



RESEARCH PAPERS IN ECONOMICS AND FINANCE

JOURNAL HOMEPAGE: www.ref.ue.poznan.pl

Mechanism for the implementation of public-private partnership during management of marketing activity of enterprises in the coal mining industry

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ABSTRACT

Performance features of coal mining enterprises in terms of organization of the marketing activity have been studied, including: constant fluctuations of the market of coal products; economic sensitivity to the irregular demand for coal (surplus or deficit), influence of seasonal factors on the formation of the material flow of coal products; uneven development of consumption and production of coal in Ukraine; reduction of volumes of marketable and sold coal products, increase of coal in stock in the national coal mining enterprises; differentiation of consumers by different categories; direct supply of coal products is the best distribution channel; change of contractual relations between the enterprise and consumers of coal products; debts for the sold coal products; restriction of financial resources of national coal enterprises. The mechanism of implementation of public-private partnership is improved during management of marketing activity of coal mining enterprises of different forms of ownership based on a syndicate as a form of business, which shall contribute to a prompt response to changes in demand for coal, distribution of risks between coal enterprises of public and private sectors and their minimization, organization of continuous supply and secured channels of distribution of coal products for national coal-mining enterprises.

Keywords: coal-mining enterprise, marketing activity, organization, irregular demand, syndicate, public-private partnership.

1. Introduction

As the world economic practice shows, public-private partnership (PPP) is one of the most effective forms of cooperation between the state, public and private sectors in different spheres of economic activity. The use of this form will contribute to the effect by combining financial resources; improving the efficiency and quality of service compared to the public sector; attracting additional investment; access to innovative technologies to ensure sustainable development of national economies of developed countries.

At present, the issues of improving the efficiency of sales management in various industries are of paramount importance, since a well-organized policy of bringing the finished product to the end user allows strengthening

the competitive position of business entities and ensuring reduction of their costs. These problems are particularly relevant for the coal industry in a number of coal-mining countries of the world due to the fact that, perhaps, no other type of economic activity is not so dependent on a variety of contractors and consumers.

In modern conditions of unstable economic development, coal companies are faced with the problem of finding the most effective ways to sell coal. This derives from unstable demand for coal products, which leads to such negative developments as deficit and surplus. And this, in turn, negatively influences the establishment of sales for coal mining enterprises due to political, institutional, engineering, market, financial, economic, marketing and informational factors.

Therefore, the necessary level of organization of sales activity is the basis of stable functioning of coal enterprises in conditions of uncertainty of external and internal environment. In this regard, there was an objective need for the introduction of an appropriate mechanism of PPP in the management of sales activities of coal companies of various forms of ownership in the coal-producing states.

2. Literature review and problem statement

Today leading scientists are in a scientific debate about the forms of public-private partnerships in different spheres of economic activity (Davies, Fairbrother 2003; Delmon 2009; Akintoye, Beck 2009; Horsley et al. 2015; Kumar, Kumar 2016; Maximov 2010; Shylepnytskiy 2011; Gaffney, Pollock, Price, Shaoul 2013; Zapatrina, 2013; Yescombe 2015; Grigorieva, Karpova 2015; Smoliński, Pichlak 2009; Tkachenko 2015; Kharazishvili 2016; Pajak 2016; Ivanov 2016; Melnyk, Podgaets 2017). Basically, scientists refer to the public-private partnership in the coal industry concession and corporate development of the mining field:

1. "The corporate development of the mining field is a hybrid form of industrial organization, or rather an economic network that unites the state mine and an entrepreneurial coal mining company..." (Tryfonova, Kravets 2014, p. 134).
2. It is defined that: "Joint activity on development of fields according to the formula of corporate development of a mining field, namely: the private firm equipment on own mountain branch that is contained within the field of the state mine, extracts coal, and the state enterprise provides it (firm) with paid services from lifting, water drainage, transport, ventilation, power supply, etc. – by no means it is impossible to consider public-private partnership...". "Classic corporate development of the mining field is a form of economic activity, which is carried out by agents (partners) together, without creating a legal entity to achieve a specific goal" (Cherevatskiy, Fokina 2016, p. 20, 21).
3. A model of public-private consortium as an organizational and legal form is proposed, which predetermines the principles of private capital participation in the framework of projects for the liquidation of coal mining enterprises; the peculiarity of this model is the use of internal mining resource as a means of payment for the services of private participants of the consortium, resulting in the effect of minimizing public spending in the field of liquidation of coal mining enterprises (Serdiuk 2016, p. 87).

