

## The Mining Industry on Treshold of the XXI Century (16th World Mining Congress, September 12-16, 1994 Sofia, Bulgaria)

The 16th World Mining Congress took place this year from 12th to 16th September at the National Palace of Culture in Sofia. The motto of the Congress was "The Mining Industry on the Treshold of the XXI Century". The Congress was held under the patronage of the President of the Republic of Bulgaria Dr Zhelio Zhelev, who personally greeted the delegates on the opening day. 452 delegates from 45 countries and 730 delegates and guests from Bulgaria were present at the Congress. 271 reports from 37 countries were discussed at the plenary sessions, and 69 — at the round table sessions, 155 participants were taking part in the discussions. The most representative delegations were the ones from Russia (55), Roumania (53), Germany (50), Ukraine (44), China (14) etc.

The work of the Congress was organized in 9 main sections.

A. The Mining Industry on Threshold of the XXI Century.

B. Ecological technologies for the mining of mineral resources, facing stones and building materials.

C. Tendencies in the development of the means of mechanisation, automatisisation and management in the mining industry.

D. Trends in the promotion of resource-saving technologies in the mining industry (complete extraction of the useful components, utilization of waste, reduction of material, energy and work expenses).

E. The role of the coal industry in the production of electric power; problems and solutions.

F. Training and education for the mining industry — requirements and tendencies in the protection and safety.

G. Problems of the current situation and economy, resulting from the geographical situation of mineral resources and distribution of the population.

H. Problems of mining thermophysics.

I. Problems of the mechanics of rocks.

These basic problems were discussed in the context of the current aggravated conditions for the mining industry: the continuing stagnation in the mineral resource sector as a reflection of the world economic recession, a drop of the efficiency of the mining industry as a consequence of the worsening conditions for mining and the decrease of the average quality of the mined raw materials; the increasing negative interference with the environment; a crisis in the economies of the Central and East-European countries. In the direction of overcoming these problems the Congress defined the following trends:

1. Transition to modern environmental and resource-saving technologies by improving the means of mechanisation, automatisisation and management on the mining industry.

2. Increasing importance of the coal-mining as a source of energy.

3. Increasing requirements for the training of the experts in view of the new technologies and improved labour safety.

Strategies for the restructuring of the mining industry in formation socialist countries were discussed. The transition to market economy, combining price liberalization and drastic decrease or complete withdrawal of assistance and subsidies from the states and delaying of privatization has intensified the old problems and created new ones. (G. Shushulov, I. Shushulova, V. VeleV, Bulgaria)

The analyses of the state of the coal-mining in the world outlines two tendencies: (1) the current world tendency of decreasing of production after the peak year of 1989 with a long-term cyclic model of opening and closing of coal mines; (2) increasing of the importance of coal in the world energy balance as the most widely distributed and the cheapest energy resource. So, while the traditional industrial countries in Europe and North America turn to ecologically pure production, forcing their governments to assist the transition in order to alleviate the consequences of the reduction of work places, the former central-planned economies face a drastically acute transition. (K. Kaizer, P. Moor, Great Britain; I. Gavlik, V. Suvala, M. Kudelko, Poland). As far as Bulgaria is concerned, the Prog-

ramme for the Development of Coal-Mining until 2000 includes increasing the workload of mining capacity, concentration of mining in the deposits with favourable geological conditions and closing of pits with unfavourable characteristics. (D. Pavlov, Bulgaria).

In case of absence of financial sources for investment within the country, concessions are a possible solution for the development of the mining industry, which, however, requires respective proper legislation and a procedure of carefully considered choice of concessioners and mines to be offered (Fyust, A., Katon, G., Hungary).

In the scope of mining, the efforts of the Eastern European Countries for integration with the European Union have been supported by the work of EUROMINES. The proposals in different countries vary from establishing of jointventures, presenting of know-how or management of specific projects to more radical ones like possibilities for foreign companies to buy mining companies. In view of the situation in Bulgaria, experts of EUROMINES recommended potential cooperation for the development of new deposits of industrial minerals as barytes, bentonite, dolomite, kaolin, marble, perlite etc., commercial cooperation for the marketing of bauxite and aluminium. There are opportunities for the financing and development of copper, zinc, lead and manganese production (V. Nikolettopoulos, Greece).

In the sphere of training and technical assistance projects as TEMPUS, as a part of the general PHARE programme, and T.A.C.L., managed by the British government, prove their practical utility and can be used in future by relying on the experience of the developed countries in the evaluation of technological, financial, marketing and ecological factors in the business with minerals (D. Potts, K. Greenwood et al., Great Britain).

The mining specialists took into consideration the results of the United National World Forum for Environment and Development, held in 1992 in Rio de Janeiro. An emphasis was put on the promotion of ecological technologies for the mining of mineral resources and reclamation of landscape; topsoiling, regrading, backfilling, revegetation etc. In addition to these, in open-pit mining, new possibilities are sought for the decrease of harmful emissions and influence on the water balance.

Experts from "Lausitzer Braunkohle AG" Inc., in close cooperation with Bulgarian experts, presented a project for the recreation of the "Maritsa-Iztok" coal basin. (E. Angelov, Bulgaria, K. Hege, Germany). The same company showed interesting technical solutions in the field of protection and recreation of the environment at the exhibition "Earth to Rent" in the "Earth and People" museum in Sofia.

A number of bilateral and multilateral business meeting took place and many business contacts were established at the same time as the main work of the congress. 41 companies from Austria, Bulgaria, Germany, Italy, Roumania, Sweden and Switzerland were represented at the technical exhibition at the National Palace of Culture on an area of 531 sq. m. The exhibition of the German company for heavy mining equipment "Westfalen-Beckorit" in Bobov Dol attracted a lot of attention. 30 delegates took part in the technical trip Sofia-Pleven-Stara Zagora-Plovdiv-Radnevo, "Maritsa-Iztok"-Panagyuriste, "Assarel-Medet". One day trips took the guests to the geological deposits in Kremicovtsi, Bobov dol, Eliseina, Madan and Zlatograd.

In the closing talk of the Congress, Prof. Todor Stefanov, Deputy Chairman of the Bulgarian National Organization Committee underlined that. The 16th World Mining Congress fulfilled its aims and tasks. The scientists put forward their views on the basic problems of the mining industry, these problems being not only geological, engineering and technical but also economic, environmental and social. Today, more than ever, there is awareness of the complexity of the problems of mining and that became evident in all discussions. In spite of the fact that the work of the Congress was organized in 9 separately functioning sections, the interweaving of subjects and problems, both general and specific, created an interdisciplinary approach to the problems, uniting geologists, engineers and economists in the search of solutions.

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