 2385, 20.09.2011	2385/ 20.09.2011	No data provided	Aythority asked for the submission of digital maps in HATT system (instead of ΕΓΣΑ)	

ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΙΩΓΙΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONSTRUCT NUMBER: C-17-2011)										
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46	24	Agricultural Engineering Directorate - Ministry of Transport Infrastructure and Networks Διεύθυνση Σχεδιασμού Εγγειοβελτιωτικών Έργων Υπ. Γεωργ. Αναπτ. - Δ/ση Τεχνικών Μελετών Υπ. Γεωργ. Αναπτ.	Ministry of Agriculture & Food Production - Υπουργείο Αγροτ. Ανάπτυξης και Τροφίμων	Serafi 60 & Liosion 210 (Σεράφι 60 & Λιοσίων 210) Αθήνα – 104 45	210-8399786 210-8399780 210-8399784	Fotiadou (Mrs) Director - Diamantakis (Mr) Ass. Dir - Mr Stavrinou (Assigned) κα Φωτιάδου (Δ/ντρια) κος Σταυρινός	A.R. No/ Αρ.Πρ.Αίτ. 36853/11, 13.09.2011	Data collection for Argicultural Engineering infrastructure in the pipeline area Συλλογή στοιχείων αναφορικά με τα υφιστάμενα και μελλοντικά εγγειοβελτιωτικά έργα (οριοθέτηση τους, σχετικούς περιορισμούς κλπ.), στην ευρύτερη περιοχή ενδιαφέροντος	P.R. No Αρ.Πρ.Παρ. 11025, 20.09.2011	11586/ 24.10.2011	Maps with existing and future Authority's projects submitted by e-mail in the wider area of interest		Mr. Stavrinou has got the complete file of the projects at Rodopi (including classified documents). Authority can further provide the above documents (upon request) in case they are required.
47	25	Dpt. Of Natural Environment Management - Ministry of Environment, Energy & Climatic Change Τμήμα Διαχείρισης Φυσικού Περιβάλλοντος ΥΠΕΚΑ	Ministry of Environment, Energy & Climatic Change - ΥΠΕΚΑ	Mesoghion & Trikalon (Μεσογείων και Τρικάλων) - Athens	2106981043	Christopoulou (Mrs) κα Χριστοπούλου	A.R. No/ Αρ.Πρ.Αίτ. 36870/11, 13.09.2011	Data collection for Protected Areas of Natural Interest (NATURA etc.) Συλλογή στοιχείων αναφορικά με υφιστάμενες προστατευόμενες περιοχές «Natura 2000» (οριοθέτηση περιοχών–σχετικά ΦΕΚ, σχετικούς περιορισμούς κλπ.)	P.R. No Αρ.Πρ.Παρ. 161334/2336, 20.09.2011	No answer is expected, as PEIAS was submitted to all Competent Environmental Authorities			
							A.R. No / Αρ.Πρ.Αίτ. 37116/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίταξης απάντησης					
48	26	General Development and Protection of Forests & Natural Environment Directorate of Aesthetic Forests Γενική Διεύθυνση Αναπτυξης & Προστασίας Δασών & Φυσικού Περιβάλλοντος Διεύθυνση Αισθητικών Δασών, Δρυμών & Θήρας	Ministry of Environment, Energy & Climatic Change - ΥΠΕΚΑ	Halkokondili (Χαλκ/νδύλη) 31 10164 - Athens			A.R. No / Αρ.Πρ.Αίτ. 36894/11, 13.09.2011	Data collection for Protected Forest Areas Συλλογή στοιχείων αναφορικά με τις υφιστάμενες προστατευόμενες δασικές περιοχές (οριοθέτηση περιοχών – σχετικά ΦΕΚ, περιορισμούς κλπ.), στην ευρύτερη περιοχή ενδιαφέροντος	P.R. No Αρ.Πρ.Παρ. 222013, 23.09.2011	Relevant answer on PEIAS was submitted to EYPE			
							A.R. No / Αρ.Πρ.Αίτ. 37117/11, 02.12.2011	Notice for reply delay and request for urgent actions Επισήμανση καθυστέρησης και ανάγκη επίταξης απάντησης					
							Notification Κοινοποίηση επιστολής με Αρ.Πρ.Αίτ. 37615/12, 24.07.2012	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 174041 / 26.07.12				