4. Corporate development of the mining field as one of the forms of interaction between the state and business on the principles of public-private partnership is studied; it is proved that the corporate development of reserves of public mines by the private sector is a promising scheme of relationships that will improve the level of management and attract private investment of state enterprises of the coal industry (Zaloznova, Petrova 2017, pp. 32-33).

On the basis of the analysis of scientific publications, the main provisions of scientists and specialists in the reform of the coal industry have been summarized:

- a scheme of building a rational production structure on the example of an integrated company in the energy industry is proposed (Levshova 2013, p. 177);
- it is specified that "... Ukraine in ensuring the needs of the economy in the corner should choose the path of optimal combination of own production and the diversification of imports; at the same time optimization should be performed according to the criterion of the minimum social cost (with respect to the amount of state support and investment in production) on coal production" (Lyashenko 2014, p. 110);
- it is proved that the ratio of public sector enterprises of the coal industry and their counterparts – energy generating companies and metallurgical corporations should be organized on the principles of economic networks (Starychenko, Cherevatskiy, Zaloznova et al. 2016, p. 97).

Despite a wide range of scientific research and developments on the use of public-private partnership in the coal mining industry, the problem of sales development of the coal-mining enterprises on the basis of public-private partnership with due account for current trends of development of institutional environment is rather neglected. Considering the special urgent character of such a problem under modern conditions of managing coal-mining enterprises, it requires further scientific research. All of this considerably determined the choice of the topic of this research and its objective.

Given this, **the purpose of the study** is to develop scientific and methodological provisions and develop practical recommendations for improving the management of sales activities of coal enterprises of various forms of ownership on the principles of public-private partnership.

3. Research results

Studies show that coal remains a strategically important resource for energy security in most countries of the world. For example, Poland is a major coal producer in Europe. More than 80% of the country's electricity is produced by coal-fired power plants. At the same time, Poland seeks to increase the production of coal products by investing in new mines, expand existing and build new coal thermal power plants with the involvement of private sources of financing. The state program of support for the coal industry predicts that by 2050 coal generation will account for 50% of all generating capacity in Poland. The US and China are among the major coal powers in the world, where 60% of coal production is concentrated (12% in the US and 48% in China). The United States has 27% of the world's coal reserves.

However, recently in the world there is a tendency to reduce the level of coal production - an average of 3-4% per year. In the US the fall is 8-10% per year, in Australia - 3-4%, in China - 2-2.5%. The share of coal products in power generation has decreased from 40 to 29% in the US. A lot of American companies for the extraction of coal have gone bankrupt, among them Arch Coal, Alpha Natural Resources, Patriot Coal and Walter Energy. This is due to the global economic crisis - a slowdown in the development of world economic drivers and stagnation of industrial production in a number of developed countries.

According to the program of closure of inefficient production in China by 2020, it is planned to eliminate 800 million tons of obsolete capacity and put into operation 500 million tons. It is projected that in 2020 coal production will amount to 3.9 billion tons per year.

The Ukrainian coal industry is characterized by specific features of the organization of sales processes, such as:

- *reduction of coal consumption and production in Ukraine* - as the analysis of statistical data shows, the volume of coal consumption decreased in 2007-2016 by 39.2% (from 71 to 43.2 million tons), and production - by 49.9% (from 58.9 to 29.5 million tons);
- *the increase in the level of consumption over production*, that is the deficit of coal (mainly coking and anthracite); if in 2007 this figure was 1.21, in 2015 - 1.52, in 2016 - 1.46;
- *the surplus of coal production* is mainly gas-grade coal. Thus, the volume of coal residues in the warehouses of state enterprises in 2007-2016 increased by 69.4%, that is from 1.19 to 2.01 million tons;

- *increase in the level of loss of coal production in Ukraine*. If the loss ratio of state coal-mining enterprises in 2007 was 33.1%, in 2015 - of 39.8%, and in 2016 - 46.5%;

- *inefficient implementation of export-import operations for coal sales* - the volume of coal exports for 2007-2016 decreased by 86.5% (from 3.7 to 0.5 million tons) and the volume of imports increased by 18.2% (from 13.2 to 15.6 million tons). At the same time, there is an excess of imports over coal exports. If in 2007 the value of this indicator was 3.6, in 2016 - 31.2 times. That is, the balance of export-import operations for the sale of coal is negative.

