

COAL MARKET OF UKRAINE: ANALYSIS AND DEVELOPMENT BACKGROUND

UKRAJINSKÝ TRH S UHLÍM: ANALÝZA A POZADÍ VÝVOJE

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Abstract

The article analyses factors influencing the Ukrainian coal market. Based on the analysis the preconditions of further development of coal industry in Ukraine are formulated.

Abstrakt

Článek analyzuje faktory ovlivňující trh s uhlím na Ukrajině. Na základě této analýzy jsou formulovány podmínky dalšího rozvoje uhelného průmyslu Ukrajiny.

Key words: market, coal, export, import, analysis, prices.

1 INTRODUCTION

According to estimates of the Working Group of the Coal Energy Committee ECE coal provides about 27% of total world energy production. This value is even higher in the electricity sector as about 44% of all electricity in the world is produced with the usage of coal. In terms of world reserves coal exceeds all other types of fossil fuels. So the multiplicity factor for coal reserves (the ratio of remaining reserves to annual production) currently stands for 122 years. For comparison, the multiplicity factor of gas reserves is 60 years and for oil it amounts to 42 years. In perspective, a rise of the role of coal as the one of the most important energy resources is expected around the world till 2020 due to the reduction in consumption of petroleum and petroleum products, revision of attitudes towards nuclear energy development in many countries. In addition, an increased demand for coking and power coal is observed in the steel industry due to the fact that many metallurgical enterprises have placed natural gas with pulverized coal that is injected into blast furnace hearth. The current trend indicates positive fundamental reasons for further development of coal mining companies and further rise of the value of their shares. Nevertheless, in spite of the substantial reserves of coal (7th place in the structure of the world's reserves and production of coal), and rather developed coal industry Ukraine has recently significantly increased its imports of coal production. Therefore, such analysis of the coal market and influence of various factors is an important problem.

Works of such scientists as A. I. Amosha [1, 2, 3], E. N. Bratkov [1], M. G. Zemlyanyj [6], A. I. Miroshnikow [4, 5], L. V. Rassuzhdaj, [1, 3], T. V. Ryauzova [6], U. P. Yashenko [3] and others are devoted to market researches and analyses of coal products including Ukrainian ones. However, the relevance of creating market conditions for coal industry, coal production market liberalization, transparency of pricing and the mechanisms of state regulation of relations in these markets increased in terms of the current situation of Ukrainian complex economic development.

The purpose of the article is to reveal and analyze the factors, favorably and negatively influencing the Ukrainian coal market, and on this basis to formulate preconditions for the further development of the coal industry in Ukraine.

2 COAL MARKET ANALYSIS

Like any other market the coal market develops under the laws of supply and demand, so there is a need to analyze coal producers and consumers.

2.1 Analysis of coal producers and consumers

Demand for coal in Ukraine is represented by the following users: power, coke and metallurgical plants, own needs of mines, population, utilities, importers. In 2010, the overall balance of marketable coal production totaled 67.1 million tons, thereof 37.2 million tons of power coal (including thermal power plants - 32.2 million tons) was shipped for the needs of the Ukrainian energy industry and production sector and 6.1 million tons for export; 23.5 million tons of coking coal for coking was supplied to the domestic market and 0.3 million tons for export.

The proposal of coal is conducted by its producers - coal mines, coal mining associations and trade companies. According to official statistics, 75.2 million tons of coal was produced, which corresponds to 55 million tons of marketable production (including power coal - 40.3 million tons, coking coal - 14.7 million tons) in Ukraine in 2010.

The dynamics of commodity coal output [7] in recent years is shown in Fig. 1. The dynamics of coal products consumption [7], as well as the consumption of other energy materials are shown in Fig. 2.