ICGB AD			GAS INTERCONNECTOR GREECE – BULGARIA (IGB PROJECT) FRONT END ENGINEERING DESIGN AND ENVIRONMENTAL IMPACT ASSESSMENT ΑΓΩΓΟΣ ΦΥΣΙΚΟΥ ΑΕΡΙΟΥ ΔΙΑΣΥΝΔΕΣΗΣ ΕΛΛΑΔΑΣ – ΒΟΥΛΓΑΡΙΑΣ (IGB PROJECT) ΟΡΙΣΤΙΚΗ ΜΕΛΕΤΗ (FEED) ΚΑΙ ΜΕΛΕΤΗ ΠΕΡΙΒΑΛΛΟΝΤΙΚΩΝ ΕΠΙΠΤΩΣΕΩΝ (CONTRUCT NUMBER: C-17-2011)										
			Contacts with Authorities - List of Correspondence with Authorities Επαφές με Αρχές - Λίστα αλληλογραφίας με Αρχές										
List No Γεν. Α/Α	Item No Επιμ. Α/Α	Authority / Organization Υπηρεσία/ Οργανισμός	Supervisor Authority Επιβλέπουσα Αρχή	Address Δ/νση	Telephone Number Τηλέφωνο	Responsible Employee Υπεύθυνος	Application Ref. No Αρ. Πρωτ. Αίτησης	Subject of Application Αντικείμενο Αίτησης	Authorities Protocol Receipt No Αρ. Πρωτ. Παραλαβής	Authorities answer Ref. No / Date Αρ. Πρωτ. Απάντησης	Data Provided by Authority Παρεχόμενα Στοιχεία	Comments Σχόλια	Visits / Contacts Επισκέψεις/ Επαφές
49	27	Byzantine Antiquities Inspection Directorate - Ministry of Culture & Tourism Διεύθυνση Βυζαντινών και Μεταβυζαντινών Αρχαιοτήτων ΥΠΠΟΤ	Ministry of Culture & Tourism Υπουργείο Πολιτισμού & Τουρισμού	Bouboulinas (Μπουλίνας) 20-22 106 82 Athens	2131322100 - 2131322178	Gerousi (Mrs.) Dir. Efthymiou (Mrs) κα Γερούση κα Ευθυμίου	A.R. No / Αρ.Πρ.Αίτ. 36864/11, 13.09.2011	Collection of data for Antiquities (Byzantine) Συλλογή στοιχείων αναφορικά με τους υφιστάμενους αρχαιολογικούς χώρους	P.R. No Αρ.Πρ.Παρ. 88742, 20.09.2011	ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/108145/4643 / 21.11.2011 - 15η ΕΒΑ 2529/ 29.09.2011	Authority's data are included in the following answers: Η υπηρεσία καλύπτεται από τις επιστολές: ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/108145/4643 / 21.11.2011 - 15η ΕΒΑ 2529/ 29.09.2011		
							Notification Κοινοποίηση επιστολής με Αρ.Πρ.Αίτ. 37614/12, 24.07.2012	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 73555 / 26.07.12				
50	28	Classical Antiquities Inspection Directorate - Ministry of Culture & Tourism Διεύθυνση Προϊστορικών και Κλασικών Αρχαιοτήτων ΥΠΠΟΤ (Coordination and Monitoring of Archaeological Work Office for Major Projects)	Ministry of Culture & Tourism Υπουργείο Πολιτισμού & Τουρισμού	Bouboulinas (Μπουλίνας) 20-22 106 82 Athens	2131322100 - 2131322284 2108201820	Valakou (Mrs.) Director. Skiadopoulou (Mrs) Mrs Salihou κα Σαλίχου (Γραφείο Συντονισμού Παρακολούθησης Αρχαιολογικών Εργασιών στο πλαίσιο Μεγάλων Έργων)	A.R. No / Αρ.Πρ.Αίτ. 36869/11, 13.09.2011	Collection of data for Antiquities (Classical) Συλλογή στοιχείων αναφορικά με τους υφιστάμενους αρχαιολογικούς χώρους	P.R. No Αρ.Πρ.Παρ. 88749, 20.09.2011	1.ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/92826/4037 / 29.09.2011 2.ΥΠΠΟΤ/ΓΔΑΠΚ/ΑΡΧ/Α1/Φ40/108145/4643 / 21.11.2011	2.Consolidated Answer covering all competent Archaeological services+map with Archaeological areas Συνολική απάντηση (Εκθεση Αναλυτικής Αρχαιολογικής Τεκμηρίωσης) που συμπεριλαμβάνει στοιχεία και απαιτήσεις όλων των Αρμόδιων Αρχ/κών Υπηρεσιών+χάρτης με θέσεις αρχ. χώρων	Letter No 1:Authority notifies the letter to Local Archaeological Services (Item No 3.1, 2, 3) Competent Archaeological Services have to submit to Authority's "Coordination and Monitoring of Archaeological Work Office for Major Projects", their Analytical Reports of Archaeological Documentation.	
		Classical Antiquities Inspection Directorate - Ministry of Culture & Tourism Διεύθυνση Προϊστορικών και Κλασικών Αρχαιοτήτων ΥΠΠΟΤ					Notification Κοινοποίηση επιστολής με Αρ.Πρ.Αίτ. 37614/12-24.07.12 και 37616/12-24.07.12	Submission of revised route acc. to PEIA (Α.Π.οικ.200504 / 12.07.12) and the conditions attached Υποβολή αναθεωρημένης χάραξης σύμφωνα με ΠΠΕΑ (Α.Π.οικ.200504/12.07.12) και τους όρους που τη συνοδεύουν.	P.R. No / Αρ.Πρ.Παρ. 73555 / 26.07.12 και 73565 / 26.07.12				
	5	NON GOVERNMENTAL ORGANIZATIONS / ΜΗ ΚΥΒΕΡΝΗΤΙΚΕΣ ΟΡΓΑΝΩΣΕΙΣ											
51	1	Greek Ornithological Society (Ελληνική Ορνιθολογική Εταιρεία)		V. Irakliou 24, Athens Βασ. Ηρακλείου 24, 106 82 Αθήνα	210 8228704 & 210 8227937	Mrs. Portolou κα Πορτόλου	A.R. No / Αρ.Πρ.Αίτ. 36994/11, 20.10.2011 (SUBMITTED BY E-MAIL)	Request for available data and information on the important areas for birds (IBAs) Διαθέσιμα στοιχεία και πληροφορίες αναφορικά με τις σημαντικές περιοχές για τα πουλιά (IBAs) στην περιοχή του Έργου		14/11/2011 E-mail /[dportolou@ornithologiki.gr]		Recommended & Alternative pipeline route passes through the western limits of the important area for birds' Filiouri Valley and Eastern Rhodope "code GR008 A Request for relevant Data is required	



## **APPENDIX F:        PHOTOGRAPHS**

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**PART 1 – PRESENTATION OF PROPOSED ROUTE (REC)**

**PART 2 – PRESENTATION OF STATIONS SITES**

**PART 3 – CONSTRUCTION ACTIVITIES**

**PART 4 – REINSTATEMENT & PROTECTION ACTIVITIES**



**ΦΩΤΟΓΡΑΦΙΚΗ ΠΑΡΟΥΣΙΑΣΗ ΤΗΣ ΠΡΟΤΕΙΝΟΜΕΝΗΣ ΧΑΡΑΞΗΣ ΤΟΥ ΑΓΩΓΟΥ.  
PHOTOGRAPHIC PRESENTATION OF RECOMMENDED PIPELINE ROUTE**



**ΦΩΤ.1** Περιοχή αρχής του αγωγού. Διακρίνεται ο «ΘΗΣ ΚΟΜΟΤΙΝΗ» της ΔΕΗ  
**PHOTO.1** Start of the pipeline. The PPC power plant is visible.



