

**XXIIInd WORLD ROAD CONGRESS  
DURBAN 2003**

**GREECE - NATIONAL REPORT**

**STRATEGIC DIRECTION SESSION ST2**  
*Roads and quality of life*

## SUMMARY

### 1. UPGRADING OF THE GREEK TRANSPORT SYSTEM

The Greek transport system has been radically upgraded and expanded over the past few years with a view to achieving balanced economic development of the country regions and integration of Greece with the other Member – States of the European Union (EU).

For the period 1998-2002, the program includes investments in the order of 980 m€ for the railroad network, 180 m€ for the airports, 65 m€ for the ports and 4.680 m€ for the road network.

### 2. EXPANSION OF THE ROAD NETWORK INFRASTRUCTURE

Currently, the Greek section of the Trans-European Network covers approximately 4,000 km. It has been designed as a closed motorway with a central reserve, two lanes and a hard shoulder per direction, with a cross section of 24,50 m. In the areas close to Athens and Thessaloniki, due to heavier traffic volumes, three lanes per direction have been provided for. For a limited length accommodating lower traffic volumes, the construction of an expressway has been anticipated, i.e. two-directional single carriageway with a cross-section of 12,50 m.

For the period 1994-2008, the total budget for the investment program amounts to 13.670 m€ (Table 1). It is co-funded by the European Union (Community Support Framework etc) by 50% for the selected projects. At the same time, loans have been granted by the European Investment Bank

Toll collection is anticipated along the greatest part of the Network and wherever there is a motorway. Today, the average fee for passenger cars is less than 0.045 € / km.

In particular, for the period 1998-2002 the expenses reached the amount of 4.680 m€

During that period, 860 km of motorway were completed.

### 3. IMPROVEMENT OF PROJECT AND CONSTRUCTION MANAGEMENT

Over the past four years and parallel to the projects realization, a broad program for the improvement of the Project and Construction Management of public works was implemented by the Greek Authorities. Such a program ensures transparency and free competition leading to projects of higher quality as well as to less cost and time overruns.

#### 4. MODERNIZATION OF PUBLIC AGENCIES AND PRIVATE COMPANIES

In the context of the Program for the Greek part of the Trans-European Road Network, projects are mainly managed by Public Services. Apart from those operating traditionally for many years, and in the context of the efforts to modernize Public Administration, Special Services have been established to achieve more autonomous management. At the same time, a number of “Sociétés Anonymes” companies have been created in the Public Sector and are fully autonomous in the management of projects, by employing, for example, private Project and Construction Managers.

Design and construction is executed by companies of the private sector in accordance with the new Greek Legislation in force and the recently adopted European Union Directives. New legislation has promoted the merging of small firms and resulted in the creation of bigger and better organized companies.

#### 5. CO-OPERATION OF PUBLIC AND PRIVATE SECTOR

In Road Construction, co-operation between Public and Private Sector has already been achieved for the Rio – Antirio Bridge, a three – lane, six – span sea crossing and Attiki Odos, the 70 km Athens outer ring road.

Another six big Motorway Concessions totalling 1100 km are already under way to construct the remaining sections of the Greek Trans-European Road Network.

## **NATIONAL REPORT (GREECE)**

**1998 - 2002**

### **1. UPGRADING OF THE GREEK TRANSPORT SYSTEM**

The Greek transport system has been radically upgraded and expanded over the past few years with a view to achieving balanced economic development of the country regions and integration of Greece with the other member – states of the European Union (EU).

In particular, the program aims at the following:

- Quantitative development of transport infrastructure
- Qualitative development of the provided services
- Synergy between the different means of transport
- Decongestion of the major urban centres

For the attainment of the above objectives, an integrated development strategy pertaining to the whole Greek transport system has been adopted and is being implemented, laying particular emphasis on the development of the road network, given the country's geomorphology.

For the period 1998-2002, the program includes investments in the order of 980 m€ for the railroad network, 180 m€ for the airports, 65 m€ for the ports and 4.680 m€ for the road network.

