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## **ECOLOGICAL AND ECONOMIC ASPECTS OF RESOURCE PROVISION OF MINING ENTERPRISE**

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Mining companies use ore reserves incompletely, that is due to, on the one hand, unfavorable geological conditions of ore deposits occurrence, on the other – the low and slow-performing solution for complete and integrated use of existing reserves.

The problem of resource provision on mining enterprises may be partially solved through using production and consuming wastes. The biggest volumes of wastes are formed on enterprises of mining and enrichment industry. These wastes may be used on their mining and processing companies (MPC), which increased the level of commercial elements extraction.

While very low effectiveness and slowly solving of problems belonging to absolute and complex using of mineral products deposit, our country lose a significant amount of natural recourses for producing products. Even in process of stripping and system of deposit projecting are provided mining loses of iron ore reserves on some mining horizons at 0,8...8,2%, although actual loses are much bigger, because low-metal content ore in final pit boundary often extract as stripping soils.

Imperfection of deposit stripping schemes, transport schemes and systems of mining, technologies of ore processing and significant level of depreciation in active part of fixed assets in deepening open pits and mines complicate providing of production processes with iron ore. This causes an implementation of measures for providing an operation reliability of mining equipment, necessary fund-time of its working, its size and composition of production areas. That is why the planned production program of MPC must be resource-reasonable, i.e. definition of its production capacity providing, labor providing, material and investment resource providing. For capacity maintenance should be viewed such measures for providing necessary volumes and quality of iron ore:

- measures for liquidation of “bottle necks” during planned year;
- necessary quantity of equipment or its changing for more productive;

- redistribution of operations between some groups of technological equipment and between production processes;
- possibility of increasing quantity of shifts for equipment or buy that limits production.

One part of measures mentioned above is in the strategy plan of enterprise development on the level of current problems, the other part is assumed in the current plans, based on both changed conditions of functioning and production organization. For example, a “bottle neck” of Tsentral'nyy MPC still stays stripping operations and also high production costs. For improvement this situation it is planned modernization and restoration mining and transportation techniques and crushing-and-dressing equipment. Processes that are related with rising operational efficiency and, namely, program “lean production” are implemented in the enterprise.

Within this program, teams of continuously improving are created, which develops measures of detections and removal of “bottle necks”, seeking for economical reserves.

During work of mining enterprise with high productivity, iron ore reserves in out of project open-pit boundary mined in a short-term. This leads to shortage enough time to recoup technological equipment by itself, physically or moral depreciation, and caused rising of production costs. It means that too high level of productivity have the same negative effects.

Resource providing of production – is an important factor of product competitiveness for enterprises of mining industry. Companies try to stimulate creation and realization of investment projects of equipment modernization and technologies with the aim to reduce power consumption of operations in mining and processing production. In 2010 – 2014 years the basic way of modernization was: reconstruction mining and transportation equipment for increasing of commercial product quality (iron-ore concentrate, agglomerate, iron-ore pellets); construction of blocking for tailing dams and dumps, recycling water supplying and complex ecological measures.

The problem of the greatest satisfaction of consumer demand on iron-ore products (IOP), leads to the problem of excessive accumulation of different wastes of metallurgical industry in Ukraine, especially of mining industry. In general, near 18% of waste from coal mining and iron ore production, 10% of smelter slags are created each year in the country, but are utilized only 20 – 43% of its annual volume. By order [1], it is necessary to implement till 2020 year an ecological and safe technologies of mining operation, and also obligatory recultivation and ecological rehabilitation of territories, that was violated as a result of production

activity, in particular, to adjust size of the recultivated areas by 2020 year to 4,3 ths. hectares.

It means that for exploitation and revision of deposit it is needed to justify and implement technological complexes of mining operations, which will be turned, primarily, on fullness extraction iron ore materials from the subsurface resources, and high level of its usage in the process of production IOP. Such approach will contribute for improving of environmental conditions of mining enterprises and nature in mining region.

Mining companies and agglomerating plants have a significant influence on the environment (emissions of pollutants into the air, sullage, large-scale blasts in open pits, seismic load, mine drainage waters). Annual volumes of storage stripping soils are 70 millions m<sup>3</sup>, including processing wastes and draw rocks – about 52 million tones, disturbed soils more than 33 ths. hectares, 100 hectares from which are recultivated each year. Examples of main ecological measures, which are predicted by enterprises of mining industry on short-term perspective, are presented in work [2]. Any of measures, that increase the fullness of usage of ore reserves in deposit, will decrease the mentioned above volumes of violation of the environment.

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