18 MEUR new excavator contracted to Krupp, erection on time in Kolubara mine basin company

On the prefabricated site in Kalenic, the turntable heavy 118 tons was built on under construction of the wheel excavator in assembly 740 L. The “Metal” employees at the site, the main subcontractor German “Krupp”, this work was done with the help of four cranes, two of 60, and two other of 100 tons.

The turntable for a new wheel excavator, which will be given in use to mine “Tamnava-West field” during next year, arrived on the plot in early July from the three parts that were welded, from the “Metal” production facilities.

According Goran Kojovic, site head, operation on the pole has started. One part was welded and welding of parts two and three has started, which will be completed early next week. Until the completion of this work it will be worked on for 12 hours.

Before pole lifting it is a considerable number of works on the platform, and there is lack of some elements that must be installed. The pole assembly is underway and lifting is expected soon.

So far, on the excavator, which is financed by the EPS funds and whose value is 18.7 MEUR, has been mounted 30 percent, and 10 percent of equipment is in the preparation.

“Metal” is technically and staffed best-equipped metal company in the country and the region, and the work quality on the installation of this excavator is another indication of the importance of “Metal” return under the auspices of MB “Kolubara”. By “Metal” return is practically enabled the continuation of the company work, as well as the stability and continuity of production in Kolubara open pit mines, which guarantees the safety of coal and electricity production.
Serbian energy balance is primarily managed by thermal power plants producing almost 70% of electricity coming from lignite coal. Biggest coal mine Kolubara prepares for modernization and investment cycle. One of the most important investment in the future in Serbia will be opening of the lignite coal open pit mine “Radljevo” in the Kolubara coal basin, said Igor Smiljkovic, deputy director for commercial affairs in MB “Kolubara”, during presentation on the Third International Conference on the Mineral resources.

Mining works on the open pit mine “Radljevo” will begin in 2014. and will last by 2040. The initial coal production will be five million tons, while the maximum quantity should amount to 13 million tons on the annual level. The value of the whole investment is about 700 MEUR, and it is planned to dig up near 355 million tons of coal - said Smiljkovic during the presentation of the future mine.

Speaking on the work dynamics Smiljkovic pointed out that for the 2014th was planned beginning of auxiliary dragline excavators work and starting draining and households' relocation that are in the territory of Ub. At the end of next year the overburden system will be put into operation.

To the Third International Conference on the Mineral resources “The driving force of economic development” attended a Roman Waschuk, Canada’s ambassador, Pekka Orpana, Ambassador of Finland, the management representatives of domestic and foreign mining companies, ministries and a number of experts in the field of mining.

On the conference was discussed on the mining sector contribution to the economic recovery and the overall development of Serbia, the new policy of the Serbian Government in the mining sector, the country’s mineral wealth and new projects, as well as the funds availability to finance mining projects.

The mining basin “Kolubara” takes a very important place in the plans for the mining development as the largest coal producer in Serbia, on whose basis is produced about 52 percent of the country’s electricity. In the coming years MB “Kolubara”, with investment in the opening of new open pits mines will remain the stability holder of the state electric power system.
Geological and exploitation coal reserves of the western part of Kolubara basin

Mr. Miodrag Kezović paper was presented at the Sixth International Conference on Coal, held from 2nd to 5th October, at Zlatibor. In this paper, the emphasis is placed on pronounced stratification of some deposits, and thus the occurrence of different quality coal. The rational exploitation of different quality coal involves selective mining, the introduction of homogenization and coal quality management for the needs of thermal power plants.

This paper describes two ways of treating the total explored reserves of the western part of the Kolubara basin. The first way considers the state of total reserves of the western part of Kolubara basin, including the Fields D, G and Veliki Crljeni. As explained by the Author, coal (of good quality properties) from the Field Veliki Crljeni has been mixed with coal from Tamnava-West Field from the start, and as such, the coal has been transported to the TPP Nikola Tesla B, in Obrenovac. The same thing will happen with the coal that is to be excavated in the area of Field G. Another view refers to the condition of the total reserves of the western part of the basin (Tamnava-West, Radljevo and Zvizdar) according to the official division.

Mr. Kezović MSc, in this paper, presented also the state of coal reserves of the western part of the Kolubara coal basin. These are results of previous research, research methods, the implementation of research methods (geographic position, geo-morphological characteristics, hydrography and climate characteristics, geology of the basin), as well as the display of research results. Coal mining in the Fields G, Radljevo-North and Zvizdar has not yet begun. Coal exploitation in OPM Tamnava-East Field is complete. From 1977-79, by the end of exploitation, total realized overburden production amounted to 237.450.604 m³ and 235.426.078 tons of coal. The annual coal production (late 2012): OPM Veliki Crljeni about 5.450.000 tons of coal and Tamnava-East Field around 13 million tons of coal.