## 2. EXPANSION OF THE ROAD NETWORK INFRASTRUCTURE

The major objective of the investment in the road network is the construction of the Greek part of the Trans - European Road Network as soon as possible. It is a network of road axes running through the Greek territory to ensure optimum development of road transport within Greece and South-eastern Europe.

Currently, the Greek part of the Trans-European Network covers approximately 4,000 km. Over its greatest length, it has been designed as a closed motorway with two lanes per direction, a central reserve and a hard shoulder per direction, with cross section of 24,50 m. In the areas close to Athens and Thessaloniki, due to heavier traffic volumes, three lanes per direction have been provided for. For the sections accommodating lower traffic volumes, the construction of an expressway has been anticipated as a two-direction single carriageway (cross-section 12,50 m.)

For the period 1994-2008, the total budget for the investment program amounts to 13.670 m€ (Table 1). It is co-funded by the European Union (Community Support Fund etc) by 50% for the selected projects. At the same time, loans have been secured from the European Investment Bank

It is also anticipated that the Program will be financed by private funds by approximately 34% of the total program cost.

Toll collection is anticipated along the greatest part of the Network and wherever there is a motorway. Today, the average fee for passenger cars is less than 0.045 € / km.

In particular, for the period 1998-2002 the expenses reached the amount of 4.680 m€

During that period, 860 km of motorway were completed.

The summary Table 1 shows the total of road axes constituting the Greek part of the Trans-European Network and its development course. It also defines the network existing before 1998, the projects executed (new construction or upgrading) in the period 1998 – 2002, while at the end it quotes the kilometres scheduled for completion in the period 2003 – 2008. Additionally, it provides economic data relating to the total cost per axis.

### 3. PROJECTS MANAGEMENT SYSTEM

Over the past four years and parallel to the projects construction, a broad program for the modernization of the Public Works Execution System was implemented by the Greek Authorities. Such a program ensures transparency and free competition leading to better quality of projects as well as to fewer overruns (cost – schedule).

In particular, the Program includes:

- Modifications of the Legislative framework (law codifications, Legislative Regulations)
- Issuance of Instructions and Technical Manuals to be used by the bodies responsible for the projects materialization.
- Optimization of Technical Specifications regarding the design – construction – operation and maintenance of projects.
- Creation of a system to define the individual projects cost, and to statistically monitor Public Works cost.
- Development and application of a quality assurance system throughout the Public Works execution cycle.
- Works Safety audit
- Training of executives
- Change of strategy for the tendering of projects to prevent ruthless competition.

### 4. MODERNIZATION OF PROJECTS MATERIALIZATION BODIES

The Projects in the context of the Program for the Greek part of the Trans-European Road Network are mainly managed by Public Services. Apart from those operating traditionally for many years, and in the context of the efforts to modernize Public Administration, Special Services have been established being more autonomous. At the same time, a number of SA companies have been created in the Public Sector and are fully autonomous in the management of projects, which is in turn achieved through the employment of Project and Construction Managers.

Designs are prepared by Private Design Offices in accordance with the Greek Legislation in force and the European Union Directives.

Design checkers of international calibre and Experts are employed. The designers bear the contractual obligation to insure the designs against damages suffered by the Client.

Regarding the projects construction, a new institutional framework is applied for the re-structuring of the sector and the market operation while technical companies are given the opportunity to be oriented towards mergers, creating competitive construction bodies capable of responding to the challenge posed by the projects in the context of the 3<sup>rd</sup> CSF.

New and increased standards are established for classification of contracting companies in a higher category, which calls for mergers and ensures uniform groups of companies, with a strong financial and administrative position, high credibility and solvency, thus ensuring and increasing their debt capacity.

