EGNATIA ODOS ROAD - GREECE

A modern closed motorway 670 kilometres long and 24.5 metres wide over the greatest part of its length following a new alignment and running across Epirus and Northern Greece from Igoumenitsa to Evros, the Egnatia Motorway is one of the largest road construction projects in Europe.
On the threshold of the 21st century, one of the largest road construction projects being carried out in Greece (and, indeed, anywhere in Europe) is the Egnatia Motorway, the modern reincarnation of the great Roman highway known as the Via Egnatia. It is a closed dual carriageway motorway with a central reserve, two traffic lanes plus an emergency lane per direction, for a total paved width of 24.5 metres over its greatest part, except for the road's mountainous sections.
The 670 km Egnatia Motorway is a modern motorway that will probably be the only road (and by extension the only transport) link spanning Northern Greece from its western to its eastern border. From its starting-point at Igoumenitsa, it runs across the Prefectures of Thesprotia, Ioannina, Grevena, Kozani, Imathia, Thessaloniki, Serres, Kavala, Xanthi, Rodopi and Evros, to the village of Kipoi on the Turkish border.
Nine major vertical axes provide links to Albania, FYROM, Bulgaria and Turkey, and the whole system is served by 720 km of service roads.
What makes it one of the most interesting technical projects in Greece today is the number of structures needed to carry it across the countryside. The realisation of this motorway requires the construction of:

- 1650 bridges, with a combined length of 40 km (or 80 km measured as single-carriageway bridges)
- 74 tunnels, with a combined length of 49,5 km (or 99 km measured as single-carriageway tunnels). Three of these tunnels are more than 3 km long: the Driskos Twin-Bore Tunnel, 4.7 km long per carriageway, the Dodoni Twin-Bore Tunnel, 3.4 km long per carriageway, and the Metsovo Single-Bore Tunnel, 3.5 km long, which is already constructed. The tunnels on the inland alignment Strymonas - Peramos are also included.
- 50 interchanges with the existing road network.
- 43 river crossings
- 11 railway crossings.

Main characteristics:

STRETCHING:	From Igoumenitsa in the Prefecture of Thesprotia to Kipoi in the Prefecture of Evros
FOR A TOTAL LENGTH OF:	670 kilometres
SERVING THE REGIONS OF:	Thesprotia - Ioannina - Grevena - Kozani - Imathia - Thessaloniki - Kavala - Xanthi - Rodopi - Evros
LINKED WITH THE BORDERS OF:	Albania - FYROM - Bulgaria - Turkey, through nine major vertical axes
PASSING THROUGH THE TOWNS OF:	Igoumenitsa - Ioannina - Metsovo - Grevena - Kozani - Veroia - Thessaloniki - Kavala - Xanthi - Komotini – Alexandroupolis
LINKED TO THE PORTS OF:	Igoumenitsa - Thessaloniki - Kavala – Alexandroupolis
AND THE AIRPORTS OF:	Ioannina - Kastoria - Kozani - Thessaloniki - Kavala – Alexandroupolis
PASSING NEAR:	332 communities
AND:	30 tourist areas and regions of particular interest
SERVING THE INDUSTRIAL ZONES OF:	Ioannina - Florina - Edessa - Thessaloniki - Kilkis - Serres - Drama - Xanthi - Komotini - Alexandroupolis, either directly or by its vertical axes
PROPOSING AND FINANCING:	Archaeological excavations, protection of monuments, environmental protection works (biotopes, etc.)
TECHNICAL CHARACTERISTICS:	Dual carriageway with two traffic lanes per direction, a central reserve and an emergency lane on the right.
MAJOR CONSTRUCTION UNITS:	50 road interchanges 350 entrance / exit overbridges and underpasses 1650 major bridges with a combined length of about 40 km, and a number of minor bridges, 74 tunnels, with a maximum length of 4,8 km and of a combined length of 49,5 km or 99 km measured as single carriageway 43 river crossings 11 railway crossings
THE AREA SERVED ACCOUNTS FOR:	36% of the country's total population 33% of its total gross national product In the primary sector, 54% of total farmland and 65% of total irrigated land In the secondary sector, 41% of total industrial employment, and 51% of total mining activity.

BRIDGES & SMALL STRUCTURES ON THE EGNATIA MOTORWAY

- BRIDGES 205
- OVERBRIDGES 100
- UNDERPASSES 235
- CULVERTS (L>6,0m) 32
- CULVERTS (L<6,0m) 1178

BRIDGE COMBINED LENGTH: 40km

These structures range from box culverts to major bridges of a combined length of 1000 m each. They also include grade-separated junctions, as well as major ravine bridges with piers of a height of 100 m. (Aracthos Bridge , Bridge G12 on Polimilos-Lefkopetra section).

The construction of such a variety of bridges demands the application of every possible modern construction method currently in use. The abundance of bridges is due to environmental reasons and aims at preventing the construction of big embankments. The Egnatia Motorway bridges are twin split carriageways bridges, in accordance with the practice followed in the construction of German highways. Due to their design, which imposes either small or large spans, certain Egnatia Motorway structures are considered to be, both in Greece and on an international level, special bridges.

The main bridges are the following:

Region	Structure Name	Carriageway length / max span (m)	Height (m)
Epirus	Aracthos	1.000/142	80
Thrace	Nestos	450/40	10
Macedonia	Greveniotikos	920/100	40
Epirus	Krystallopigi	850/55	30
Epirus	Metsovitikos	540/235	100
Epirus	Votonosi	490/230	53
Epirus	Megalorema	480/45	28
Macedonia	G12 (section Polymylos-Lefkopetra)	465/110	90
Thrace	Lissos	450/45	15
Epirus	Mesovouni	260/100	30

DESIGN

EGNATIA ODOS A.E. is prioritising construction of continuous decks with stable or variable superstructure section height largely depending on the construction method (e.g. cantilever). The pre-stressing applied is generally longitudinal and, when required, transverse, as per DIN 4227. It is preferred to construct boxes that are ergonomic and easily accessible from the interior. The design also provides for transverse diaphragms at the support areas. Normally, bridges are supported on hollow support piers, either monolithic or with bearings. In the latter case, a couple of bearings are usually used.
Abutments are separated from the deck with the use of bearings that are either sliding or common elastomeric ones. Other acceptable solutions are the use of pre-cast beams with an in-situ concreted deck slab.

