

Ключевые слова: органическое производство, органическая продукция, сельское хозяйство, развитие, эффективность.

SUMMARY

Naida A.V. The development of organic production in Ukraine

The article researches the development trends of organic production with the dynamics of areas of organic farmland, organic farms, consumption of organic products in Ukraine. On the basis of the analysis identifies the main factors affecting the development of organic production. Have been determined prerequisites for effective development of organic production based on the analysis of the current state, development trends, regulatory support, and factors influencing it have been ascertained.

Keywords: organic production, organic products, agriculture, development, efficiency.

UDK 620.91(477):339.13

GAS AND COAL MARKET ANALYSIS AND PROSPECTS OF UKRAINE ENERGY EXTERNAL DEPENDENCE REDUCE

L. P. Njepe Fotso

International Humanitarian University, Odessa

Summary. *This article analyses factors that can influence the Ukraine dependence of gas and coal importation from Russia based on the analysis the preconditions of further development of energetic resources. In order to ensure the continuous supply of energy in the economy, Ukrainian solutions are distributed number two forms, namely diversify imports of energy or promote indigenous energy*

sources. Promote energy internal sources it can be by the increase in operating fields of Gas and Oil, Nuclear electricity, Electricity, use of Coal bed methane, Shale and Tight, Solar and Wind, Coal and Bio fuel and Waste.

Keywords: *market, gas, coal, import-export, reduction, consumption.*

Introduction. According to estimates of the Working Group of the Coal Energy Committee ECE coal provides about 27 % of total world energy production, and adds to gas in Ukraine there represents more than 50 % of total energy consumption. During these ten years the Energy prices have increased considerably, in Ukraine particularly the price of natural gas and coal, imported from Russia and South Africa and other's countries. Natural gas is the main energy in Ukraine, contributing about 41 % to the final energy consumption. Only 30 % of the consumed volume is produced domestically and 70 % are imported. Because of that the current challenge is a very high price of NG that puts Ukraine's industry on the verge of its viability. In 2012 coal production in Ukraine amounted to 85.946 million tonnes, up 4.8 % from 2011. In 2003, Ukraine produced 79.3 million tonnes. Ukraine in 2013 saw a 2.6 % decline in coal production from 2012, to 83.698 million tonnes. In July 2014 several mines were closed in Eastern Ukraine because of fighting during the 2014 pro-Russian conflict in Ukraine. Because of this War in Donbas (according to the Ukrainian Energy and Coal Industry Ministry) raw coal production in Ukraine dropped by 22.4 % from 2013, to 64.976 million tonnes. As a result, Ukraine began importing power-generating coal from South Africa and Russia.

Analysis of the latest researches. Works of such scientists as Ilona V. K., G.Zachman, D. Naumenko, S. Pirani, Arkadiusz S. and others are devoted to market researches and analyses of coal products including Ukrainian ones [1, 2, 3].

According to Oxford Institute for Energy Study, the change of government in Kyiv, the Russian military action in Crimea, the Diplomatic reaction by the Western Powers, and the perceived danger of War, clearly have implication for economic relation between Russia, Ukraine and Europe , especially in energy sphere, because

Russia supplies about 30 % of Europe's natural gas and between 60 % - 50 % of Ukraine's natural gas [4].

The purpose of this article is to study the Ukraine's gas and coal market at first at the end to propose different opportunities to reduce the dependence of Russia gas importation and coal.

The results of research.

1. Gas market

In Ukraine gas energy, is the primary energy most used.

1.1 Gas producers and consumers

1.1.1 Gas producers

There are more than 15 companies in the independent sector, and most are domestic Ukrainian companies, although total annual production varies between 15-25 billion cubic meter due to the lower production, consumption gap is filled by importing gas from Russia, which results in a price structure varies depending on the type of consumer (tab.1).