**ΦΩΤ.2** Επίπεδες γεωργικές εκτάσεις ανατολικά της Κομοτηνής.  
**PHOTO.2** Plain agricultural land east of Komotini



**ΦΩΤ.3** Ασφαλτόδρομος Φύλακας – Θρυλόριο. Διασταύρωση στη θέση 1.5Km  
**PHOTO. 3** Road from Fylakas to Thrylorio. Crossing at 1.5Km



**ΦΩΤ.4** Παλαιά Εθνική Οδός Αλεξανδρούπολη – Κομοτηνή (5.2χλμ.) – Διάκρίνεται το  
 Ψυχιατρείο Κομοτηνής  
**PHOTO.4** Old National Road Alexandroupolis-Komotini (5.2 Km) – The mental  
 Hospital of Komotini is visible.



**ΦΩΤ.5** Χείμαρος – Διασταύρωση στό 9.6Km  
**PHOTO 5.** Stream – Crossing at 9.6 Km.



**ΦΩΤ.6.** Ασφαλτόδρομος Ήφαιστος – Στυλάριο. Διασταύρωση στο 10.75Km.  
**PHOTO.6** Road from Ifestos to Stylario. Crossing at 10.75Km.





**ΦΩΤ.7** Περιοχή Δυτικά του οικισμού Τυχηρό.  
**PHOTO 7.** Area west of Tihiro settlement.



**ΦΩΤ.8.** Ασφαλτόδρομος Καρυδιά – Πάνδροσος Διασταύρωση στο 14.6Km.  
**PHOTO 8.** Road from Karydia to Pandrosos. Crossing at 14.6Km.



**ΦΩΤ.9** Περιοχή βόρεια του οικισμού Πάνδροσος  
**PHOTO.9.** Area North of Pandrosos Settlement



**ΦΩΤ.10** Περιοχή δυτικά του οικισμού Νυμφαία προς τα Ελληνοβουλγαρικά Σύνορα.  
**PHOTO. 10.** Area west of Nymfea settlement near the Greek-Bulgarian border.





**ΦΩΤ.11** Περιοχή Δασικής έκτασης για την οποία η Δ/ση Δασών Ροδόπης ζήτησε διόρθωση της χάραξης (ΒΔ Θέσης K32 αρχικής χάραξης REC).

**PHOTO. 11.** Forested Area for which the Forest Inspection Authority of Rhodopi asked for a rerouting (NW of Position K32 of initial routing REC).



**ΦΩΤ.12** Περιοχή τροποποίησης της χάραξης λόγω του αιτήματος της Δ/σης Δασών Ροδόπης. Διασταύρωση με δασικό δρόμο (Θέση K31 Νέας Χάραξης REC).

**PHOTO. 12.** Rerouting due to the Forest Inspection Authority of Rhodopi demand. Crossing of a forest road (Position K31 of new routing REC).



**ΦΩΤ.13** Περιοχή τροποποίησης της χάραξης λόγω του αιτήματος της Δ/σης Δασών Ροδόπης. Αγροτο-δασική περιοχή (Θέση K32A Νέας Χάραξης REC).

**PHOTO. 13** Rerouting due to the Forest Inspection Authority of Rhodopi demand. Agricultural & Forested land. (Position K32A of new routing REC).



**ΦΩΤΟΓΡΑΦΙΚΗ ΠΑΡΟΥΣΙΑΣΗ ΤΩΝ ΘΕΣΕΩΝ ΤΩΝ ΣΤΑΘΜΩΝ.  
PHOTOGRAPHIC PRESENTATION OF STATIONS POSITIONS**



**ΦΩΤ.14** Προτεινόμενη θέση σταθμού «ΚΟΜΟΤΗΝΗ»  
**PHOTO.14** Recommended position for station “KOMOTINI”



**ΦΩΤ.15** 1<sup>η</sup> Εναλλακτική θέση σταθμού «ΚΟΜΟΤΗΝΗ»  
**PHOTO.15** 1<sup>st</sup> Alternative position for station “KOMOTINI”



**ΦΩΤ.16** 2<sup>η</sup> Εναλλακτική θέση σταθμού «ΚΟΜΟΤΗΝΗ»  
**PHOTO.16** 2<sup>nd</sup> Alternative position for station “KOMOTINI”



**ΦΩΤ.17** Προτεινόμενη θέση βαλβιδοστασίου «ΝΥΜΦΑΙΑ»  
**PHOTO.17** Recommended position for Line Valve station “NIMFEA”



**ΦΩΤ.18** 1<sup>η</sup> Εναλλακτική θέση βαλβιδοστασίου «ΝΥΜΦΑΙΑ»  
**PHOTO.18** 1<sup>st</sup> Alternative position for for Line Valve station “NIMFEA”





