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## DEVELOPMENT OF FINANCIAL AND ECONOMIC TOOLS OF THE STATE MECHANISM OF USE OF BOWELS IN UKRAINE

The analysis of development of mining branch of Ukraine is made and essential ecological-economic problems are revealed. Necessity and expediency of introduction of technologies of complex use of bowels is proved. Benefits from use of these technologies from the ecological, social and economic points of view are shown. It is offered to develop financial and economic tools of a the state mechanism of use of bowels with the purpose of its perfection.

Natural resources, first of all ground and mineral-raw, at their rational use, become a basis of economic development of the state. Ukraine belongs to regions with high a level of a saturation mineral resources (about 20000 deposits with 111 kinds of minerals) and significant volumes of their involving in the economic reference (industrial value 96 kinds of minerals have). Coal is one of the major mineral resources for economy of our state. Among the general resources of mineral organic fuel on coal it is necessary from 65 up to 90 % depending on methods of an estimation. On economically advanced and less developed countries it is necessary approximately 540 billion tons of conditional fuel, including 2/3 of them makes coal. In structure of fuel and energy balance of the world coal makes 31 % [3].

Coal plays a huge role in global industrial development since XVII century. It provided a power basis of the first industrial revolution. In the beginning of XX century coal was the basic energy carrier - global requirements for energy for 1913 were satisfied due to coal almost on 75 %. After the second world war the share of coal in general in economically advanced states made consumption of the basic energy sources 3/5. Opening and development of the big deposits of oil in the Near East has caused inflow of cheap fuel on the world market and has led to to reduction of coal output - densities in general consumption of energy has decreased in the Western Europe to 21-23 %. Within last decades there was a unreasonable reduction in a role of coal as most important and stable raw material on stocks for manufacture of energy. The significant rise in prices on oil and natural gas recently predetermines increase of a role of coal in fuel and energy balance of the majority of the advanced countries, including in Ukraine where 95 % of all stocks of organic fuel are made with coal.

According to approached estimations stocks of coal on the Earth are made 10 billions tons which 3/4 fall to the countries CIS (4400 billion tons, by the USA and Chinese People's Republic (on 1570 billion tons). Though it is much more than coal (67 %), than oil (18 %) and natural gas (15 %), its stocks are not boundless. In 1990th years global consumption of coal has made more than 2,3 billion tons one year. As against consumption of oil, consumption of coal has considerably increased not only as in industrially advanced countries, but also in developing. Under forecasts of stocks of coal should suffice for 420 years. But, if consumption will grow present rates its stocks will not suffice and for 200 years.

Ukraine takes the eighth place on volumes of the reconnoitered stocks of coal [1]. Geological stocks of the country make more than 120 billion tons, that in recalculation on oil in 1,5 times exceeds the greatest stocks of oil of the Near East [2].

In Ukraine stocks of coal are rather significant - 117,3 billion tons, industrial stocks on working mines make 6,5 billion tons of them:

- power coal - 3,5 billion tons;
- coked coal - 3,0 billion tons.

Therefore the coal direction for Ukraine has no alternative and is the guarantor of maintenance power and, accordingly, economic independence.

The most part of a coal mining falls at the enterprises Donetsk (45,5 %), Lugansk (34,2 %), Dnepropetrovsk (15,3 %) areas.

Last years in the country the tendency to decrease in volumes of its extraction is observed - since 1990 for 2008 the coal mining has decreased more, than twice (fig. 1).

