

## INCREASE OF ECOLOGICAL SAFETY OF UKRAINE ON THE BASIS OF COMPLEX USE OF NATURAL RESOURCES

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For the decision of ecological and power problems in Ukraine it is offered to improve ecological, economic, organizational and financial mechanisms of state administration and the savings of resources on the basis of technologies on complex use of bowels (CUB). These technologies will allow to increase of ecological safety of the country and economic benefit of enterprise.

It is a lot of years mankind used different kinds of energy not bringing harm to a surrounding environment. Chemical energy of wood, potential energy of water, a kinetic wind power and energy of solar beams concerns such kinds of energy. But since X centuries the main energy source become fossil kinds of fuel, namely oil, coal and natural gas. With a view of maximization of a profit businessmen increase volumes of consumption of energy, that in turn causes increase of indicators of power consumption of manufacture. In the world the power consumption average index makes 0,34, and in Ukraine it in 2,6 times is more than in the developed countries [1]. At the present stage there was a situation which demands minimization of volumes of use of fossil fuel for two reasons: first, fuel stocks are limited; secondly, industrial consumption of fuel causes environmental contamination. It is displayed on economic indicators of activity of the enterprise:

- deficiency of natural resources leads to increase of the price of energy carriers, the cost price of production and decrease in its competitiveness;
- the increase in volumes of emissions in atmosphere, dumps in water resources and placing of a waste in environment causes increase of the sum of gathering for pollution of an environment which the enterprise pays in the budget, raising thus production cost price.

Thus decrease in power consumption of manufacture is ecological and economic target both at the state level and for the separate enterprise. One of directions of the decision of a problem is introduction of alternative energy sources, namely energy of the sun, a wind, water and geothermal energy.

The first stage on a way to rational use of fossil fuel, in our opinion, is transition from traditional manufacture of energy and heat to use installations for a cogeneration. At use these installations decrease volumes of received heat, however the general efficiency considerably increase and volumes of necessary heat for fuel processing decrease. It is necessary to notice, that as fuel it is thus used its not so traditional kinds, and methane, considerably reducing the cost price of production and a caused ecological damage. Besides, the additional income of realization of power resources after satisfaction of own needs of the enterprise takes place [2].

The following aspect demanding more steadfast attention from scientists and experts is a using of technologies on underground gasification of coal (UGC), forgotten after considerable researches in the last century and received then a scientific recognition. Today in our volatile country there is no enterprise for gasification of coals. While the large coal-mining countries of the world began to show actively interest to UGC: in Austria in 2003 the large enterprise of the given profile has been constructed, in China for last years 10 industrial stations UGC are built, show interest to the given technology in India, Democratic People's Republic of Korea and South Korea.

In our bowels lie down ten billions tons low-grade and outbalance coals which at realization of underground gasification quite would suffice to provide the country with energy more than for 100 years. The technology of UGC consists in coal burning directly on a place of its finding and the generating gas formed thus moves on a chink on a surface. It can be used for the power purposes - manufactures of the electric power, pair, hot water. In 11 areas of Ukraine are located 156 sites, geological conditions of gasification of coal layers satisfying to criteria with 20 billion tons of

stocks of coals, from them 27 sites are in Donetsk area with stocks 2,5 billion tons. The scientific and technical potential available in the country allows to organize own manufacture corresponding installations for gasification. According to National academy of sciences of Ukraine at institute of geology and geochemistry of combustible minerals already there are solid operating time on creation of technologies of land and underground gasification of coal [3]. In the course of spent restructuring of the coal industry in Ukraine on this technological decision it is necessary to pay steadfast attention, considering a significant amount of the left non-working layers. Restoration of industrial activity for completion of these layers by usual way economically is not effective and carrying out of underground gasification will allow receive ecological and economic benefit.