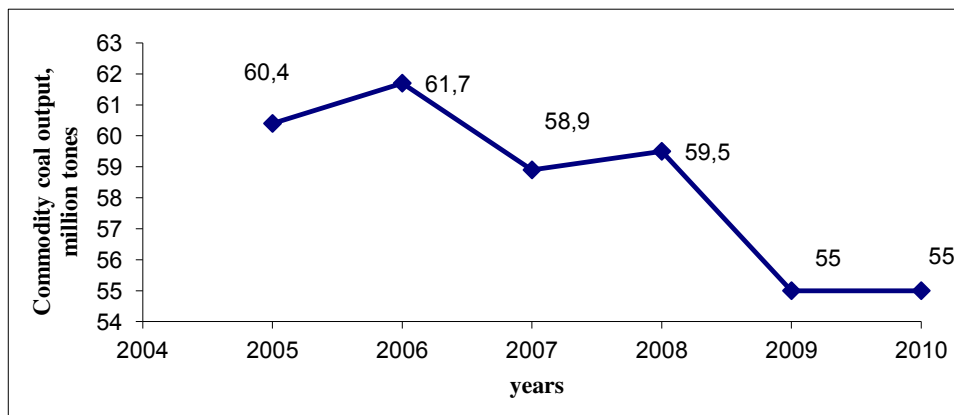


Fig.1 Dynamics of commodity coal output in Ukraine

A reduction of coal output in Ukraine to 55 million tons, and a significant increase in its consumption to 67.1 million tons have caused an increase in the deficit of domestic products in recent years and led to imports of lacking volumes of coal from CIS countries and from abroad in recent years. In 2010 3 million tons of power coal were imported and 9.1 million tons of coal for coking. Major exporters and importers of Ukrainian coal are shown in Fig. 3.

It should be noted that at the present time, in fact, there are two separate markets - a market of power coal and a market of coking coal, although they interact with each other. Coking coal is fed to a coke plant, where coke needed in metallurgical production is made of it. It can also be used for energetic needs. The main purpose of power coal is the stability of thermal power plants, replacement

of coke with coal injection into blast furnaces, as well as its use as a domestic fuel. Since the beginning of the century the demand for power coal has increased in contrast to coking coal which must compete with petroleum, gas and other energy sources.