Based on research conducted by Mr. Kezović, MSc, it can be concluded that the coal from the western part of Kolubara basin must be mixed with the coal from other fields in order to obtain the required/requested quality. According to the author, this specifically refers to the deposits of Tamnava-West and Radljevo that have the worst quality characteristics of coal, and on the other hand are the deposits that have the largest geological and mineable coal reserves (about 75% of coal reserves are located in these two deposits).
In MB “Kolubara” overhauls of overburden systems are underway, Excavators are preparing for winter

Regular annual servicing and replacement of worn equipment are guarantees of the smooth production on four “Kolubara” mines for the next season. Despite of difficulties in connection with the components supply, most of the work is carried out as it was planned.

During the hottest summer months, besides defy almost unbearable weather conditions and maintain a high level of production, employees on four mines of Mining Basin “Kolubara” need to carry out a regular annual equipment maintenance and renewal to ensure its reliable work in the season that comes. Repairs that are carefully planned, both technically and financially, are conducted out the heating season.

Experts who deal with these issues for years say that, especially when it comes to equipment that has been used for decades in exploitation, the preventative maintenance is necessary condition for system stability, which produces 30 million tons of lignite per year.

This year’s investment overhauls have begun in early April, when officially started the excavators and stackers servicing on coal systems. Besides the usual checks and replacement of worn components, on the “rodent 7” has been replaced a complete bucket wheel reducer, which due to outdated technology in previous years caused numerous delays in the work of one of the largest mine machine. In the same “jobs package”, on the “rodent 1” on the Field “B” for the first time after installation, were replaced paths by which travel wheelchair for working bridge lifting. The first phase of the overhaul was completed in the second half of July, when were done all tasks that had been scheduled on the machines that dig coal.

The servicing of overburden systems is underway, precisely of the second ECS (excavator, conveyor, and stacker) on the Field “D”. On this system is checked and revitalized the equipment of “rodent 3” and it is scheduled that works be completed on 23rd August. After that, it will be worked on the First A system on which “rodent 4” digs overburden. The First and Second ECS system servicing of “Tamnava-West field” is also underway. A significant part of the job is left for the second half of September, when it is turn on investment repair of the Fifth system on the Field “D”, which is the largest overburden system and
whose operational readiness is directly dependent on the largest coal mine “Kolubara”. On this system the “rodent 9” and “stacker 6” dig, on which this year is provided an extraordinary job. Namely, because of the impossibility of further supply of reserved components and after all other revitalization possibilities were exhausted, it was done the reconstruction project of the stackers’ control system. This work was designed and a tender for the equipment procurement was completed, but given that one of the bidders appealed, the process has been returned to the procedure so that the new components installation is suspended until the situation formally is resolved.

Radovan Maksimovic, coordinator of overhauls planning and electric system maintenance on MB “Kolubara”, despite the difficulties, is satisfied with the work done so far.

- We do everything that we can that ordered equipment arrives in the warehouses on time, because without it we could came to the risk that one of the most important mine system would be unable to respond to challenges in the coming winter season - said Maksimovic. - Besides delays in the mentioned work, on the regular weekly meetings at which supervisors and contractors summarize what was realized from the planned activities, it was noted that, in the case of carbon systems, defect list was filled by almost 100 percent. Even though the funds allocated for this purpose was limited, we succeeded to implement most of the planned activities and to prepare equipment for the new production challenges by diversion and maximum use of “Kolubara Metal” capacities.
Kolubara mine company rent fees obligations toward state and local communities increased three times

The coal and overburden production is the primary task of the Mining Basin “Kolubara”, which it successfully achieves, but getting the “black gold” nuggets is not easy at all, what staff and management of this company know the best. Business expenses, in addition to the cost of materials, fuel, electricity, amortization, maintenance, and employees’ salaries also include a number of obligations including those to the state which are paid in the form of property tax obligations, land use tax obligations, tax obligations for environmental protection, mineral resources utilization, water fees and other similar fiscal benefits. These obligations belong to the costs category on which Economy Company cannot influence, because it is an expenditure which height regulates Republic by its decisions, and a significant part also the local government. That these are huge sums show the fact that in total business spending these obligations assume more than 6 percent.

In the past 2012. the obligations to the state recorded a significant growth and amounted about 23,245,614 MEUR. Compared to 2011. they were higher by one third, or about 34 percent. The largest part of the obligation to the state refers to the rent or fees for the mineral raw materials use and they amounted over 10,263,158 MEUR. This rent amount compared to 2011. increased by nearly 140 percent. The reason for this drastic increase lies in the fact that at the end of 2011, by the new Law on mining and geological researches among other things, the foot rate, which was applied to the revenue realized from the coal sale, increased from one to three percent, which is an increase of 300 percent. The effects of this increase showed in the 2012. By the new law, in addition to the existing charges for the mineral resources use, there is a new item in the form of fee for the nonmetallic raw material use for construction materials (fee for crushed stone, quartz sand and construction gravel). Otherwise, besides rents, significant sums in the amount of 9,649,123 MEUR were earmarked for the construction land use, property tax was 912,281 MEUR, while fee for environmental pollution was over 1,491,228 MEUR.