But the most important with ours of sight is transition to complex use of bowels (CUB) in which are put in pawn considerable ecological, social and economic benefits for the mining enterprises. Introduction of these technologies allows receive the enterprise the additional income of nonbasic activity, to lower the cost price of extracted coal and to reduce negative influence by surrounding environment [3-5]. At the enterprises of mining branch as a result of introduction of technologies on CUB it is possible to receive following kinds of additional production:

- geothermal energy of the developed space;
- methane (for use in systems of cogeneration);
- production wastes, especially breed (as raw materials in building branch);
- valuable both rare minerals and gases;
- gas processed from coal, semicoke, pitches;
- cleared mine waters etc.

As stimulus for introduction of technologies on CUB it is necessary to consider various fiscal methods for the enterprises, including tax privileges. It is necessary to make changes to an order of the taxation of profit of the mining enterprises and to improve mechanisms of formation of their financial and statistical reporting.

Today to speak about mines as about attractive objects for investment it is difficult enough. However, if to consider mine not only as the enterprise for a coal mining but also as a source of reception of additional energy, rare and valuable metals, gases, and also the cleared water then it is possible and it is necessary to speak about investment appeal of the enterprises of the mining industry. In this case the investor will be assured in stable profit reception. Thus it is necessary to notice, that operation of technologies on CUB will bring to the investor though and not "fast" dividends, but in long enough period of time and even after a conclusion of mine from economic activities. So, after working off of layers the developed space probably to use as a source of geothermal energy without restriction in time [6]. Mine water which pump out from the closed mine probably to use as the heat-carrier or to clear and direct for household needs. Thus, extraction from bowels of various resources, except coal, and their use for own needs or realization to other consumers gives the chance to the enterprise to reduce considerably the cost price of end production and to receive the additional income. Thus the economy on capital expenses for introduction of technologies on CUB will be considerable in view of possibility of use of already existing basic industrial means of the enterprises (after modernization). Besides, current expenses will be lowered at the expense of economy of means for acquisition of power resources for maintenance of economic activities of the enterprise [3, 5].

Today in the developed countries the state stimulate those enterprises which introduce nature protection and projects for saving of energy by means of technological, organizational, economic and financial tools. In Ukraine such mechanism is absent and it is necessary to note, it will take place only in the presence of effective ecological and economic policy of the state. For motivation of activity on saving of energy and to introduction of technologies on CUB is considered expedient

perfection of a mechanism of state administration of using nature resources on the basis of introduction of 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 on a project time of recovery of outlay, or for longer term depending on introduced technological decisions).

2. For the purpose of considerable decrease in capital expenses for acquisition 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 fiscal methods it is necessary to develop the effective mechanism of bank crediting of the enterprises which have intentions concerning introduction of technologies on CUB. That is, credit rates which are offered by domestic banks, should consider a credit special-purpose designation - in case of use of means for acquisition of technologies and the equipment on complex use of bowels to give preferential credit rates and crediting conditions. In the course of working out of this mechanism it is necessarily necessary to consider, 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 from the state.

4. Also consider possible and expedient to develop organizational and legal mechanism uses of means from budgetary ecological funds as introduction of technologies on CUB will allow to receive considerable ecological effect. It is possible to direct these means on target financing or to consider as granting of the ecological credit from the state by means of its financial institutions.

Conclusions:

1. Modernization of technological processes at the coal-mining enterprises on the basis of complex development and use of resources of bowels can promote:

- to overcoming of deficiency of turnaround and capital means at the expense of reception of incomes of realization of additional production;
- to increase of investment appeal of the enterprises of coal branch in view of reception prospect profits for smaller term;
- to updating of a fixed capital of the enterprises and preparation new mining fields and horizons.

2. Use technologies of saving energy will allow to reduce sharply negative influence of the coal-mining enterprises by surrounding environment, namely to lower emissions of hotbed gases, to improve quality of taken away water, it is less to spend irreplaceable resources for a coal mining.

3. Application of technologies of complex use of natural resources opens possibilities of creation of new workplaces in depressive coal-mining regions, to improvement of conditions and increase of a standard of living of the population.

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