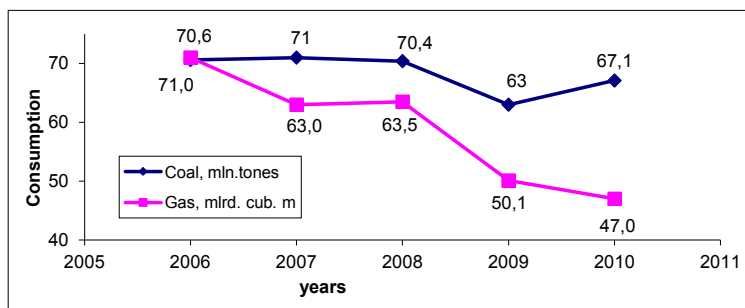


Fig. 2 Dynamics of consumption of coal products and natural gas in Ukraine

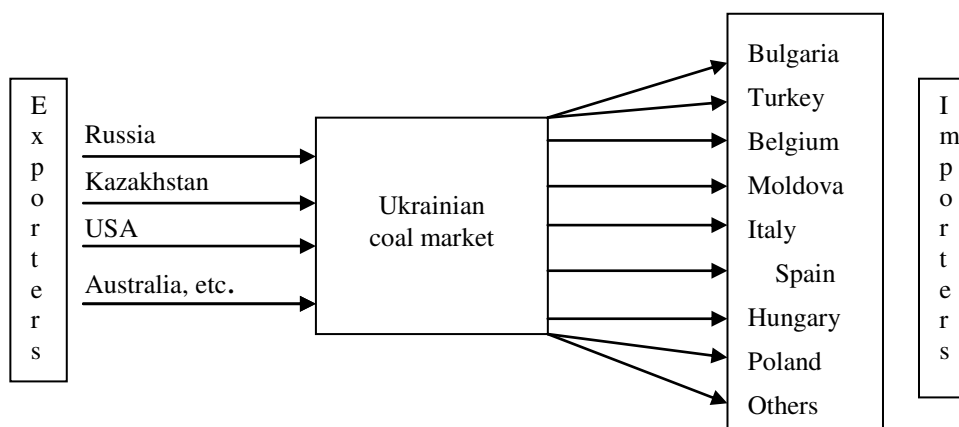


Fig. 3 Exporters and importers of Ukrainian coal

Coal is extracted by about 160 Ukrainian mines; thereof about 60 high-quality anthracite coal mines. The leaders of the extraction are "Dovzhanskaya-Capitalnaya" and "Krasny Partisan" SE "Sverdlovskantratsit" (approximately 13-15% and 12-13% of the total production of anthracite, respectively). Coking coal that is not less expensive and scarce is extracted in 46 mines. Here the leaders in mining are "Krasnoarmejskaja - Zapadnaya #1" and Zasyadko (approximately 20% and 12% of the total production of coking coal, respectively) [8]. The constant shortage of quality coking domestically-produced coal is observed on the Ukrainian market. This is determined by the next reasons:

1. Metallurgical markets both in Ukraine and around the world are characterized by positive dynamics of production. Coking coal consumption should grow in step with pig-iron production.

2. Volumes of coking coal mining in Ukraine reduced due to the extreme deterioration of the technological equipment at state mines, difficult geological conditions, high risks of accidents and injuries, as well as exhaustion of economically attractive reserves. Besides the decline in production resulted in serious accidents at the two mines of Donetsk and Lugansk regions that produce coking coal (July 2011).
3. Competitiveness of steel production is connected with the need for coal with a low sulfur content (0.5%), which is not produced in Ukraine.
4. Despite the fact that Russia is a main supplier of high quality coking coal in recent years, a significant part of the most valuable types of coal is consumed by Russian producers of coke. In Ukraine, low-sulfur coals with a high content of interit are primarily imported.

Thus, the shortage of coking coal produced domestically can maintain in the near future, and for a long time as well. Experts believe that the real way how to provide Ukrainian steel companies with high-quality coking coal in the near future is to increase its import from abroad (USA, Australia and Canada).

A balance between demand and supply of power coal in Ukraine is expected in 2011. The balance on this market is influenced by such key factors such as the privatization of power generating companies, financing of the coal industry and the investments in this sector, dynamics of supply and demand for energy resources in the world market [9]. In terms of coking coal, if the prospects to boost its production are not encouraging, meanwhile due to objective reasons, there are all the prerequisites for increasing power coal production. Such prerequisites are:

1. Reduction of expensive imported gas consumption (Fig. 2).
2. Shifting from natural gas to coal and fuel oil in thermal power plants.
3. Starting to implement the technology of pulverized coal injection into blast furnaces, reducing both the natural gas and metallurgical coke consumptions.
4. Global demand for power coal is growing rapidly and that will allow to increase exports of the Ukrainian power coal.
5. Possibility to increase electricity exports to EU countries in the future.

2.2 Analysis of coal price

One of the important factors for consumers (domestic producers of coke, metallurgical and energy plants) is the price of coal. Coal prices depend on its quality, transportation costs and other conditions. Prices for power coal are usually adjusted according to its calorific value.

Taking into account the expected gradual recovery of the global steel production a high level of world prices for coking coal in 2011 may at least remain on the same level. In the domestic market, the prices will be supported by growing demand from the Ukrainian steel industry and preservation of the deficit of coking coal due to its insufficient production at Ukrainian mines.

Prices for power coal are traditionally much less sensitive to economic cycles than those for coking one. Due to the increase of global demand for power coal gradual growth of world prices is expected. But in the realities of our country other circumstances come to the forefront. Internal market mechanisms are underdeveloped because of the state regulation of prices and subsidies for coal.

State-owned enterprises are forced to sell fuel to power stations for prices set by the Ministry. Considering that these prices are below the cost of manufactured products, this leads to losses of mines and increases of budgetary allocations to the sector. Despite the fact that private coal mines supply coal to power stations for commercial prices, occasionally there is a relation to the state

economic policy. For example the decision of the Cabinet of Ministers № 285 of April 2, 2009, under which the National Joint Stock Company "Energy Company of Ukraine" was to buy power coal exclusively from state-owned mines belonging to the State Enterprise "Ukrainian Coal". In this situation, private companies are forced to look for importers of coal. If there is a shortage of coal in stock of thermal power plant, the government has to solve this problem with exporters from neighboring countries.