From February 2000 to date, 446 km of new motorway were opened to traffic.

In February **2000**, the first 51 km in Thrace and 3 km in Thessaloniki were opened to traffic. In July, 24 km were opened to traffic in Siatista and Kozani; in August, 14 km on the section Ag. Andreas-Ag. Syllas at Kavala By-pass, and in October, 4 km at Komotini By-pass. In March 2001, 20 km were opened to traffic in the area of Polimilos-Kozani, while in April, 12 km at Kavala By-pass, 18 km in the region of Grevena-Siatista, and 7 km in the region of Pilea-Ardanio. Finally, in September 2001, 9 km were opened to traffic in the region of Veria-Kouloura.

In **2002**, a combined section length of 107 km was opened to traffic, out of which the first 25 km in Epirus, 15 km on the section Profitis-Nimphopetra and 67 km in Thrace.

In **2003**, sections of a total length of 79 km were opened to traffic, from Kavala By-pass to Chrisoupoli and on the sections Kouloura - Klidi (26 km), K2 (Ionia) - K4 (7 km) (Outer Thessaloniki Ring Road) and Derveni - Analipsi (17 km).

In **2004**, sections of a total length of 45 km were opened to traffic. 10 km in Epirus from Igoumenitsa to Neochori, 26 km in West Macedonia the section Polimilos to Veria (Kastania Bypass) and 9 km in Central Macedonia (External Ring Road of Thessaloniki).

In **2005**, sections of a total length of 35 km were opened to traffic; 22 km in Central Macedonia (from Asprovalta to Strimonas), and 13 km in Epirus (4 km in the section Pedini - Dodoni Tunnel and 9 km from Peristeri I/C to Metsovo I/C).

In **2006**, sections of a total length of **25 km** were opened to traffic. 7 km in Epirus Prefecture from S2 tunnel exit to Dodoni I/C and 18 km in Central Macedonia Prefecture; 8 km from Nymfopetra to Megali Volvi and 10 km from Rentina I/C to Asprovalta I/C.

SECTIONS	km
Igoumenitsa-Íeohori	23 km
Eleftherohori-Tiria (Selles)	18 km
Agia Anastasia-Dodoni I/C	7 km
Dodoni Tunnel-Pedini	8 km
Peristeri-Metsovo	9 km
Grevena-Polimilos	62 km
Polimilos-Veria (Kastania Bypass)	26 km
Veria-Klidi	35 km
External Ring Road of Thessaloniki (Ê1-Ê4)	18 km
Derveni-Íimfopetra	33 km
Nimfopetra-M. Volvi	8 km
Rentina I/C-Asprovalta I/C	10 km
Asprovalta-Strimonas	22 km
Ag. Andreas-Aspra Homata (Kavala Bypass)	26 km
Aspra Homata-Chrisoupoli	19 km
Vaniano-Mesti	78 km
Makri-Kipi	51 km
TOTAL	**453 km**

UNDER CONSTRUCTION

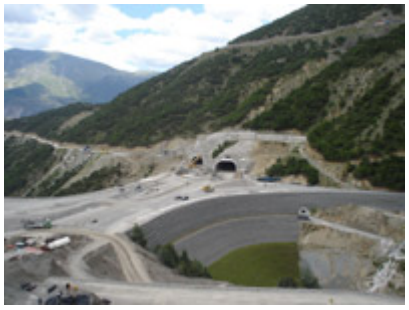
During year 2006 and in the beginning 2007 another **27 km** of new motorway, have been scheduled, to be opened to traffic.

SECTIONS	km
Ioannina I/C-Drosohori	10 km
Grevena Bypass	7 km
Grevena Western I/C-Venetikos I/C	6 km
Polimilos Interchange Area	4 km
TOTAL	**27 km**

Another **165 km** are currently under construction and will be gradually opened to traffic in the context of CSF III.

PREFECTURE	SECTIONS	km
EPIRUS	Neohori-Ålieftherohori	9
	Ôiria-Ioannina (section)	3
	Drosohori-Aracthos	10
	Arachthos Bridge	1
	Arachthos-Peristeri	10
	Metsovo-Panagia	15
WESTERN MACEDONIA	Panagia-Grevena	31
CENTRAL MACEDONIA	M. Volvi-Rentina I/C	14
EASTERN MACEDONIA & THRACE	Strymonas-Agios Andreas (inland alignment)	41
	Chrisoupoli-Vaniano	17
	Mesti-Makri (upgrading)	14
	TOTAL	**165**

These motorway sections are being constructed under **19** contracts budgeted at **€ 2098 M** (inclusive of VAT)



In addition, works are being constructed on the Vertical Axes and the Cross Border Linkage under **9** contracts budgeted at **€ 571 M**. These works are being carried out on the vertical axes "Siatista - Kristalopigi", "Thessaloniki - Serres - Promahonas", "Thessaloniki - Moudania", "Ardanio - Ormenio".

In parallel, it is being constructed the last important section which completes Egnatia Motorway in Epirus. It involves the construction of the second carriageway on a section 7 km long, from Anilio Tunnel Exit to Malakasi B, which also includes the eastbound carriageway of Metsovo Tunnel