It should be noted that this leads to an imbalance - the growth of coal supplies not provided for in the energy balance of Ukraine, as well as the outflow of financial resources from the state budget for the purchase of imported coal due to the high level of prices (including transportation costs). Thus, if the average price of 1 ton of Ukrainian commercial coal products in 2016 amounted to 48 dollars USA (in 2015 - 51), the Russian coal - 85 dollars USA, Polish - 99, Canadian - 106, Australian - 109, American - 112 dollars USA.

The results of the research allowed to determine the disadvantages of sales management of the Ukrainian coal mining enterprises (as a rule, state enterprises being part of management of the Ministry of Energy and Coal Mining of Ukraine). Confirmation is also the analysis of statistical data on the example of SE "Lvivvugillya". Thus, production of coal reduced over 2007-2016 by 67%, finished coal goods - by 76.7%, marketable - by 77.7%, sold products - by 78.2%. At the same time there is a tendency of significant growth of the amount of coal in stock - by 3.91 times (Table 1).

Table 1: Dynamics of the production volume and sales of coal products of SE "Lvivvugillya"

Year	Parameters				
	Production of coal, th. tons	Finished coal goods, th. tons	Marketable coal products, th. tons	Sold coal products, th. tons	Coal products in stock, th. tons
2007	2805.6	1994.8	1935.5	1944.8	43.8
2008	2852.3	1467.2	1409.8	1414.9	171.1
2009	2503.2	1361.8	1314.1	1296.0	98.5
2010	2332.6	1085.5	1042.3	1039.9	228.0
2011	2069.4	783.8	740.9	741.1	93.6
2012	1780.0	622.9	579.3	573.3	255.0
2013	1341.2	755.0	712.3	704.9	230.9
2014	1185.9	642.1	603.0	595.2	209.0
2015	1048.6	546.1	510.4	502.6	189.2
2016	927.1	464.5	432.1	424.4	171.3

Source: Completed according to information materials of the Ministry of Energy and Coal Mining of Ukraine and SE "Lvivvugillya".

The loss ratio of coal production of SE "Lvivvugillya" in 2016 was 24.6% (in 2007 – 33.9%, in 2012 – 30.7%, in 2015 – 30.4%). The share of expenses on sales in net cost of 1 t of marketable coal goods increased over 2007-2016 by 1.2% – from 0.5 to 1.7% (Table 2).

In addition to that, as shown in the analysis, the amount of coal products sold at PJSC "Colliery Group Pokrovske" increased over 2007-

2016 by 80.7%. Profit earning capacity of coal production increased by 27.4%, which means that there appears to be a tendency of increase in price net cost relation of 1 t of marketable coal products (Table 3).

Table 2: Dynamics of economic factor of work of SE «Lvivvugillya»

Year	Parameters			
	Net cost of 1 t of coal products, UAH	Cost of 1t of coal products, UAH	Loss ratio of coal production, %	Marketing cost of 1t of marketable coal products, UAH
2007	286.2	189.3	33.9	1.37
2008	532.5	320.7	39.8	4.21
2009	651.9	447.0	31.4	5.13
2010	708.2	487.2	31.2	9.38
2011	769.9	559.5	29.8	10.14
2012	881.7	610.7	30.7	11.64
2013	965.9	642.0	33.5	12.23
2014	1134.8	786.9	30.7	16.40
2015	1386.6	964.5	30.4	18.90
2016	1568.1	1182.2	24.6	26.24

Source: Complete according to information materials of the Ministry of Energy and Coal Mining of Ukraine and SE "Lvivvugillya".

Table 3: Dynamics of basic parameters of sales at PJSC "Colliery Group Pokrovske"

Year	Parameters			
	Volume of sold coal products, th. tons	Net cost of 1t of coal products, UAH	Price of 1t of coal products, UAH	Profit earning capacity of coal production, %
2007	6132.9	190.57	205.22	+7.69
2008	5084.3	326.13	320.79	-1.64
2009	5394.4	347.51	329.26	-5.25
2010	4760.0	467.66	483.89	+3.47
2011	6899.3	468.20	524.74	+12.08
2012	8345.5	540.86	629.27	+16.35
2013	8958.9	624.81	754.62	+20.78
2014	9617.4	721.78	904.94	+25.38
2015	10324.2	833.80	1085.20	+30.15
2016	11083.1	963.20	1301.40	+35.11

Source: Complete according to the materials of the Ministry of Energy and Coal Mining of Ukraine and PJSC "Colliery Group Pokrovske".

Over 2007-2016 the amount of coal production of DTEK grew by 97,9%. Over 2010-2016 export turnover on coal trading decreased by 32%, and import – by 83,1%. The balance of export-import transactions on coal trading had positive value: in 2016 – 1110,9 thousand tons (in 2010 – 648 thousand tons). That is, the value of this parameter increased for this period by 56% (Table 4).