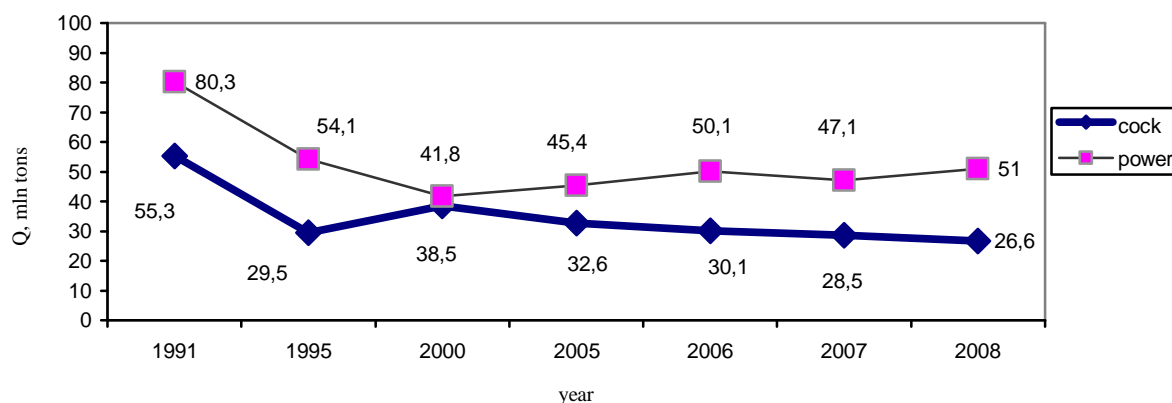


Figure 1 - Volumes of a coal mining in Ukraine

Thus, the tendency to reduction in volumes of a coal mining and, accordingly, to increase in deficiency of this kind of fuel is observed. Especially shortage of fuel was displayed at the enterprises of a mine-metallurgical complex - the basic consumer coked coal. Deficiency is compensated due to import - about 9 million tons coked coal and 2 million tons of coke. Power also for the first time for last years in 2007 imported 245,5 thousand tons of coal.

Reduction in volumes of a coal mining is caused by significant deterioration of the mine equipment (near 80 %), that results in backlog in preparation new clearing working faces and start-up of new longwalls. Use of the worn out equipment promotes increase of breakdown susceptibility and pollution of the surrounding natural environment. Significant volumes of financing are necessary for the decision of a problem. The state every year increases the financial help:

- in 2006 - 4271,8 million grn.;
- in 2007 - 5864,8 million grn.;
- in 2008 - 7100 million grn.

By results of audit of accounting chamber of Ukraine the amount of public funds that falls at 1 ton of the extracted coal, in 2007 made 36,7 grn., and in 2008 - 42,6 grn. (in the state budget of Ukraine for 2008 for this purpose it has been incorporated more than 3,8 billion grn.).

Despite of budgetary grants, the coal branch remains in crisis position. The state support is used inefficiently - investments are not put in construction of new mines and do not go on purchase of the highly technological equipment.

According to power strategy of Ukraine 90,9 million tons one year is planned to achieve by 2010 of volume of a coal mining at a level. For this purpose capacities should be up to standard 105,8 million tons.

Except for problems with a coal mining, the tendency to reduction in its quality is marked - ash content of power coal makes 40 %, and the international norm is equaled 25 %. Besides that quality of a commodity output is reduced, the environmental problems connected to use high-ash coal increase.

Significant problems are observed in sphere of pricing on coal. For last years the cost price of coal tends a constant to increase and its excess over a market price of coal.

The government of Ukraine promises to create conditions for functioning the independent market of coal and «to adhere» the Ukrainian prices to a global level. From our point of view effective functioning of this market will be possible only at creation of the certain organizational - economic mechanism of the government, having developed and having accepted legislative and normative tools.

The decision of the majority of problems with which the mining enterprise faces, depends on a state policy in this sphere and efficiency of functioning of tools of the economic mechanism of the government using of bowels. One of such tools are payments which the enterprises pay for use of bowels (fig. 2)

The existing system of payments in sphere of use of bowels is inefficient and demanding reforming. Therefore in the project of the tax code of Ukraine it is offered to unit payments for use of bowels and gathering for geological prospecting works in one tax (royalty). Some experts suggest to replace existing payments on:

- 1) the mining rent;
- 2) amortization of the reconnoitered stocks.

The differentiation of payments should be established by kinds of minerals irrespective of economic parameters of operation of deposits.

Thus, necessity of the state intervention and reforming of the economic mechanism using of bowels proves to be true.

On fig. 3 us it is offered the optimum circuit of interrelations between the state and the mining enterprise [5].

For increase of efficiency of functioning of mechanisms of the government in sphere using of bowels we offer introduction of the following organizational-economic tools:

- 1) development of functions of ecological audit;
- 2) an estimation of risk (financial and ecological);
- 3) the state guarantees for the investor;
- 4) tax privileges for the mining enterprise;
- 5) regional factors.

Let's consider in more details each of these tools.

We consider necessary also expedient introduction of the mechanism of audit at the first stage about licensing for mining works. We suggest to carry out the following kinds of an auditor estimation:

- geological, geophysical, hydro-geological studying of territories and definition of their prospects for search and investigations of deposits of minerals;
- geological-economic audit - reassessment of available fund of minerals by economic and ecological criteria and monitoring of a mineral-raw-material base;
- ecological - research of a condition of the geological environment and development dangerous geological processes.

