

TOWARDS SUSTAINABLE ORE MINING IN CENTRAL EASTERN EUROPE

- THE CONTRIBUTION OF AN INFORMATION NETWORK ABOUT MINING ENVIRONMENTAL TECHNOLOGIES

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Abstract: Ore explorations are closely related to mining industry. The European mining industry faces increasing challenges to meet the stringent environmental requirements and to convince the local communities over the need and benefit of its existence. To perform this task an improved information network is needed. In this network mining professionals and environmentalist should find common language and platform to discuss the benefits and hazards of mining. The OMENTIN projects aims to establish and develop this platform.

Keywords: ore mining, sustainability, environment, Carpatho-Balkan

Introduction

No human society of developed countries may live without the use of metals, which surround us in form of wide diversified products, from cars to CD players. The growing use of metals runs parallel with the growing concern regarding environmental impacts of ore mining, and tendencies to restrict or completely ban this industry.

Ore mining exploits mineral resources, which are replaced by explorations. Geologists run the explorations. Less ore mining means less explorations, less research opportunities, less jobs for those who work in explorations. This is the chain, which links the geologists with the long-term sustainability of ore mining in Europe.

Ore mining and environmental problems in the Carpatho-Balkan region

Most of the countries in the Carpatho-Balkan (exceptions are Austria, Greece) were part of the so-called Socialist block. In these countries metals were of strategic importance,

which has made the questions of environment secondary to ore production. Mining industry was in many cases major source of pollution.

In the 1990s these countries changed their political structure. These processes have also altered the importance and weight of the mining industry. Political changes progressed parallel with economic changes. Mining suddenly lost the special economic benefits and exposed to internal and external market competition, mines became uneconomic and have been closed or put to care and maintenance. The ore exploration programs have also stopped and lost financial background. In the other side, new mining laws have permitted the participation of foreign capital in the mineral explorations and mining, and these foreign companies have started new exploration program on the grounds of the results obtained by the works done during the Socialist times. Mining and exploration gained new significance in Albania, Bulgaria, Romania.

Consequently, abandoned waste dumps, marginally economic mines, and new installations in old infrastructural environment had to face with growing requirements from the environmental and natural protection. The result was growing number of environmental accidents (like Baia Mare, Borsa in Romania, 2001), and latent pollutions (like Veles smelter, Macedonia, 2001). The environmental accidents triggered continent-wide protests and campaigns, which affect not only the plants in question, but also the whole industry.

We believe that understanding of ore mining environmental technologies can help to eliminate these concerns and also to raise public awareness, which would lead to a better long-term environmental management of the ore mining industry. To improve this understanding an information project, named OMENTIN was proposed in the EU5 framework and accepted in 2001.

The objectives of the OMENTIN project

The OMENTIN (Ore Mining and Environmental Technologies Information Network) is a 3-years project in which mining professionals, geologists, environmentalists work together in assessing and evaluating and explaining hazards linked to ore mining. The project was started after the Baia Mare and Borsa environmental accidents.

The participants are a consultant company (Geonardo, Hungary), universities and related research centers (University of Leoben, Austria, Universitate du Nord, Romania CENTEK, Sweden), and an independent environmental foundation (Regional Environmental Center). The team of the Norwegian NTNU (University of Trondheim) has later joined to the group. There are mining professionals, individuals and organizations, which explain, interpret mining related data. There are hundreds of environmental organizations, which interpret the same mining-related data. The two groups use different language and arguments. Omentin aims to establish the cooperation of environmental and mining experts enhancing objectivity of this information.

Summarization the state of the art in mining is one of the first objectives of our working program. Compared to other industries, mining technologies have one thing in common: the large dimensions. This refers to the trucks used in ore haulage, but also to the consumption of hazardous or dangerous technological materials, chemicals. Such contents and quantities may cause serious environmental pollutions if not treated properly.

A review of environmental regulations, as second objective, helps to understand the legal and social aspects of these technologies.

The third part of the work program deals with public awareness. Public awareness is a term, which has got no exact definition. Awareness is needed to understand industrial techniques, accept its existence in our surroundings, and enforce the mitigation of its environmental effects. It also means preparedness to deal with the problem if it occurs.

The final part of the work program covers the evaluation of the Baia Mare accident. The evaluation aims to revise the consequent measures rather than the causes of the accident, which were studied in details previously by other groups. (Bersgtrom and Bodo 2001).

Tools, working methods used by OMENTIN

The Internet website of the project. www.omentin.org is active and periodically refreshed since the starting date of the program.

The ongoing events, information about the progress of our works, new contacts, etc are published through our quarterly Newsletter, which is electronically distributed among the environmental groups and mining professional of growing number of countries.

On-line workshops are being organized to discuss events, which have actuality, like the publication of the Cyanide Code for the Mining Industry.

Technical publications are prepared which review the ore mining industry, waste management methods, environmental regulations related to mining.

Popular science publications are released, which help the understanding of several mining terms as well as risks and hazards related to mining.

Workshops are planned to train environmental NGOs about mining related environmental risks.

Finally, a wide cooperation of interested partners, from both the environmental and the mining sector is being organized to manage the network after the 3-years EU financed period of the project.

Sustainability of ore mining in the region

The ore mining has significant share in the national economies of Yugoslavia, Bulgaria, Macedonia, Albania, and Greece. The Carpatho-Balkan region has outstanding ore resource potential in the European continent, with large-scale exploration projects in Romania (Rosia Montana, Au, Rosia Poieni Cu), Greece (Sappes, Viper, Au), Bulgaria (Krumovgrad, Au).

Sustainability means to exploit the resources without damaging the future generations living environment and opportunities to access to the natural resources. Both ends of this sentence are important. Exploit natural resources is not a pure economic question anymore. Instead, a complex of environmental, social, technical questions have to be answered positively to allow thinking on the economy of a successful ore exploration project.

The introduction of stringent quality assurance methods during production, replacement of the out fashioned mining and processing equipments are the technical pre-requisites of the future environmental sustainability of ore mining in our region.

Openness and public release of all relevant environmental information are the other requirements to achieve social and political sustainability of ore mining. This is perhaps a harder and more time consuming tasks than solving technological problems.

The ore geologists can play important role in solving the technological, environmental and social problems. Our experience, which is an alloy of earth sciences and engineering technologies, could serve as tool to create common language for technologies and environmentalists in conflict over mining issues.

References

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