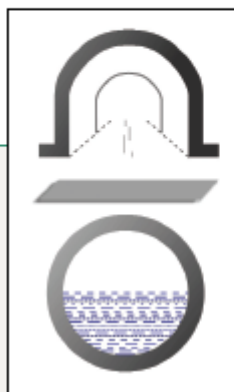


Greece

Name: Greek Tunnelling Society

Type of structure: Non-profit association with membership

Number of members: 365 members, 3 corporate members



ASSOCIATION ACTIVITIES DURING 2017 AND TO DATE

In 2017 the Greek Tunnelling Association continued working to promote the environmental, social, technical and economic advantages of the construction and operation of tunnels and underground space.

A new Council Board was elected during the national General Assembly of the 12th – 7 – 2017 for the period between July 2017 – July 2020.

A new and modern website was constructed (www.eesy.gr) and has been in use since the end of 2017.

Three issues of the electronic magazine of the Greek Tunnelling Society were published.

A technical visit was carried out at Thessaloniki Metro on 9-12-2017. Approximately 50 engineers visited the Depot in Pylea which covers an area of 50,000m² and Nea Krini station where they had the chance to see the TBM.

A Memorandum of understanding is being prepared between the Greek Tunnelling Society and Athens Metro S.A. to promote project innovations and the expertise that has been accumulated by Greek Engineers.

The Young Members Group promoted tunnelling news, research results, new projects etc both in Greece and abroad via social networks (facebook page).

An evening lecture on 6-2-2018 was co-organized with i) the ELLINIKI ETAIRIA - Society for the Environment & Cultural Heritage and ii) the Interdepartmental Program of Post Graduate Studies of Auth for "Protection, Conservation and Restoration of Cultural Monuments" for the Eupalinos tunnel at Samos.

CURRENT TUNNELLING ACTIVITIES

Aposelemis Tunnel (Crete)

A 3.43km long tunnel on the Water Diversion Project for enrichment of the

Aposelemis dam reservoir in Crete island. It was constructed using a double shield TBM (4.35m final lined internal diameter). It crosses various geological formations (native limestone, shale and phyllite formations and Dolomite/Limestone), and various faults and fracture zones, large karst caves and zones with gases were encountered. Tunnelling works, which were assigned to INTRAKAT S.A., began in March 2015 and completed in July 2017.

Ionian highway Tunnels

During 2017 four twin tunnels with a total length of 11.2km were completed and became operational along the new highway alignment connecting Rion–Antirion Bridge and Ioannina: The Makyneia tunnel (542m), the Klokova tunnel (2950m), the Kalidona tunnel (1200m), and Ampelia tunnel (900m).

Athens METRO

Since March 2012 the J&P – AVAX S.A., GHHELLA SPA, ALSTROM TRANSPORT S.A joint venture has been assigned the construction of the Athens METRO Line 3 extension to Piraeus. The 7.6km long new Metro line 3 will consist of 6 modern Metro Stations. 6.5km of the tunnels were constructed using TBM. The Metro Extension to Piraeus will serve approximately 132,000 passengers on a daily basis. Tunnelling excavation works are almost completed. Civil works for the permanent lining of shafts and NATM tunnels are in progress.

Thessaloniki METRO

Basic characteristics of the main METRO line include: 13 modern center platform stations arranged along 9.5km long tunnels (with two independent single track tunnels) constructed mostly (~80%) by two EPB - TBMs, and a 50,000m² depot in the Pylea Region. The excavation of the two independent single-track tunnels is completed.

AKTOR ATE was assigned in 2013 the construction of the extension line to Kalamaria which includes 5 stations and 4.78km tunnels. The excavation and lining of the twin single-track tunnels is 65% completed.

Korinthos – Patra highway

The new Korinthos – Patra highway which was fully completed in 2017, includes five new tunnels that became operational last year: Mavra litharia twin tunnel (1200m long each), Platanos twin tunnel (1900m long each), Volimis single tunnel (550m) at the southern branch of the highway, Panormos single tunnel (550m) at the southern branch of the highway, and the Panagopoula twin tunnels (4000m long each).

The four other tunnels, that are all on the Southern Branch of the highway, which became operational in 2016 are: The Chelidoni single tunnel (480m), the Derveni single tunnel (629m), the Aigira single tunnel (800m), and the Akrata single tunnel (300m).

Athens – Thessaloniki Highway (E-75)

The new Evaggelismos – skotina highway alignment section which includes 3 twin tunnels of a total length of 11km became operational since 7-4-2017: T1 dual carriageway twin tunnel (2000m long), T2 dual carriageway twin tunnel (6000m long) which is classified as the longest in Balcan (SE Europe) and Platamonas T3, dual carriageway twin tunnel (2700m long).

Moreover, an upgrade of the Katerini Cut & Cover tunnel is currently ongoing. The upgrade mainly concerns placement of fire resistant panels in order to enhance fire resistance of the structure, construction of new drainage system with firetraps, and signals and ventilation system.