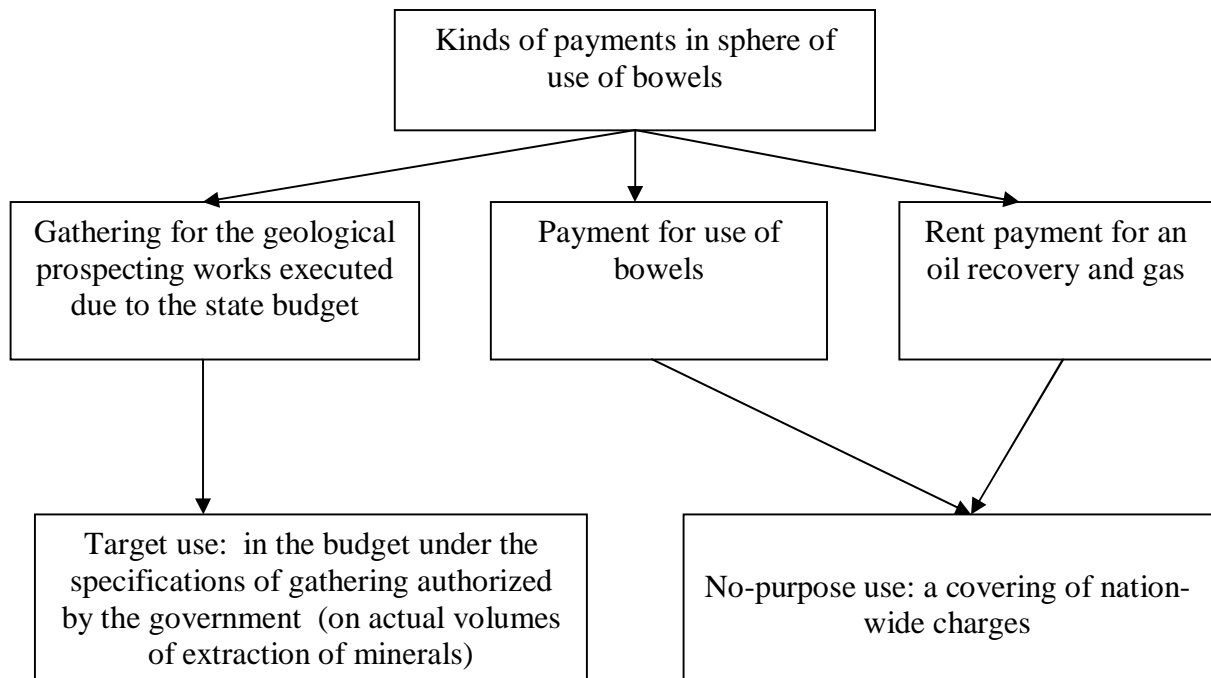


Figure 2 - Kinds of payments for using of bowels

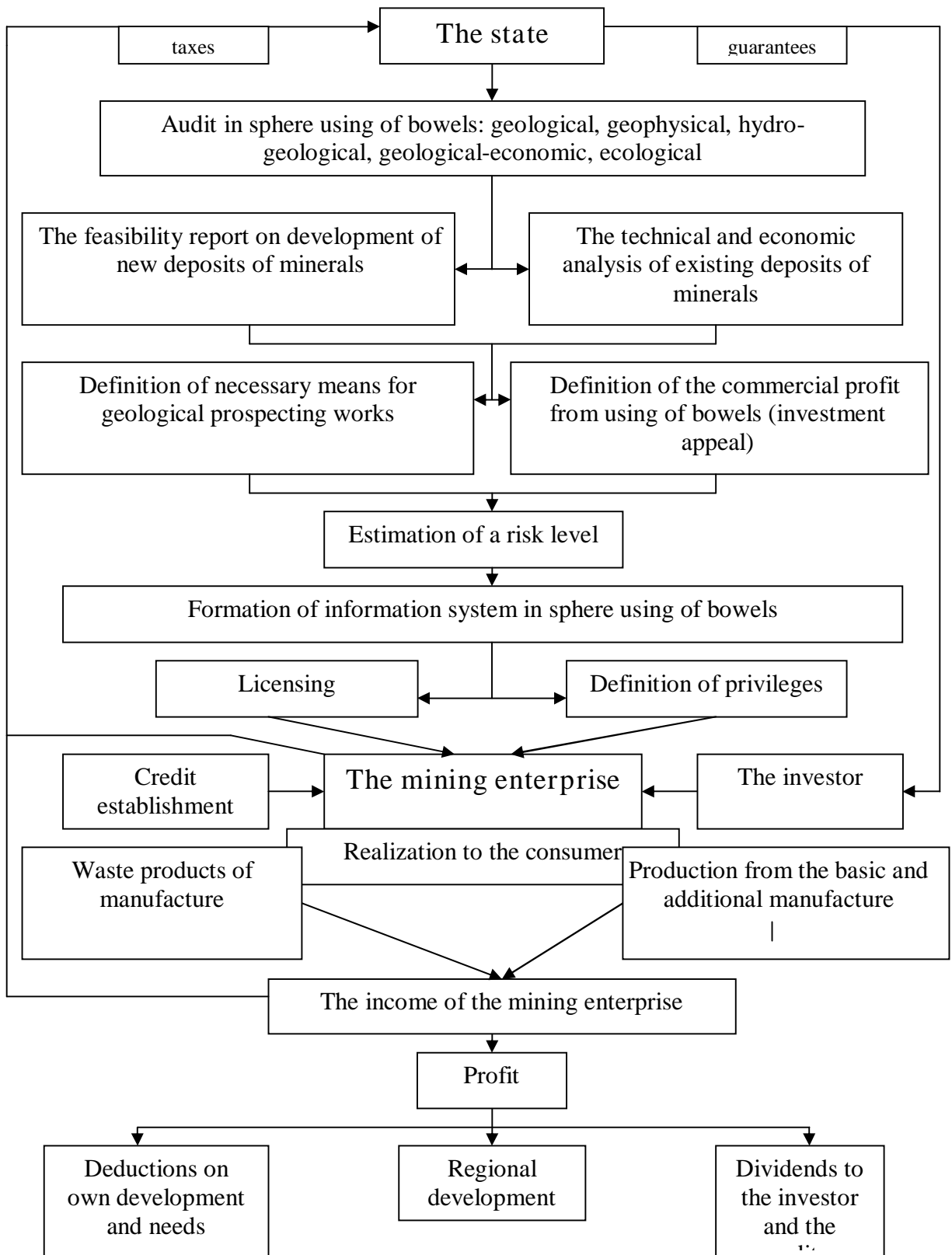


Figure 3 – The suggested circuit of interrelations in system «the state - the mining enterprise»

On the basis of results of audit the feasibility report on development and operation of deposits of minerals is carried out with the purpose of definition of investment appeal of these deposits. Conclusions of the feasibility report allow to determine the sum of means for geological works which the state will spend. The information concerning the commercial profit

from using of bowels should become base for definition of a level of financial risk. It will allow the state to insure itself against economic losses during granting privileges to the mining enterprise. It is necessary to take into account a level of ecological risk during acceptance of administrative decisions.

In Ukraine effective design procedures of a level of ecological risk are not developed yet and, accordingly, the mechanism of ecological insurance does not work. This direction is considered as one of effective organizational - economic tools in the future. Conclusions of audit and a technical and economic estimation, except for the state, also will be useful:

- to the investor for acceptance the decision concerning an investment of means for development of the mining enterprise;
- to financial - credit establishment to which the mining enterprise can address with the purpose of reception of credits.

Having processed the received results and the information on estimations of a risk level, its ordering is carried out} and information systems in sphere using of bowels are formed regional and nation-wide. The state specialized authorities license for mining works and determine requirement for privileges for the separate enterprise in view of geological, hydro-geological, ecological, economic and financial levers.

Taking into account very important role of coal in economy of Ukraine, it is necessary to take into account ecological levers of development of this branch. The mine during the activity throws out polluting substances in an atmosphere and in water resources, places waste products and influences ground resources. The decision of these problems requires significant capital investments which substantially pay off only in the long-term period. Therefore expediently mining enterprise to consider not only as the manufacturer of coal. We consider necessary to develop auxiliary manufacture and to introduce technologies of complex use of bowels (CUB). Except for the decision of environmental problems, realization of these of technology allow to receive the additional income [6].