**ΦΩΤ.19.** 2<sup>η</sup> Εναλλακτική θέση βαλβιδοστασίου «ΝΥΜΦΑΙΑ»

**PHOTO.19** 2<sup>nd</sup> Alternative position for for Line Valve station “NIMFEA”

## CONSTRUCTION WORKS - ΕΡΓΑΣΙΕΣ ΚΑΤΑΣΚΕΥΗΣ



**ΦΩΤ.20** Προετοιμασία Ζώνης Εργασίας.  
**PHOTO.20** ROW Preparation



**ΦΩΤ.21** Προετοιμασία Ζώνης Εργασίας.  
**PHOTO.21** ROW Preparation





**ΦΩΤ.22** Ο σωληναγωγός τοποθετημένος στο όρυγμα.  
**PHOTO.22** Pipeline in Trench



**ΦΩΤ.23** Κατέβασμα σωληναγωγού στο όρυγμα.  
**PHOTO.23** Pipeline Lowering in Trench





**ΦΩΤ.24** Ζώνη Εργασίας σε ορεινή δασική περιοχή.  
**PHOTO.24** ROW in mountainous forested area.



**ΦΩΤ.25** Μεταφορά σωλήνων σε μεγάλη κλίση.  
**PHOTO.25** Pipe transportation in large slope.





**ΦΩΤ.26** Εργασίες κατασκευής σε μεγάλη κλίση.  
**PHOTO.26** Construction works in large slope.





**ΦΩΤ.27** Εργασίες κατασκευής σε δασική έκταση.  
**PHOTO.27** Construction works in forested area.



**ΦΩΤ.28** Εργασίες κατασκευής σε δασική έκταση.  
**PHOTO.28** Construction works in forested area.





**ΦΩΤ.29 & 30** Εργασίες κατασκευής σε πολύ μεγάλη κλίση.  
**PHOTO.29 & 30** Construction works in very steep slope.





**ΦΩΤ.31** Τράβηγμα του αγωγού με βαγονέτο.  
**PHOTO.31** Pipeline dragging on cart.



**ΦΩΤ.32 & 33** Κάμψη και συγκόλληση αγωγού στο πεδίο.  
**PHOTO.32 & 33** Pipeline field bending & welding.



**REINSTATEMENT AND EROSION PREVENTION WORKS –  
ΕΡΓΑΣΙΕΣ ΑΠΟΚΑΤΑΣΤΑΣΗΣ ΚΑΙ ΠΡΟΣΤΑΣΙΑΣ ΑΠΟ ΤΗ ΔΙΑΒΡΩΣΗ**



**ΦΩΤ.34 – PHOT. 34**

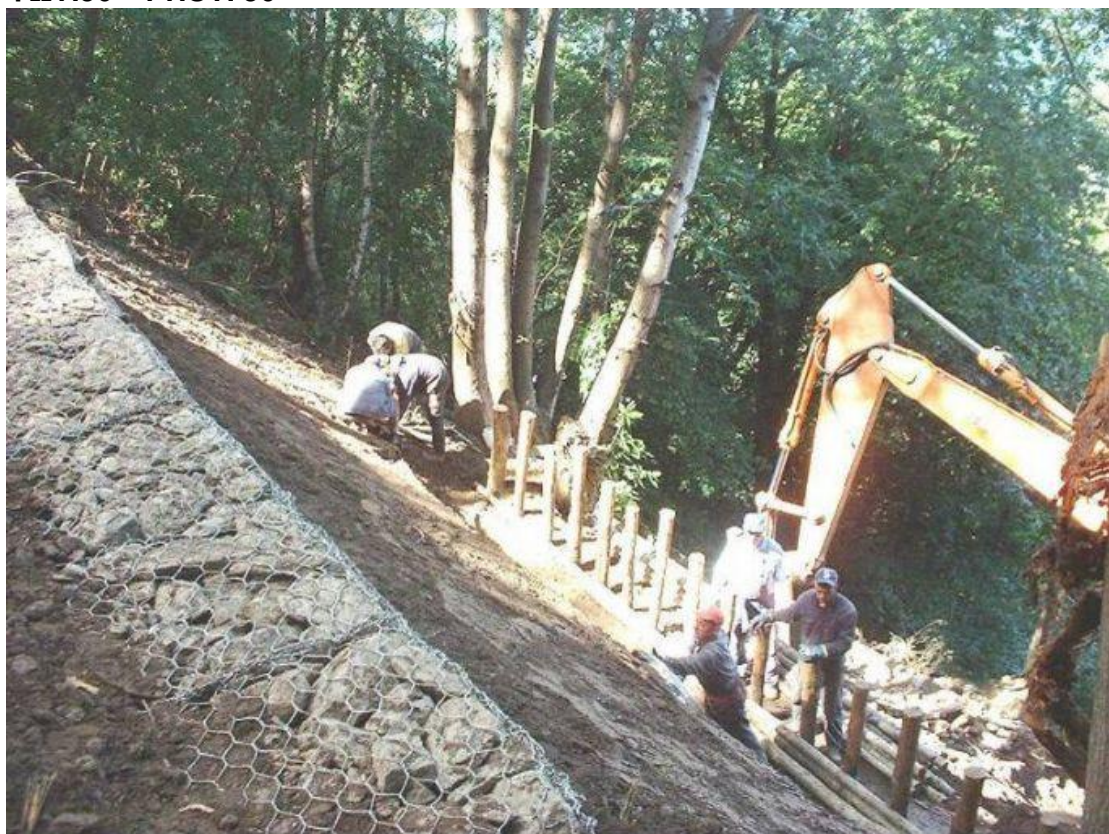


**ΦΩΤ.35 – PHOT. 35**





ΦΩΤ.36 – PHOT. 36

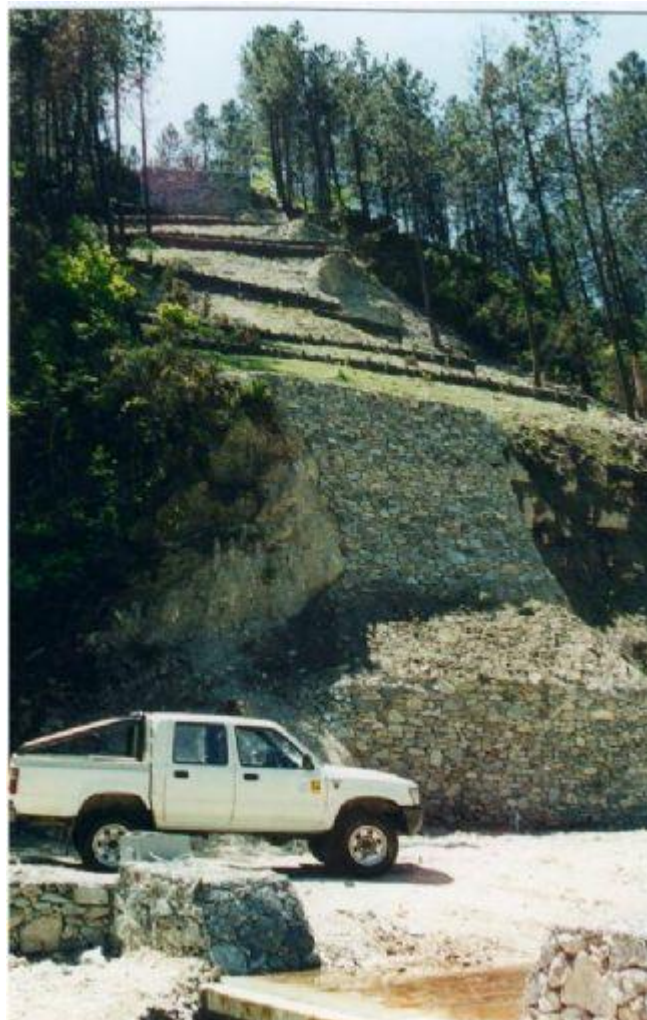


ΦΩΤ.37 – PHOT. 37





ΦΩΤ.38 – PHOT. 38



ΦΩΤ.39 – PHOT. 39

## APPENDIX G: INFORMATION FOR THE NATURA 2000 AREA BG0001032

### G1. General Information

Natura 2000 code in database	BG0001032
Designation Name	Special Area of Conservation (SAC, EC Habitats Directive)
Surface area (ha)	217352.95
Country	Bulgaria
Regional administrative codes	NUTS1999 code BG053, Haskovo, cover:51.00% NUTS1999 code BG056, Kardzhali, cover:49.00%
Biogeographic region	Continental
Minimum Altitude(m)	43
Mean Altitude(m)	677
Maximum Altitude(m)	1415
Longitude	[E 25°47'44"]
Latitude	[N 41°30'18"]

