RESOURCE POTENTIAL OF TECHNOGENIC DEPOSITS

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Today the problem of waste has gained environmental and economic importance for many countries. Accumulation of waste is transformed into significant danger factor that affects the quality of life and is one of the real threats to environmental security.

In Ukraine from 1 billion to 700 million tons of industrial and household waste is collected annually. Today the total amount of accumulated waste in the country reached 28 billion tons of waste. In the structure of Ukraine's waste mining waste has the largest share as 88%, other industries have about 10%, household waste has about 2%. The main sources of formation of large-tonnage industrial waste in the country are more than 3.5 thousand enterprises of mining, processing, metallurgical and chemical industries. About 95% of the total volume of mining waste is generated by 22 coal-mining enterprises of the country (about 1 billion tons of waste annually). [1, 2]

Nowadays, the decrease in natural mineral deposits may be compensated by technogenic deposits. Developing technogenic deposits leads to a reduction in the cost of searching for new and exploration of worked deposits, maintaining exhaustible mineral resources in the bowels, increasing productivity through cost-effective processing of raw materials, improving working conditions, because technogenic deposits are located on the surface of the earth.

According to Hirusov E.V., because of imperfection of mining technologies up to 70% of oil, 30% of coal, 20% of iron ore is left in the bowels. Planned losses of coal are 40%, oil - 50%. During extraction of potassium salt and potash mica up to 80% of raw materials are left in the dumps. However, it was found that in the waste of Zaporozhye Titanium-magnesium Complex content of scandium, vanadium, tantalum, chromium, titanium is higher than that of natural deposits. Many expensive components are contained in the waste of Nicholaev Mercury Complex (e.g. lithium, mercury), of Cherkassy Plant of Chemicals (e.g. nickel) and other enterprises. [3, 4, 5]

Of the total amount of minerals which are involved in the system of industrial production in most cases no more than 1-5% take the form of the final product. And most of the produced waste is formed exactly at the stage of extraction and processing of natural resources. As a consequence of accumulated depreciation in the mining and manufacturing industries the waste contains a large number of resource-valuable components.

In the Ukraine there were created hundreds of large, medium and small technogenic deposits of various minerals which are suitable for industrial use.

Statistical data on the number of technogenic deposits in some regions of Ukraine outlined in the table. Its potential cost is estimated in the tens of billions of dollars.

Data of table shows that on the territory of the five areas of Ukraine most technogenic deposits are situated and most of the waste is placed.

Table 1 – Number of technogenic deposits and the volume of waste in some regions of Ukraine [6]

№	Region	Quantity of accumulation of technogenic objects	Distribution of industrial production waste (thousands of m^3)									
			Mine rocks	Stripping rocks	Waste	Ash-and-slad waste	Metallurgical slag	Stone siftings	Carbonate siftings	Phosphogypsum	Mercury cinders	Defecate
1	Volyn	24	20,1	0,087	2,03	18,84	-	-	-	17,16	-	-
2	Dnipro-petrovsk	86	439,01	2,31	209,22	54,813	31,58	0,028	-	-	-	-
3	Donetsk	96	891,254	439,701	418,51	141,012	46,85	101,014	99,482		2,66	
4	Lugansk	50	537,34	8,98	376,34	4,67	9,76	8,52	7,353	-	-	-
5	Lviv	56	24,86	73,38	44,27	14,99	-	-	-	1,8		0,54
6	In Ukraine in general	1307	-	1523,2	653,72	306,0	305,822	100,8	110,89	36,411	2,7	19

Today in Ukraine a large number of technogenic deposits of minerals is formed that have planetary scale. The practice of foreign countries shows technological possibilities of processing the waste of production and consumption to obtain high-quality end products that could meet the needs of the state and increase its export potential.

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Економіка для екології: матеріали XIX Міжнародної наукової конференції, м. Суми, 30 квітня – 3 травня 2013 р. / редкол.: Д. О. Смоленніков, М. С. Шкурат. – Суми : Сумський державний університет, 2013. – С. 150-152.