Therefore, in the public sector of the coal mining industry there exist sales problems of coal products. Earlier SE “Coal of Ukraine” (created as per order No. 669 of the Ministry of Fuel and Energy of Ukraine dated 14.11.2003) performed the purpose of improving economic mechanisms of sales of coal products, and decided what region and in what amount shall coal be supplied to the energy-generating companies. However this state enterprise is being liquidated in accordance with the order No. 591-r of the Cabinet of Ministers of Ukraine as of 04.06.2015.

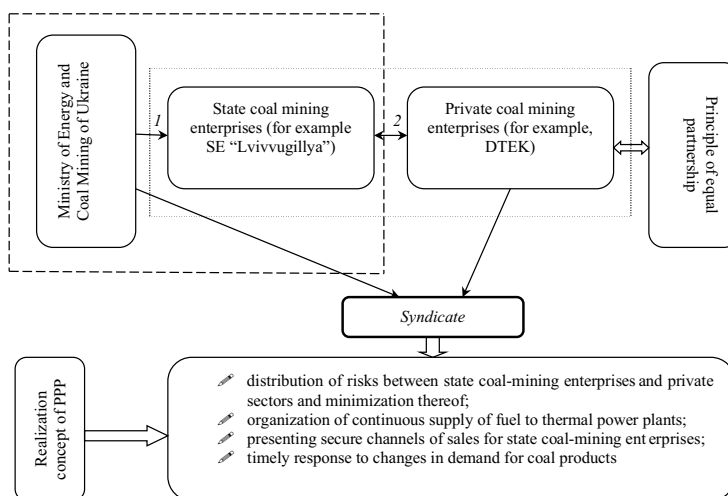
Therefore, as of today there is no convenient organizational structure of sales management of state coal mining enterprises under control of the Ministry of Energy and Coal Mining of Ukraine. Whereas, according to the Regulations on the Ministry of Fuel and Energy of Ukraine approved by a decision No. 208 of the Cabinet of Ministers of Ukraine dated 29.03.2017, the main functions of the Ministry of Energy and Coal Mining of Ukraine include: rating of priorities for the development of fuel and energy complex; development of forecast balance of coal and coal products; approval of strategic plans of the state enterprises and business entities where corporate laws of the state are exercised; development and implementation of measures on stable functioning of enterprises during special period, etc.

With that in mind, there is a necessity to create based on arrangement of coal mining enterprises of different forms of ownership (for example, SE “Lvivvugillya” and DTEK) (fig. 1).

Table 4: Dynamics of sales parameters of DTEK

Parameters	Year				
	2007	2010	2014	2015	2016
Coal production. th. tons	15789.7	22180.0	37122.0	28692.0	31250.6
Export of coal. th. tons	-	1961.0	4057.1	1387.1	1333.1
Import of coal. th. tons	-	1313.0	1687.0	404.1	222.2

Source: Completed according to information analysis content of DTEK.



Notes: 1 – agreement on estate administration; 2 – joint venture agreement

Figure 1. Mechanism of implementation of public-private partnership during control over sales of coal-mining enterprises entities on the basis of a syndicate as business legal structure

Source: authors' own analysis

Within public-private partnership in the field of mining industry and development of pits, syndicate shall be an effective form of partnership between large vertically integrated companies which at the same time act as producers and consumers of coal products, and state coal-mining enterprises for the purpose of organization, control and regulation of joint sales. It does not contradict current legislation of Ukraine where possibility of merging of enterprises by the industry principle is pointed out.

Considering that SE "Lvivvugillya" is under the management of the Ministry of Energy and Coal Mining of Ukraine, the relations between them shall be governed by the agreement on estate administration. It complies with the Regulations on the Ministry of Fuel and Energy of Ukraine, Art. 1029 of the Civil code of Ukraine, Art. 5 of the Law of Ukraine "On public-private partnership".

According to the Article 1029 of the Civil code of Ukraine under the agreement on estate administration one party (administrator – in this case the Ministry of Energy and Coal Mining of Ukraine) transfers to the other party (to the executive manager of the created coal syndicate with the participation of DTEK) the management of estate of SE "Lvivvugillya" for a definite period, and the second party shall provide management of this estate at a charge in its own name for the benefit of the trustor or

indicated person (beneficiary).