### G2. Ecological information: Fauna and Flora mentioned in site.

#### Species

Species scientific name	Resident	Breeding	Winter.	Staging	Conserv.	Popul.	Isolation	Global status
<b>Invertebrates</b>								
<u>Austropotamobius torrentium</u>	C				A	C	B	A
<u>Callimorpha quadripunctaria</u>	R				A	B	B	A
<u>Cerambyx cerdo</u>	R				A	B	C	A
<u>Eriogaster catax</u>	V				A	A	A	A
<u>Euphydryas aurinia</u>	C				A	B	A	A
<u>Lucanus cervus</u>	R				A	C	C	A
<u>Lycaena dispar</u>	V				A	C	B	A
<u>Morimus funereus</u>	R				A	B	C	A
<u>Rosalia alpina</u>	R				A	B	C	A
<u>Unio crassus</u>	R				A	B	C	A
<u>Probaticus subrugosus</u>	R				A	C	B	A
<u>Dioszeghyana schmidtii</u>	C				A	A	A	A
<u>Coenagrion ornatum</u>	R				A	B	A	A
<u>Paracaloptenus caloptenoides</u>	R				A	C	C	A
<b>Fishes</b>								
<u>Aspius aspius</u>	V				B	C	A	A
<u>Barbus plebejus</u>	C				A	B	C	A
<u>Rhodeus sericeus amarus</u>	R				B	B	C	B
<u>Sabanejewia aurata</u>	V				A	C	C	A
<b>Amphibians</b>								
<u>Bombina variegata</u>	C				A	B	C	A
<u>Triturus karelinii</u>	C				A	B	C	A
<b>Reptiles</b>								
<u>Elaphe quatuorlineata</u>	R				A	B	B	A


Species scientific name ▲	Resi- dent	Bree- ding	Winter.	Sta- ging	Conserv.	Popul.	Isolation	Global status
<u>Emys orbicularis</u>	C				A	B	C	A
<u>Mauremys caspica</u>	C				A	A	B	A
<u>Testudo graeca</u>	C				A	B	C	A
<u>Testudo hermanni</u>	C				A	B	C	A
<b>Mammals</b>								
<u>Barbastella barbastellus</u>	V				B	B	C	B
<u>Canis lupus</u>	51-52				A	B	C	A
<u>Lutra lutra</u>	81i				A	B	C	A
<u>Miniopterus schreibersii</u>		R	R	P	B	C	C	C
<u>Myotis bechsteinii</u>	V	P	P	P	B	B	C	B
<u>Myotis blythii</u>	C				A	B	C	A
<u>Myotis capaccinii</u>	R	R	P	P	B	B	C	B
<u>Myotis emarginatus</u>	V	R	P	1000- 10000(I )	B	B	C	B
<u>Myotis myotis</u>		C	R	P	B	B	C	B
<u>Rhinolophus blasii</u>		R	V	P	B	B	C	B
<u>Rhinolophus euryale</u>		C	V	P	B	B	C	B
<u>Rhinolophus ferrumequinum</u>		C	C	P	B	B	C	B
<u>Rhinolophus hipposideros</u>		C	C	P	B	B	C	B
<u>Rhinolophus mehelyi</u>		V	P	P	B	B	C	B
<u>Spermophilus citellus</u>	R				B	C	C	A
<u>Ursus arctos</u>	1-2i				B	C	B	B
<u>Myomimus roachi</u>	V				B	B	B	B
<u>Vormela peregusna</u>	R				A	B	C	A
<b>Flowering Plants</b>								
<u>Himantoglossum caprinum</u>	R				B	C	C	B


### Other species mentioned in site

Species group ▲	Species name	Population size estimations	Motivation for species mention
Invertebrates	<u>Apatura metis</u>	C	C
Invertebrates	<u>Maculinea arion</u>	C	C
Invertebrates	<u>Parnassius mnemosyne</u>	C	C
Invertebrates	<u>Zerynthia polyxena</u>	R	C
Fishes	<u>Anguilla anguilla</u>	P	A
Reptiles	<u>Ablepharus kitaibelii</u>	R	C
Amphibians	<u>Bufo viridis</u>	C	C
Reptiles	<u>Coluber caspius</u>	C	C
Reptiles	<u>Coluber najadum</u>	R	C
Reptiles	<u>Coronella austriaca</u>	R	C
Reptiles	<u>Elaphe longissima</u>	R	C
Amphibians	<u>Hyla arborea</u>	C	C
Reptiles	<u>Lacerta trilineata</u>	R	C
Reptiles	<u>Lacerta viridis</u>	C	C
Reptiles	<u>Natrix tessellata</u>	C	C
Amphibians	<u>Pelobates syriacus</u>	V	C
Reptiles	<u>Podarcis erhardii</u>	C	C
Reptiles	<u>Podarcis muralis</u>	C	C
Reptiles	<u>Podarcis taurica</u>	C	C