Tithorea – Domokos railway – Central Greece

The project involves the construction of the New 106km long Double High Speed Railway Line Tithorea – Lianokladi – Domokos which deviates from the existing mountainous alignment. The design speed is 160-200km/h. The alignment crosses the Kallidromo mountain with twin tunnels – each 9,038m long – that follow a flat course through the Sperchios river valley and end up at Lianokladi Railway Station. Further to the north it crosses the Othris Mountain with twin tunnels, each 6,380m long. Both tunnels were completed in 2017 and are currently being tested with pilot operations.

Rododaphni (Aigio) – Pspathopirgos (Panagopoula Tunnel) (Infrastructure)

The project involves the construction of the infrastructure for the new 21.5km long double railway line, between Rododaphni–Pspathopyrgos of the Athens–Patras line. The civil works of the Panagopoula twin tunnels were almost completed within 2017 and included tunnelling works approximately 4,800m long per branch, entrance and exit cut & covers and cross adits every 500m.

FUTURE TUNNELLING ACTIVITIES

New Athens Metro Line 4 - Section A "ALSOS VEIKOY – GOUDI" - A €1,6bn

Design and Built Contract. The 13km long, fully automated new Athens METRO line 4, will consist of 15 stations. The project includes tunnelling works, underground stations, station fit-out, mechanical and electrical systems, rail Infrastructure and rail systems. The shortlisted interested parties are:

- The Greek-French consortium of GEK Terna, Vinci and Siemens,
- The Greek-Italian-French consortium of J&P Avax, Ghella and Alstom,
- The Greek-Italian consortium of Aktor, Ansaldo and Hitachi Rail Italy,
- The Spanish-Greek consortium of FCC, Archirodon and Mytilineos.



The Invitation to Tender for the Main (Design & Build) Contract (Stage B) is estimated to be completed by the end of 2018. Planned Construction Period will be 8 years starting – midsummer 2019. The Tender will be conducted in accordance with the stipulations of Directive 2014/25/EU on procurement by entities operating in the water, energy, transport and postal services sectors (E.E.L94/243/28032014) and in line with Greek Law 4412/16. The criterion for the Contract award will be the most advantageous offer, in financial terms, on the basis of a best quality-price relationship.

Underwater road link connecting Salamina - Perama in Attica region – Estimated cost – €400M.

A competitive dialogue process is underway between the preferred three interested parties which include METKA, TERNA, VINCI CONCESSIONS-VINCI HIGHWAYS-AKTOR CONCESSIONS. The project concerns the design, construction, financing, operation, maintenance and exploitation of an approximately 15km long highway which includes an 1.2km long immersed tunnel and three tunnels with a total length of 2km.

Central Athens railway Station – Three bridges area.

The €66M project, which was assigned to INTRAKAT – SIDIRODROMIKA ERGA J/V, involves the construction of a 2.36km long four-track rail corridor, 60% of which will be in a fully underground alignment.

Sminthi – Echinus highway axis

A contract is planned to be awarded shortly for the construction of two bidirectional tunnels approximately 120m long each along the new highway alignment connecting Xanthi – Sminthi – Echinus - Greek-Bulgarian borders.

Immersed road tunnel connecting Lefkada island – Aetoloakarnania

A project concerning the design, construction, financing, operation, maintenance and exploitation of an approximately 4km long highway which includes an 0.6km long immersed tunnel (plus 0.5km entrance and exit). The project is currently under planning.

North Motorway of Crete (BOAK)

A concession project concerning the design, construction, financing, operation, maintenance and exploitation of an approximately 200km long motorway which includes a significant number of tunnels (total length ~20km). The project is currently under planning.

Halkidiki mining project

The Olympiada mine is planned to connect to the factory of Mandem Lakkos through a new 9km long tunnel via which the ore will be transported thus stopping ore movements on trucks through the national road network.

New underground METRO Line 1 between N.Faliro to Piraeus

Conversion of Line 1 (ISAP) section from N.Faliro to Piraeus into an underground structure, with the addition of one new station (Keranis Factory area), unifying, in terms of functions and town planning, the areas of Piraeus currently served by the surface ISAP Line. The project is currently under planning.

New underground Tramway Network to Keratsini – Perama in Attica region

Extension of the Tram Network to Keratsini – Perama, following an underground alignment through a large part of the Keratsini Municipality. The project is under planning.

STATISTICS

1. Length or volume excavated - % mechanized/% conventional during 2017: 90%
2. Amount (USD or EUR) of tunnelling/ underground space facilities awarded in 2017: € 0.00
3. List of tunnels completed: Aposelemis, Mavra litharia, Platanos, Volimis, Panormos, Panagopoula, Makyneia, Klokova, Kalidona, Ampelia, T1 and T2 Tempi, Platamonas T3, Kallidromo, Othris, Panagopoula
4. List of tunnels under construction: Athens METRO extension to Piraeus, Thessaloniki METRO