Production which grows out introductions of technologies of complex use of bowels:

- geothermal energy of bowels;
- mine methane (for use in systems cogeneration);
- waste products of manufacture, especially breed (as raw material in construction);
- valuable both rare minerals and gases;
- the gas advanced from coal, half-coke, pitches;
- the cleared mine waters, etc.

Realizing the consumer this production, the enterprise receives the following results:

- reduction in the cost price of production from the basic manufacture on the basis of reduction of charges by a power component due to use of own energy sources;
- increase of the income of the enterprise due to realization of additional production from introduction of new technologies (the goods from waste products) or sales of waste products which are raw material for other productions);
- reduction of the sum of gathering for pollution of the surrounding natural environment on the basis of use of waste products as raw material, that also results in decrease in the cost price of production;
- increase of efficiency of activity of the enterprise in case of the complex and system approach to use of natural resources;
- reduction in a parameter of probability of extreme situations and accidents on manufacture as a result of explosions of mine methane;
- use of mine water on internal requirements of the enterprise as alternative source of water supply that results in decrease in production costs, or sale of surpluses of water to other consumers and reception of the additional income.

For example, on use of geothermal energy of bowels, waste products of coal output and mine methane in economic activities the income of nonbasic activity allows to receive

investments into introduction of technologies to the mining enterprise and to lower the cost price of coal. 52 mines in Ukraine have the equipment which average efficiency makes 17 %. In 2006 in Donetsk area on 22 mines 69,3 million cube m has been used of mine methane from extracted 467,5 million cube m that has made only 14,8 % [1].

Realization of the complex approach at use of bowels allows to receive the following kinds of effect:

- 1) social - additional workplaces, reduction in amount of diseases and death from failures of ecological character;
- 2) ecological - decrease in emissions of polluting substances and waste products, rational using of bowels on the basis of replacement of some minerals by alternative resources;
- 3) economic - reduction in the cost price of production of the basic manufacture, reduction of some taxes, receptions of the additional income of realization of additional kinds of production.

Be agrees the current legislation of Ukraine profit of the mining enterprise can it is directed on requirements of the enterprise and its development, and also on payments on extra means (to investors and creditors). We consider necessary to direct some percent from the profit on regional development on a special-purpose designation (on requirement for sphere using of bowels). In order to prevent additional tax loading it is expedient to stimulate the enterprise to deduct a part arrived to the regional budget by reduction of some nation-wide taxes.

Support of the investor for the mining enterprise has great value. Therefore the state should create attractive conditions for investment. It agrees rangings factors that influence investment appeal of region, the tax mode wins first place (tab. 1).

The factor	Rating
Tax mode	1
Opportunity and reliability of transportation of raw material	2
Geological level of scrutiny	3
Potential of large deposits	4
Economic stability	5
Presence of local communication	6
Political conditions	7

Table 1 - Ranging of factors that influence investment appeal of region [4]

Thus, flexibility of tax system is the important lever in the organizational - economic mechanism of the government using of bowels. The tax mechanism requires Ukraine in reforming and acceptance of the tax code in view of experience of other countries in sphere of the taxation in sphere of environment management.

For motivation of activity under the savings of resources and introduction of technologies of complex use of bowels it is counted expedient use of the following tools:

1. To give privileges under the profit tax to those enterprises which will introduce technologies on complex use of bowels. The privilege should be essential (less than the rate of the tax existing today (25 %) approximately twice) and to be given for concrete term (or for the term of a recoupment of the project, or for longer term depending on introduced technological decisions).

2. With the purpose of significant reduction in capital expenses for purchase of the necessary equipment it is necessary to abolish duties at import of the given equipment and the value-added tax to it.

3. Except for fiscal methods it is necessary to develop the effective mechanism of bank crediting of the enterprises which have intentions concerning introduction of technologies of complex use of bowels. That is, credit rates which are offered by domestic banks, should take

into account a special-purpose designation of the credit - in case of use of means for purchase of technologies and the equipment on complex use of bowels to give preferential credit rates and conditions of crediting. During development of this mechanism it is necessarily necessary to take into account, that credit privileges are especially important for the enterprises of mining branch and they, in view of their strategic value for the country, require in additional attention by the state.

4. Also count possible and expedient to develop an organizational - legal mechanism of use of means from budgetary ecological funds as introduction of technologies CUB will allow to receive significant ecological effect. These means can be directed on target financing or to consider as granting of the ecological credit on the part of the state with the help of its financial establishments.

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