Species group ▲	Species name	Population size estimations	Motivation for species mention
Amphibians	<u>Rana dalmatina</u>	C	C
Reptiles	<u>Vipera ammodytes</u>	C	C
Fishes	<u>Salmo trutta</u>	V	B
Fishes	<u>Alburnus alburnus</u>	C	D
Fishes	<u>Gobio gobio</u>	C	D
Fishes	<u>Leuciscus cephalus</u>	C	D
Fishes	<u>Phoxinus phoxinus</u>	R	D
Fishes	<u>Rutilus rutilus</u>	R	D
Fishes	<u>Silurus glanis</u>	C	C
Fishes	<u>Perca fluviatilis</u>	C	D
Fishes	<u>Sander lucioperca</u>	C	D
Fishes	<u>Chondrostoma vardarense</u>	C	B
Fishes	<u>Vimba melanops</u>	R	B
Invertebrates	<u>Lycaena ottomanus</u>	C	B
Invertebrates	<u>Thymelicus acteon</u>	C	D
Invertebrates	<u>Pyrgus cinarae</u>	C	D
Invertebrates	<u>Hipparchia senthes</u>	C	B
Invertebrates	<u>Melitaea trivia</u>	C	D
Invertebrates	<u>Brenthis hecate</u>	C	D
Invertebrates	<u>Pontia chloridice</u>	C	D
Invertebrates	<u>Pieris ergane</u>	C	D
Invertebrates	<u>Callimenes macrogaster</u>	R	A
Invertebrates	<u>Bureschiana drenskii</u>	P	B
Invertebrates	<u>Balkanopetalum petrovi</u>	P	B
Ferns	<u>Adiantum capillus-veneris</u>	V	A
Flowering Plants	<u>Acer heldreichii</u>	R	A
Conifers	<u>Taxus baccata</u>	V	A
Flowering Plants	<u>Oenanthe millefolia</u>	R	B
Flowering Plants	<u>Stefanoffia daucoides</u>	C	A
Flowering Plants	<u>Bupleurum apiculatum</u>	R	B
Flowering Plants	<u>Bunium ferulaceum</u>	V	A
Flowering Plants	<u>Oenanthe lachenalii</u>	V	A
Flowering Plants	<u>Hippomarathrum cristatum</u>	V	A
Flowering Plants	<u>Bupleurum flavum</u>	R	A
Flowering Plants	<u>Aristolochia rotunda</u>	R	A
Flowering Plants	<u>Ilex aquifolium</u>	V	A
Flowering Plants	<u>Anthemis virescens</u>	R	A
Flowering Plants	<u>Carduus thracicus</u>	C	A
Flowering Plants	<u>Anthemis rumelica</u>	R	B
Flowering Plants	<u>Pallenis spinosa</u>	R	A
Flowering Plants	<u>Alkanna stribrnyi</u>	R	B
Flowering Plants	<u>Alkanna tinctoria</u>	R	D
Flowering Plants	<u>Onosma thracica</u>	R	B
Flowering Plants	<u>Alkanna primuliflora</u>	R	B
Flowering Plants	<u>Capsella thracica</u>	R	B
Flowering Plants	<u>Trachelium rumelianum</u>	V	B
Flowering Plants	<u>Legousia pentagonia</u>	R	A
Flowering Plants	<u>Silene lydia</u>	R	A
Flowering Plants	<u>Silene cretica</u>	R	A
Flowering Plants	<u>Saponaria stranjensis</u>	R	B
Flowering Plants	<u>Jovibarba heuffelii</u>	R	B
Flowering Plants	<u>Sempervivum ciliosum</u>	R	A
Flowering Plants	<u>Convolvulus boissieri</u>	V	A
Flowering Plants	<u>Arbutus andrachne</u>	V	A
Flowering Plants	<u>Arbutus unedo</u>	V	A




Species group 	Species name	Population size estimations	Motivation for species mention
Flowering Plants	<u>Onobrychis degenii</u>	C	<u>B</u>
Flowering Plants	<u>Lupinus graecus</u>	R	<u>D</u>
Flowering Plants	<u>Chamaecytisus jankae</u>	R	<u>B</u>
Flowering Plants	<u>Lotononis genistoides</u>	V	<u>A</u>
Flowering Plants	<u>Lupinus angustifolius</u>	R	<u>D</u>
Flowering Plants	<u>Lupinus albus</u>	R	<u>A</u>
Flowering Plants	<u>Hippocrepis unisiliquosa</u>	R	<u>A</u>
Flowering Plants	<u>Quercus coccifera</u>	R	<u>A</u>
Flowering Plants	<u>Geranium macrostylum</u>	V	<u>A</u>
Flowering Plants	<u>Haberlea rhodopensis</u>	R	<u>C</u>
Flowering Plants	<u>Hypericum thasium</u>	R	<u>B</u>
Flowering Plants	<u>Thymus atticus</u>	C	<u>B</u>
Flowering Plants	<u>Micromeria juliana</u>	V	<u>A</u>
Flowering Plants	<u>Stachys serbica</u>	R	<u>B</u>
Flowering Plants	<u>Betonica haussknechtii</u>	R	<u>B</u>
Flowering Plants	<u>Stachys leucoglossa</u>	C	<u>B</u>
Flowering Plants	<u>Satureja pilosa</u>	C	<u>B</u>
Flowering Plants	<u>Nigella orientalis</u>	V	<u>A</u>
Flowering Plants	<u>Anemone pavonina</u>	C	<u>D</u>
Flowering Plants	<u>Polygala monspeliaca</u>	C	<u>A</u>
Flowering Plants	<u>Ruta graveolens</u>	V	<u>A</u>
Flowering Plants	<u>Galium mirum</u>	R	<u>B</u>
Flowering Plants	<u>Crucianella graeca</u>	R	<u>B</u>
Flowering Plants	<u>Crucianella latifolia</u>	R	<u>A</u>
Flowering Plants	<u>Verbascum juruk</u>	V	<u>B</u>
Flowering Plants	<u>Verbascum rupestre</u>	V	<u>B</u>
Flowering Plants	<u>Verbascum humile</u>	C	<u>B</u>
Flowering Plants	<u>Trapa natans</u>	V	<u>C</u>
Flowering Plants	<u>Atropa bella-donna</u>	R	<u>A</u>
Flowering Plants	<u>Galanthus elwesii</u>	R	<u>A</u>
Flowering Plants	<u>Iris suaveolens</u>	R	<u>B</u>
Flowering Plants	<u>Muscari vandasii</u>	C	<u>B</u>
Flowering Plants	<u>Fritillaria pontica</u>	C	<u>B</u>
Flowering Plants	<u>Gagea chrysantha</u>	V	<u>D</u>
Flowering Plants	<u>Tulipa australis</u>	R	<u>D</u>
Flowering Plants	<u>Anacamptis pyramidalis</u>	C	<u>A</u>
Flowering Plants	<u>Cephalanthera damasonium</u>	C	<u>C</u>
Flowering Plants	<u>Cephalanthera epipactoides</u>	V	<u>A</u>
Flowering Plants	<u>Cephalanthera longifolia</u>	C	<u>C</u>
Flowering Plants	<u>Cephalanthera rubra</u>	C	<u>C</u>
Flowering Plants	<u>Dactylorhiza romana</u>	R	<u>C</u>
Flowering Plants	<u>Epipactis helleborine</u>	R	<u>C</u>
Flowering Plants	<u>Epipactis microphylla</u>	R	<u>C</u>
Flowering Plants	<u>Gymnadenia conopsea</u>	R	<u>C</u>
Flowering Plants	<u>Limodorum abortivum</u>	R	<u>A</u>
Flowering Plants	<u>Ophrys apifera</u>	R	<u>A</u>
Flowering Plants	<u>Ophrys cornuta</u>	C	<u>C</u>
Flowering Plants	<u>Orchis coriophora</u>	R	<u>C</u>
Flowering Plants	<u>Orchis laxiflora</u>	R	<u>A</u>
Flowering Plants	<u>Orchis morio</u>	C	<u>C</u>
Flowering Plants	<u>Orchis papilionacea</u>	C	<u>A</u>
Flowering Plants	<u>Orchis provincialis</u>	V	<u>A</u>
Flowering Plants	<u>Orchis tridentata</u>	C	<u>C</u>
Flowering Plants	<u>Platanthera bifolia</u>	C	<u>C</u>
Flowering Plants	<u>Platanthera chlorantha</u>	C	<u>C</u>