## 5. COOPERATION OF PUBLIC AND PRIVATE SECTOR

In the Road Construction Sector, co-operation between Public and Private Sector has already been achieved twice; specifically, the Rio – Antirio Bridge and the Attiki Odos. The former connects the Peloponnese with the West Roumelis, is 2.252 m. long and it is budgeted at 825,5 €. The latter which constitutes the outer ring road of Athens, is 65 km long and its budget reaches the amount of 3.500 €. Both projects will be completed before the Olympic Games in 2004.

The planning of Motorway Concessions is already under way along with the selection – by the Greek State – of the most suitable Concession Contractors to construct the remaining sections along PATHE (Patras-Athens - Thessaloniki – Evzoni), EGNATIA ODOS, ATTIKI ODOS, WEST AXIS, AXIS OF CENTRAL GREECE, KORINTHOS – TRIPOLIS – KALAMATA, of a total length of 1100 km.

Of course, the required and time-consuming procedures for the implementation of the Concession programs are known. The initial schedules are considerably affected by the Designs completion, the traffic studies, the legal elaboration of the Concession Contracts and mainly the preparation of funding schemes in collaboration with Private Banks.



Table 1

## GREEKTRANS – EUROPEANROADNETWORK

ROAD AXIS	EXISTING Before 1998 (Km)	COMPLETED 1998 - 2002 (Km)		PLANNED 2003 - 2008 (Km)		TOTAL ROAD AXIS LENGTH (Km)	TOTAL ESTIMATED COST (EURO)
		NEW	UPGRADED	NEW	UPGRADED		
Egnatia Odos	117,00	318,00	—	233,00	—	680,00	4.011,00
Peripheral Ring of Attica	0,00	42,50	—	23,70	—	66,20	3.500,00
Elefsina - Spata - Lavrio	15,00	—	—	15,00	—	32,00	—
Eleftheroupoli - Serres - Lefkonas	50,00	21,00	26,00	10,00	23,00	86,00	21,45
Central Greece Axis	196,00	—	—	—	196,00	196,00	CONCESSION
Makrychori Karditsas - N. Lefki (PATHE)	50,00	—	—	—	50,00	50,00	CONCESSION
Velestino - Volos (PATHE)	13,50	2,50	—	—	—	16,00	1,90
Lamia - Karpenissi - Agrinio	211,00	1,40 Tunnel Construction	—	—	211,00	213,00	29,80
Thermopyles - Amfissa - Itea - Nafpaktos - Antirrio (Nafpaktos Deviation)	152,00	10,00	—	—	152,00	162,00	11,40
Pyrgos - Olympia - Tripoli	126,00	—	25,00	—	50,00	139,00	16,48 / CONCESSION
North Crete Axis (BOAK)	227,00	60,00	11,00	3,50	12,00	310,00	107,00
Iraklio - Pachia Ammos (South Crete Axis)	0,00	14,00	—	23,20	—	37,20	79,50
P.A.T.H.E.	706,60	35,00	215,00	25,00	300,00	774,00	4.292,60
Western Axis (Ionia Odos)	211,00	24,00	17,00	263,00	164,00	427,00	1.173,20
Egnatia Odos Vertical Axes	129,00	22,50	—	67,50	—	200,00	331,91

<b>Korinthos - Tripoli - Megalopoli - Tsakona</b>	235,00	—	—	1,40 Tunnel Construction	233,00	235,00	20,50
<b>Lefktro - Sparti - Gythio</b>	96,00	—	—	—	96,00	96,00	—
<b>Elefsina - Thiva - Yliki</b>	57,00	—	—	—	57,00	57,00	CONCESSION
<b>Thessaloniki - Moudania</b>	61,00	—	17,50	—	43,50	61,00	26,50
<b>TOTAL</b>	<b>2653,10*</b>	<b>550,90</b>	<b>311,50</b>	<b>665,30</b>	<b>1.587,50</b>	<b>3.837,40</b>	<b>13,606,76 M€</b>
		<b>862,40</b>		<b>2.252,80</b>			

### Notes

\* The Kilometers given concern 9 % of Motorway and 91 % of Ordinary Road.

\*\* The Kilometers given concern 79 % of Motorway and 21 % of Ordinary Road.

