

MINING EQUIPMENT FOR MINES IN REK„BITOLA“



INTRODUCTION

Project description

The procurement of the mining equipment for the mines in REK “Bitola” refer to the following mines:

- Underlying coal series(new mine) “Suvodol”
- Existing mine “Brod – Gneotino”
- Support mechanization for the mines needs

New mine – Underlying coal series– Suvodol

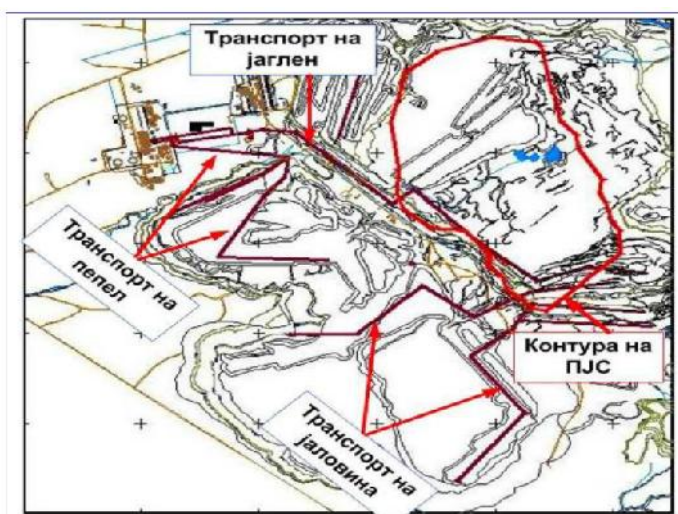


Figure 1. Disposition of SPM CUS in the frames of SPM “Suvodol”



Figure 2. Present state of the Underlying coal series– “Suvodol”

- The area of the Underlying coal series deposit (UCS) “Suvodol” is located within the exploitation field of the “Suvodol” mine and has surface of around 3km², in other words 1/3 of the total area spread over with the main coal seam (around 10km²). The Underlying coal series complex lays under the main productive seam of the Suvodol deposit and in it 1÷18 coal seams are separated. The average depth of the coal seam in the UCS amounts 14,97 m.
- Through analysis and interpretation of the so far performed exploration works for exploration of UCS, as economically interesting two underlying coal seams are separated: the first underlying coal seam and the second underlying coal seam, in other words the main seam of the UCS.
- During the year 2004 detailed geological and geotechnical additional explorations were performed and technical documentation was prepared, during which, the necessary parameters regarding geology, engineering – geological and geo-technical characteristics were taken.
- With this exploration works a geological reserves of 55.000.000 tons of coal were established, out of which the exploitation reserves are around 50.000.000 tones, with stripping ratio of 1: 4,7 cubic meters per ton.
- The technology for exploitation of the Underlying coal series “Suvodol” is performed with continuous ECS(Excavator-Conveyor belt-Spreader) systems with use of the part of the equipment of open pit Suvodol. And after finishing of the coal excavation from the main productive seam a procurement of new ECS system is planned. The coal conveyance that is excavated from the UCS will be done through the present conveyance system that is used in the “Suvodol” mine.

Existing mine “Brod – Gneotino”



Figure 3. – Present state of open pit “Brod – Gneotino”

As an integral part of the Pelagonian tertiary basin, the “Brod – Gneotino” deposit, from geological point of view, bears all characteristics specific for the sedimentation environment of the basin, in other words is similar with the deposits “Suvodol” and “Zivojno”.

The thickness of the individual coal seams, stated in certain drill holes, is characterized with great variability, which ranges from 0,2 to 7,5 m, and it should be noted that this characteristic is typical also for the thickness of each individual coal seam, because it is very variable as in horizontal also in vertical direction of its extension. The cumulative thickness (formed by the sum of the individual coal seams, as calculated from the drill holes data), ranges from 0,40 m. to the maximal 17,20 m. in other words calculated as average about the whole deposit (according to the cumulative thicknesses of the coal seams in the individual holes) amounts 8,57 m., while the relative depth at which the seam of the productive formation is found, is from 7,8 m. to 222,80 m.

The surface coal pit mine “Brod – Gneotino” is opened and in phase of exploitation. With the main mining project, since 2006, as exploitation reserves are anticipated around 34.000.000 tons of coal, with previously determined capacity of 2.000.000 tons per year. The excavation of overburden is done in accordance with the main mining project for opening and exploitation of SPM “Brod – Gneotino” with engagement of continuous technology (ETS systems), while excavation of the coal and intermediate seams overburden is done in accordance with the simplified mining project with application of discontinuous technology in other words cyclical mechanization.

For excavation of overburden two bucket wheel excavator type SRs 2000 and three dragline excavators (ES-10/70 and two ES-6/45) are engaged, while, again, the excavation of the coal and intermediate seams overburden is done with discontinuous equipment i.e. with dump trucks and with hydraulic excavators. For the excavation of the coal and intermediate seams overburden in the daily exploitation of open pit “Brod – Gneotino” external firms -contractors were engaged.

For that purpose as basic necessity for the mines in REK “Bitola” the following mining equipment and support mechanization is acquired:

- Self-propelled conveyor (bandwagon);
- Equipment for continuous conveyance (overburden conveyance system, mobile telescopic distribution station and primary coal crusher);
- Equipment for discontinuous system of exploitation (hydraulic excavators and bulldozers with higher power, trucks – dampers and grader);
- Weight lifting equipment (auto cranes and belt shifters);
- Auxiliary mechanization for maintenance of conveyor systems (shovel loader, combined construction machines, telescopic conveyor belt cleaners);
- Auxiliary equipment for maintenance of the cyclical mechanization (water tanks, fuel tank, truck with low bearing platform and terrain vehicles with telescopic boom for lifting and load haulage).

During of May 2016 year a technical dialogue about the subjected public procurements was announced, and is ongoing a finalization of the tender documentation.

Investments

For realization of this project 64.500.000,00 Euros are anticipated, out of which 55.000.000,00 Euros (in other words 85%) would be provided by credit indebted, and the rest part, in amount of 9.500.000,00 Euros, would be own participation of JSC ELEM .

PROJECT: PROCUREMENT OF MINING EQUIPMENT FOR MINES IN REK “BITOLA”			
Description of the mechanization	Presentation of necessary financial means [E]	Presentation of financial means – credit [E]	Presentation of financial means – JSC ELEM [E]
Self propelled conveyor (bandwagon)	8.500.000,00	7.225.000,00	1.275.000,00
Equipment for continuous conveyance	12.450.000,00	10.582.500,00	1.275.000,00
Equipment for discontinuous system for exploitation	34.900.000,00	29.665.000,00	5.235.000,00
Equipment for load lifting	5.300.000,00	4.505.000,00	795.000,00
Support mechanization for maintenance of conveyor systems	2.530.000,00	2.150.500,00	379.500,00
Support mechanization for maintenance of the cyclical mechanization	820.000,00	697.000,00	123.000,00

The delivery of the mining equipment is expected to start successively, in time period of two years, after signing the contracts for the subject procurements.

Significance of the project

With the procurement of the mining equipment the following benefits would be enabled:

- Extension of the life expectancy of the thermal power plants in REK “Bitola” in the following 15 years, with opening of the coal underlying coal series i.e. the mine “Suvodol”;
- Reduction of the operating costs during coal excavation from “Brod – Gneotino” through procurement of mechanization for discontinuous coal excavation;
- Reduction of the operating costs for engagement of support mechanization by external firms – contractors.