Species group 	Species name	Population size estimations	Motivation for species mention
Flowering Plants	<u>Ophrys mammosa</u>	R	<u>C</u>
Flowering Plants	<u>Orchis elegans</u>	R	<u>C</u>
Flowering Plants	<u>Orchis pinetorum</u>	R	<u>C</u>
Flowering Plants	<u>Orchis purpurea</u>	C	<u>C</u>
Flowering Plants	<u>Orchis simia</u>	C	<u>C</u>
Flowering Plants	<u>Spiranthes spiralis</u>	V	<u>A</u>
Invertebrates	<u>Trichoniscus rhodopiense</u>	P	<u>B</u>
Invertebrates	<u>Duroniella laticornis</u>	R	<u>A</u>
Invertebrates	<u>Paranocarodes chopardi</u>	R	<u>A</u>
Invertebrates	<u>Balcanodiscus frivaldskyanus</u>	P	<u>B</u>
Plants	<u>Astracantha thracica</u>	V	<u>A</u>
Plants	<u>Dalium velenovskyi</u>	R	<u>B</u>
Invertebrates	<u>Duvalius petrovi</u>	R	<u>B</u>
Plants	<u>Eriolobus trilobata</u>	V	<u>A</u>
Plants	<u>Lathraea rhodopaea</u>	R	<u>B</u>
Plants	<u>Lilium rhodopeum</u>	V	<u>C</u>
Plants	<u>Nonnea atra</u>	R	<u>B</u>
Invertebrates	<u>Ottiorhynchus beroni</u>	P	<u>B</u>
Plants	<u>Polygala rhodopaea</u>	R	<u>B</u>
Plants	<u>Potentilla regis-borisii</u>	C	<u>B</u>
Plants	<u>Quercus thracica</u>	V	<u>B</u>
Plants	<u>Salix xanticola</u>	R	<u>B</u>
Plants	<u>Serapias vomeraceae</u>	R	<u>A</u>
Plants	<u>Smiranium rotundifolium</u>	R	<u>A</u>
Plants	<u>Thymus bracteosus</u>	V	<u>B</u>
Plants	<u>Verbascum spathulisepalum</u>	V	<u>B</u>

### G3. Habitat types mentioned in site

Habitat type code 	Habitat type english name	Cover(%)
<u>10077</u>	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation	0.50
<u>10095</u>	Juniperus communis formations on heaths or calcareous grasslands	0.27
<u>10098</u>	Arborescent matorral with Juniperus spp	3.00
<u>10111</u>	Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi	0.05
<u>10120</u>	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	2.00
<u>10121</u>	Pseudo-steppe with grasses and annuals of the Thero-Brachypodietea	3.00
<u>10137</u>	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	0.02
<u>10138</u>	Mountain hay meadows	0.23
<u>10165</u>	Calcareous rocky slopes with chasmophytic vegetation	0.10
<u>10166</u>	Siliceous rocky slopes with chasmophytic vegetation	0.50
<u>10167</u>	Siliceous rock with pioneer vegetation of the Sedo-Scleranthion or of the Sedo albi-Veronicion dillenii	1.27
<u>10170</u>	Caves not open to the public	0.01
<u>10185</u>	Luzulo-Fagetum beech forests	0.04
<u>10187</u>	Asperulo-Fagetum beech forests	1.07
<u>10189</u>	Medio-European limestone beech forests of the Cephalanthero-Fagion	0.14
<u>10191</u>	Galio-Carpinetum oak-hornbeam forests	2.36
<u>10192</u>	Tilio-Acerion forests of slopes, screes and ravines	0.01
<u>10198</u>	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	0.35

Habitat type code 	Habitat type english name	Cover(%)
<u>10211</u>	Hellenic beech forests with Abies borisii-regis	0.01
<u>10214</u>	Salix alba and Populus alba galleries	0.00
<u>10216</u>	Platanus orientalis and Liquidambar orientalis woods (Platanion orientalis)	0.01
<u>10217</u>	Southern riparian galleries and thickets (Nerio-Tamaricetea and Securinegion tinctoriae)	0.02
<u>10234</u>	(Sub-) Mediterranean pine forests with endemic black pines	0.03
<u>10244</u>	Eastern sub-mediterranean dry grasslands (Scorzoneratalia villosae)	8.00
<u>10249</u>	<b>Pannonian-Balkan turkey oak –sessile oak forests</b>	<b>30.78</b>
<u>10264</u>	Oro-Moesian acidophilous grasslands	0.01
<u>10266</u>	Moesian beech forests	3.05
<u>10269</u>	Moesian silver lime woods	0.05
<u>10270</u>	Eastern white oak woods	4.56