For comparison, the domestic and export prices for coal are shown [10] (Table 1, Table 2).

As it can be seen from the tables the domestic prices for coal in Ukraine are lower than the export ones which is another prerequisite for the development of own coal industry.

Tab. 1 Domestic and export prices for coking coal (May 2011)

	Price without VAT, \$/t
Ukraine (depending on the rank)	175-236
Russia	
DAF Ukrainian border	253-260
FOB Vostochny	245-250
Global market	
Australia, FOB Queensland	325-330

Tab. 2 Domestic and export prices for power coal (May 2011)

	Price with VAT, \$/t
Ukraine on the basis of 5000-5500 kcal / kg	68-72
FOB Riga	103-110
FOB Vostochny	120
Global market	
South Africa, FOB Richards bay	122-124
Europe, CIF APA	123-130
Australia, FOB Newcastle	120-123
Japan, CIF	133-134

One more problem is seasonality of the product on the market. A seasonal decline in consumption of power coal is connected as a rule with the end of the heating season, which leads to weakening demand and, possibly, a decline in price. When the use of coal of thermal power stations is planned for the autumn-winter period, the demand as well as trouble-free TPP operation stabilize. A decline in production of coke and steel products in Ukraine and other CIS countries, that often occurs in summer, also leads to the reduction in demand and prices for coking coal.

3 CONCLUSIONS

Based on the above mentioned data conclusions about the nearest prospects of the Ukrainian coal market development can be made. In spite of the difficulties accompanying today's economy and the coal industry in Ukraine, the prospects for its further development can cause no doubt. First of all, for the following reasons:

- growth of world demand for power coal;
- growth in domestic demand for coal fuel due to a reduced consumption of expensive imported gas in Ukraine, transfer of thermal power plants from gas to coal and oil, positive dynamics in the metallurgical industry and implementation of energy-saving technologies out there, as well as the increasing demand of population;
- lack of alternative energy sources in Ukraine;
- quite low prices compared to those for imported products caused by subsidized payments.

All of this are the basic prerequisites for building up own mining volumes primarily for providing own needs in power coal and reducing imports of coking coal. It is possible to overcome the crisis in the coal industry only with coordinated efforts of all branches of government, business and science. One of the main incentives to rise the efficiency of the coal industry must become an open and transparent domestic coal market.

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RESUMÉ

Na základě výše uvedených údajů lze učinit závěr o krátkodobých perspektivách rozvoje trhu s uhlím Ukrajiny – bez ohledu na problémy, které dnes provázejí ekonomiku Ukrajiny a odvětví uhelného průmyslu, perspektivy dalšího rozvoje nevedou k pochybám. Je to podloženo především následujícími důvody:

- růst poptávky ve světě po energetickém uhlí
- zvýšení vnitřní poptávky po uhelném palivu v souvislosti se snížením spotřeby drahého dováženého plynu na Ukrajině, záměnou používání plynu v tepelných elektrárnách za uhlí a mazut, výraznou dynamikou metalurgického průmyslu se začátkem zavádění energeticky úsporných technologií a také s růstem poptávky obyvatelstva
- absence alternativních zdrojů energie na Ukrajině
- ve srovnání s dovozy dostatečně nízké ceny následkem dotací.

Jde o základní předpoklady pro růst objemu vlastní těžby především pro zabezpečení vlastních potřeb energetického uhlí a snížení dovozu koksovatelného uhlí. Překonat krizi uhelného odvětví lze pouze koordinovaným úsilím všech zaměřením vlády, podnikání a vědy. Jedním z hlavních stimulů zvýšení efektivity uhelného průmyslu se musí stát otevřený a transparentní vnitřní trh s uhlím.