

# **BULGARIA**

## **ACTIVITY REPORT 2013**

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The Bulgarian Association for Geotechnical and Tunnel Construction is an non-profit organization created in 2010.

The Bulgarian Association for Geotechnical and Tunnel Construction has got 28 corporate members and 27 individual members.

Associate members: Bulgarian Water Association, Bulgarian Association for Trenchless Technologies, Black Sea Coastal Association.

**Partners:**

**Branch Organisations and Associations sector "Railway Transport": Bulgarian Association of Consulting Companies in Railway Construction; Railway Signalling, Automation, Telecommunication and Industry Association; Bulgarian Association for Freight Forwarding, Transport and Logistics; Association of Bulgarian Railway Carriers and Intermodal Operators; Association of the Owners of Private Freight Cars.**

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### Sofia Metro Extension System

Again, during the last year one of the most intensive and interesting was Sofia metro extension. The works were concentrated mainly to the extension of the First metro-diameter (given with thick red line on Fig.1). The construction of two new LOTs included in Stage III of metro development started (Fig. 1, after Sofia Metropolitan JSC) in 2013.

#### LOT 1 – Stage III

Construction of LOT 1 started in October 2012 and will be put into operation in 2015. It comprises 5 km long tunnel section with 4 stations. Completion is planned for 2015. About 60% of the total length of tunnels was completed in 2013. Main structures of metro-stations were also completed at 80%. Tunnel works include 220 m long tunnel carried out by SEM (Fig. 2) and 3.5 km tunnels which were carried by cut-cover method.

#### LOT 2 – Stage III

Construction works started in April 2013. The section is 2.5 km long. It consists of 3 metro-stations and double-track metrotunnels. All the structures are constructed by cut-cover method. Station 16 is combined with parking area.

#### Forthcoming development of Sofia Metro Lines including underground construction

New section, having length of 1300 m, will be started in 2014 (shown in Fig.1 with magenta). Completion is planned for 2015. It consists of double-track tunnel 1130 m long and one metro-station (named MS12). Tunnel will be driven by conventional method (SEM).

The alignment of the third metro-diameter was approved in 2011. Its total length is 15.5 km of which about 8.5 km are planned to be underground structures. Conceptual Design is

ready. Tender procedures for Contractor are expected to start in 2014.

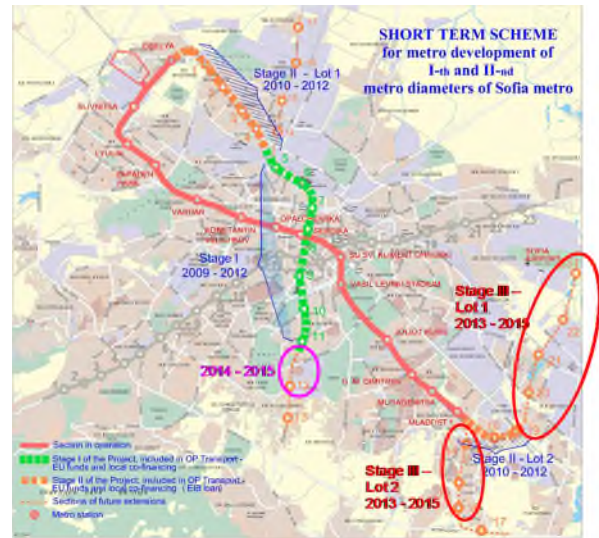


Fig. 1. Short-Term Scheme for Sofia Metro development



Fig. 2. Tunnel 220 m long driven by SEM

#### Struma motorway

One of the major projects in Bulgaria during the next years will be Lot 3 – part of Struma motorway, including Kresna Gorge (Fig. 3). Twin-tunnel 15.3 km long, with more than 100 sq.m cross sectional area of each tube is planned to be built. The comprehensive geological explorations will start in 2014. The tunnel in the Kresna Gorge will take longer period. It expected to be ready around 2020-2021. Work on the conceptual design was divided into several stages. The first one has already completed - specifying the selected



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alternatives (options) and analysis of the technologies for tunneling.

The next stage of work is completion of the actual conceptual design, which will happen in the first half of 2014. This will make possible to start tender procedures for construction of road sections and at later stage – tunnel itself. Another shorter twin-tunnel having length 2.6 km is foreseen to be carried out close to the longer one.



Fig. 3. Struma motorway – Lot 3. Long twin-tunnel (in closed area)