## APPENDIX H: MAPS

Item No	ICGB AD Drawing/ Document No.	Sheet	Drawing / Document No	Drawing/Document Title
<b>1.</b>	<b>ROUTING MAPS – RECORDING PLANS SCALE 1:50.000</b>			
1	10760 / PL / P1 / 02 / 402	1	P513-100-91-001	RECOMMENDED PIPELINE ROUTING MAP ΠΡΟΤΕΙΝΟΜΕΝΗ ΟΔΕΥΣΗ ΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ MAPS HMGS 1:50.000 - ΚΟΜΟΤΙΝΙ & ΜΥΤΙΚΑΣ / Φ.Χ. ΓΥΣ 1:50.000 - ΚΟΜΟΤΗΝΗ & ΜΥΤΙΚΑΣ
2	10760 / PL/ P1/ 02/ 402A	1	P513-100-91-001A	ALTERNATIVE PIPELINE ROUTING MAP ΕΝΑΛΛΑΚΤΙΚΕΣ ΟΔΕΥΣΕΙΣ ΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ MAPS HMGS 1:50.000 - ΚΟΜΟΤΙΝΙ & ΜΥΤΙΚΑΣ / Φ.Χ. ΓΥΣ 1:50.000 - ΚΟΜΟΤΗΝΗ & ΜΥΤΙΚΑΣ
<b>2.</b>	<b>PIPELINE ROUTING MAPS – RECORDING PLANS SCALE 1:5.000</b>			
1	10760 / PL / P1 / 02 / 421	1	P513-100-92-001	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ Κ0+000.00 ΤΟ/ΕΩΣ Κ5+438.69
2	10760 / PL / P1 / 02 / 422	1	P513-100-92-002	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ Κ5+438.69 ΤΟ/ΕΩΣ Κ6+507.29 & FROM/ΑΠΟ Κ10+160.64 ΤΟ/ΕΩΣ Κ10+196.31
3	10760 / PL / P1 / 02 / 423	1	P513-100-92-003	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ Κ6+507.29 ΤΟ/ΕΩΣ Κ10+160.64
4	10760 / PL / P1 / 02 / 424	1	P513-100-92-004	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ Κ10+196.31 ΤΟ/ΕΩΣ Κ13+019.24
5	10760 / PL / P1 / 02 / 425	1	P513-100-92-005	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ Κ13+019.24 ΤΟ/ΕΩΣ Κ17+453.07
6	10760 / PL / P1 / 02 / 426	1	P513-100-92-006	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ Κ17+453.07 ΤΟ/ΕΩΣ Κ23+240.37
7	10760 / PL / P1 / 02 / 427	1	P513-100-92-007	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ Κ23+240.37 ΤΟ/ΕΩΣ Κ40+066.08
8	10760 / PL / P1 / 02 / 428	1	P513-100-92-008	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ Κ40+066.08 ΤΟ/ΕΩΣ Κ55+084.56
9	10760 / PL / P1 / 02 / 429	1	P513-100-92-009	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ

Item No	ICGB AD Drawing/ Document No.	Sheet	Drawing / Document No	Drawing/Document Title
				RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ K55+084.56 TO/ΕΩΣ K74+018.35
10	10760 / PL / P1 / 02 / 430	1	P513-100-92-010	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ K74+018.35 TO/ΕΩΣ K85+056.53
11	10760 / PL / P1 / 02 / 431	1	P513-100-92-011	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ K85+056.53 TO/ΕΩΣ K105+003.25
12	10760 / PL / P1 / 02 / 432	1	P513-100-92-012	PIPELINE ROUTING MAP / ΟΔΕΥΣΗ ΣΩΛΗΝΑΓΩΓΟΥ RECORDING PLAN / ΟΡΙΖΟΝΤΙΟΓΡΑΦΙΑ GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ FROM/ΑΠΟ K105+003.25 TO/ΕΩΣ K109+000.00
<b>3.</b>	<b>GEOLOGICAL MAPS (SCALE 1:50.000)</b>			
1	10760 / PL / P1 / 01 / 501	1	P513-100-20-001	GEOLOGICAL MAP SCALE 1:50.000 / ΓΕΩΛΟΓΙΚΟΣ ΧΑΡΤΗΣ ΚΛΙΜΑΚΑ 1:50.000 GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ MAP HMGS 1:50.000 - ΚΟΜΟΤΙΝΙ & ΜΥΤΙΚΑΣ / Φ.Χ. ΓΥΣ 1:50.000 - ΚΟΜΟΤΗΝΗ & ΜΥΤΙΚΑΣ
<b>4.</b>	<b>MAPS OF ACTIVE SEISMIC FAULTS (SCALE 1:5.000)</b>			
1	10760 / PL / P1 / 01 / 521	1	P513-100-22-101	MAP OF ACTIVE SEISMIC FAULTS SCALE 1:5.000 / ΧΑΡΤΗΣ ΤΩΝ ΕΝΕΡΓΩΝ ΡΗΓΜΑΤΩΝ ΚΛΙΜΑΚΑ 1:5.000 GREEK SECTION / ΕΛΛΗΝΙΚΟ ΤΜΗΜΑ
<b>5.</b>	<b>LAND USE PLAN ACCORDING TO CORINE 2000 (SCALE 1:50.000)</b>			
1	10760 / PL / P1 / 01 / 401	1	P513-100-99-001	LAND USE MAP ACCORDING TO CORINE 2000 / ΧΑΡΤΗΣ ΧΡΗΣΕΩΝ ΓΗΣ ΣΥΜΦΩΝΑ ΜΕ ΤΟ CORINE 2000 MAP HMGS 1:50.000 - ΚΟΜΟΤΙΝΙ & ΜΥΤΙΚΑΣ / Φ.Χ. ΓΥΣ 1:50.000 - ΚΟΜΟΤΗΝΗ & ΜΥΤΙΚΑΣ