The basic principles of implementation of PPP is the "congruence of interests of the state and private partners for the purpose of mutual benefit; providing high efficiency of activity, rather than carry out such activities by a state partner without resorting to private partners; equitable distribution of risks connected with agreement performance between state and private partners ...".

According to the Article 5 of the Law of Ukraine "On public-private partnership", income shall be distributed between the participants of the syndicate under the terms of a joint venture agreement. In Article 1130 of chapter 77 of the Civil code of Ukraine it is agreed that that under the joint venture agreement the parties (participants) undertake to work jointly without creating a legal entity in the furtherance of the goal. In this case (through the example of a syndicate), without consolidating the deposits of participants for the purpose of the organizing joint sales. The terms of a joint venture agreement, including coordination of the working partnership of the participants, coverings of expenses and loss thereof, contribution to the results of joint venture and so on are specified in the agreement between the parties.

Under public-private partnership of a syndicate control function over sales of state and private enterprises is passed (fig. 2).

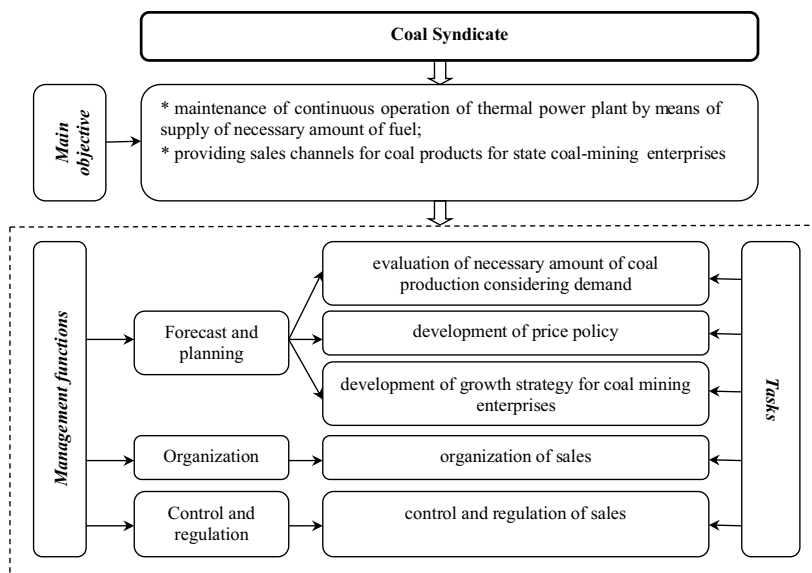


Figure 2. Functional design of coal syndicate activity

Source: authors' own analysis

4. Conclusions

In sum, on the basis of the analysis of the dynamics of parameters of sales of national coal-mining enterprises there were specified current problems of coal product sale in the public sector of coal mining industry. Practical use of organization of syndicate as a form of partnership between large vertically integrated companies which are both producers and consumers of coal products, and state coal-mining enterprises for the purpose of organization, control and regulation of sales is proved. A functional design of coal syndicate operation is offered, including functions and responsibilities for control over sales of enterprises of coal industry.

For the purpose of legal regulation of effective operation of coal syndicate in Ukraine on the principles of public-private partnership it is reasonable to make amendments to the current laws and regulations:

Article 20 of the Commercial code of Ukraine – expand the list of forms of business entity via the example of a syndicate which shall be considered as “an organizational form of variety of the cartel agreement providing sales of products manufactured by participants of the union via a joint sales agency or sales network of one of the participants of the syndicate. Such a form of union is specific for enterprises producing homogenous goods»;

Article 1 of the Law of Ukraine “On coal market” (draft) – includes the definition of a syndi-

cate as an organizational form that unites the coal-mining enterprises for organization and regulation of joint sales on the principles of public-private partnership and also state legal platforms for syndicate operation;

Energy strategy of Ukraine through 2035 – expand the objective of “Development of the energy markets” by such phrasing: “organization and operation of a syndicate as an implementation instrument of the market functioning model of energy markets and satisfaction of needs of national economy with coal products of domestic production to the extent required with the involvement of the private sector;

Article 4 of the Law on Mining of Ukraine – include such objects of mining relations as organization, control and regulation of sales of coal mining enterprises;

Concept of the State target economic program on reforming of the coal industry for the period through 2020 – includes a set of measures on control over sales of coal-mining enterprises on the principles of public-private partnership.

Implementation of the above mentioned proposals will allow to create favorable conditions for economic management of the participants of the coal market, to provide the national economy with own-produced coal of different grades in sufficient amounts at reasonable price and also to increase the level and quality of service for consumers of coal products.

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