Since the beginning of the year by the August, in the Mining Basin “Kolubara” came a total of 73 solutions for various taxes, and with those
who will just arrive, by the end of this year the total debt will be around 21.842.105 MEUR. Given that part of the obligations (about 8.771.923 MEUR) imported from the previous 2012., despite the payment of more than 11.929.825 MEUR by the beginning of August, the expected total debt for "Kolubara" calculated obligations from 2012. and 2013. still are over 18.421.053 MEUR. Numerous obligations that Mining Basin "Kolubara" has in different areas of its activity, undoubtedly affect the liquidity of the economy company, and because of that, one of the business goals in the future is economic and financial consolidation, with a focus on securing a higher level of liquidity.

There are delays

In the 2013. the rent fee will be approximately the same as in the last year, and according to the estimates will be 10.263.158 MEUR. In the case of rent paying, part of payment of 50 percent goes to the Republic and the other 50 percent goes to the municipalities on whose territories the coal exploitation is done in proportion to the quantities which provide the EPS energy balance from these territories. There is a certain delay in settlement of these obligations. According to data from the relevant Ministry of Environment, Mining and Spatial Planning, from the total of 13.157.895 MEUR that is owed for the rent, 7.105.263 MEUR is the debt to the Lazarevac municipality, about 5.789.474 MEUR to Lajkovac and 412.281 MEUR to Ub.
Serbia coal for energy balance, The great importance of Kolubara coal

Since Kolubara mining basin produces 30 million tons of coal per annum, it maintains the stability of the Electric Power System of Serbia. Various researches have been conducted to examine quality and properties of Kolubara coal.

At the VI International Conference “Coal 2013”, held in early October at Zlatibor, Mr. Miodrag Kezović, Head of the Department of Operation Geology at the “Tamnava-West Field”, presented the paper on properties of the Kolubara coal. The aim of this paper is to provide scientific and professional data on the genesis of the Kolubara coal, composition and properties of creating coal-bearing sediments, coal seams and also the very coal deposit.

The importance of the Kolubara coal for the electric power system of Serbia is shown in the fact that Kolubara annually produces 30 million tons of coal, representing nearly 75% of the total production in Serbia, which is 17 billion kWh, or 52% of the total electricity consumption. For the last 50 years, the coal from Mining basin “Kolubara” was the subject of study of numerous researchers analyzing the paleogeography and sedimentation conditions, coal creation processes, coal petrographic characteristics and the possibilities of its application. Analysis of data obtained by different research methods provided complex consideration of coaly materials of Kolubara basin.

Paleogeographic evolution of the studied area was marsh-marine in character. Kolubara represented morpho-tectonic depression, or the zone of intensive subsidence, as evidenced by the great thickness of the deposit layers. Under the influence of hot and humid climate, lush wetland vegetation had developed in the area of about 530 km², dominated by large coniferous trees that are most important for the creation of the Kolubara coal. Analyzing the petrographic composition of the Kolubara coal, it has been discovered that it consisted of xylite and earthy, marshy coal. Chemical researches have shown that the average moisture content was over 45%, more than 17% of ash, about 0.5% sulfur, and the lower calorific value amounted to about 7,500 kJ/kg.

In the area of Kolubara mining basin, two strips of coal-bearing deposits evolution are most notable - North and South, and the coal seams are separated by clayey-sandy-gravel deposits.

Based on the qualitative properties of the Kolubara coal, in addition to burning in thermal power plants and the consumers’ use, the coal can be used to obtain products of higher calorific value by undergoing the processing and enrichment process.
Science in the service of selective coal excavation in Mining Basin “Kolubara”

Experts of Mining and Geology Faculty of Belgrade and MB “Kolubara” identified and got the scientific community familiar with the methodology in the selection of excavators for the future mine “Radljevo”, where the coal will be excavated selectively for the first time.

At the VI International Conference “Coal 2013”, which was held on 2nd to 3rd October, at Zlatibor, the experts of Mining and Geology Faculty in Belgrade and MB “Kolubara”, prof. Dr. Vladimir Pavlović, Prof. Dragan Ignjatović, Saša Stepanović and Branko Petrović, presented their papers on the methodology of selection of the excavator for the selective coal exploitation.

Analyzing the technical and technological capabilities and structure characteristics of the vital parts of the so-called standard and compact bucket wheel excavators, prominent experts came to the conclusion that the compact giant colossi of shorter service life were somewhat cheaper when purchased, but the cost of their maintenance was much higher.

Interestingly, compact excavators when digging coal make 20 percent higher production costs on average than conventional excavators.

Technical and economic analysis showed that the selective operation of grade B excavators in terms of technology, have certain advantages over the so-called compact excavators for the working conditions that exist in the OPM “Radljevo”. In fact, this mine differs from other mines by very large stratification of coal and the need for selective operation. It is planned to perform selective coal mining and interburden excavation by means of five grade B excavators. Hereby, we have in mind the experience in the operation of grade B excavators in Tamnava mines and the necessity of unification of mining equipment.
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