\*\*\* The Kilometers given concern 71 % of Motorway and 29 % of Ordinary Road.

## ANNEXE

### THE GREEK TRANS-EUROPEAN ROAD NETWORK

The major axes of the Greek Trans-European Road Network and the progress of the Completion Works are as follows:

#### 1. «P.A.TH.E.»: Patras – Athens – Thessaloniki – Evzoni

It is the oldest and one of the most significant, at the national level, road axis. It crosses the country from south to north, linking 9 ports, 6 airports and 16 cities - among which the three biggest cities of Greece - and ends at the border with F.Y.R.O.M.

P.A.TH.E is 774km long; 443km have already been opened to traffic as a dual carriageway, in some sections with 3 lanes and in other with 4 lanes per direction.

#### 2. «Egnatia Odos»: Igoumenitsa – Ioannina – Thessaloniki – Alexanroupolis – Kipoi/Ormenio

The Egnatia Motorway is the northern horizontal axis of our country. Starting from the northwest port of Igoumenitsa, Egnatia crosses Epirus and Northern Greece and, passing through Thessaloniki, the axis ends at the Greek-Turkish border towards Constantinople.

The special ground characteristics mandated the construction of many structures. The project includes 90km of tunnels (2x45km) and 80km of bridges (2x40km).

The total length of the axis is 680km. 400 km have already been opened to traffic.

### Vertical Axes of «Egnatia Odos»

The Egnatia Motorway also includes a series of vertical axes leading to the neighbouring Balkan countries, namely Ioannina – Kakavia (Albania), Siatista – Kastoria - Krystallopigi (Albania), Thessaloniki-Promachonas (Bulgaria), Ardanio-Ormenio (Bulgaria).

It is concluded that the project is of strategic importance since “Egnatia” will ensure communication between cities and ports, which are of major significance and play an active role in the economic development of both Greece and the Balkans.

#### **3. «West Axis»: Kakavia – Arta – Amfilochia – Agrinio – Rio/Antirio bridge – Patras – Pyrgos – Tsakona – Carriageway with direction from Amfilochia to Aktio (through the gulf) – Preveza**

Starting from the Greek/Albanian border and through the west part of the country, the West Axis meets the cities of Patras and Pyrgos and ends at the port of Kalamata. The above connection will be feasible via the Rio/Antirio bridge, a project that is currently being executed and will be completed in 2004.

It is a bridge, 2.252m long, with 2 traffic lanes per direction. The submerged tunnel connecting Aktio with Preveza has already been constructed, 1.5 km long.

#### **4. «Attiki Odos»: Attiki – Elefsina – Spata Airport - Lavrio**

«Attiki Odos» is a motorway with three lanes per direction, 65km long, and constitutes in essence the ring road of Athens and Attica allowing quick access to the new International Airport of Spata. This axis aims to relieve the traffic congestion in Athens and at Piraeus port, thus facilitating the unobstructed high-speed traffic flow.

To date, 42 km have been opened to traffic and by the end of 2003 the whole project is expected to be completed.

**5. «Axis of Central Greece»: Panagia – Trikala – Karditsa –  
Lamia – Skarfia**

The motorway of Central Greece, 196km long, has been tendered by adopting the system of the concession contracts. It crosses Greece diagonally by crossing Thessaly and linking the Egnatia Motorway (area of Panagia) with P.A.T.H.E (area of Lamia).

**6. «North Axis of Crete: Kasteli – Chania – Rethymno – Heraklion– St.  
Nikolaos – Siteia**

The North Road Axis of Crete is 310 km long and crosses northern Crete from Kasteli in the west to Siteia in the east. It is an expressway with one traffic lane and a hard shoulder per direction, and upgraded geometrical features. In the periurban areas, the axis adopts full motorway features.

The axis is of critical importance for the development of local tourism and the agro-industry, since it links three ports, two airports and all the major cities of northern Crete.

Out of the total 310 km, approximately 290km have already been opened to traffic.