Table 1

Gas production by companies

Companies		2007	2008	2009	2010	2011	2012	2013
Volume imported (bcm)		50.5	54.6	26.95	36.47	44.8	32.94	27.9
1	Natfogaz Ukraine (Russia gas)*	50.5 9	54.6	26.95	36.47	40	24.89	12.9
2	Natfogaz U and traders (reverse flow)	0	0	0	0	0.05	8.00	12.9
3	Ostchem Holding	0	0	0	0	4.8	8.00	12.9
Total gas consumption (bcm)		71.1	67.5	53.1	59	61	54.8	50.3

Source: Energobiznes/energy ministry. /Prices: press reports/Naftogaz Ukraine

1.1.2 Gas consumers

There 3 types of consumers: Industrial, Residential and District heating utilities. Ukraine's domestic gas market of approximately 55 Bcm annually (not including pipeline system use and losses):

– Industrial customers: They make up about 45% of the market. We have different sector like: Chemical Sector (approximately 8.0 to 8.5 Bcm annually); Metals Sector (approximately 8.5 to 9.5 Bcm annually); Power generation sector

(from 12 Bcm in year 2000 to 3 Bcm in year 2010) and others industry (from 50 to 300 M/bcm from region to region)

- Residential customers: They make up respectively about 35% of the market.
- District heating utilities and 20% of the market. The combined gas consumption of district heating companies and the residential sector account for half of total gas consumption in Ukraine.

1.1.3 Gas price

The Ukraine consumes about 60 billion cubic meters (Bcm) of natural gas per year, making it one of the largest markets in Europe. Ukraine imports approximately 65 % to 70 % of this volume.

The regulator for the Ukrainian gas sector, the National Electricity Regulatory Commission (NERC) sets domestic tariffs on the basis of cost-plus methodology, taking into account categories of users and volume of consumption (for residential users). There are three distinctly different regulated gas price tiers in Ukraine: for industrial users, for residential users (population), and for district heating utilities providing heat to the population. The evolution of these three prices is shown in during 2001-2006 the price of NG was quite stable (about 60 \$/1000 m³ – an average wholesale price at the border on Russia), it began rapidly rising since 2006 and came to about 229 \$/1000 m³ in 2009 that is nearly 4 times higher than it was before.

2. Coal market

The world's industries use three types of coal: Thermal coal, Coking coal and Anthracite coal. All extracts in Ukraine. Like any other market the coal market develops under the laws of supply and demand, so there is a need to analyse coal producers and consumers.

2.1.1 Customer's

It is known that world's industry uses three types of coal: thermal, coking and anthracite coal. All these three types are extracted in Ukraine. Consumers differ depending on the type of coal.

Ukraine's coking coal is primarily used by the domestic iron and steel industry which collectively account for approximately 90% of the total coking coal demand. The remainder is consumed by the foundry industry and other small industrial users.

Domestically, the Anthracite coal output is consumed by the energy-generating companies. The balance is distributed to metallurgical plants (4%), individuals (3%), cement producers, soda and sugar mills, ore enrichment works and railways.

The statistic of Ukrainian coal market importation/exportation to 2007-2015 showed that, the importations of Anthracite and Cook Coal increases every year except for the thermal coal (tab.2). There are imported, mainly from Russia.

Table 2

Statistic of Ukraine coal market import/exportation 2007-2014

Coal types	2007	2008	2009	2010	2011	2012	2013	2014	2015 Fore-casting
Export									
Anthracite	2 688	3 455	3 071	5 070	5 714	5 552	5 887	4 234	0
Coking	118	197	453	257	285	164	680	959	418
Thermal	815	1 136	1 752	836	959	362	1 474	1 315	130
Import									
Anthracite	156	40	10	12	18	14	20	2 041	1 161
Coking	8 565	7 173	5 341	7 747	9 909	11 640	11 998	10 851	10 502
Thermal	4 425	5 563	2 342	3 801	2 782	2 780	1 963	1 673	2 928

Source: *www.metalexper-group.com* [4]

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 was imported and 9.1 million tons of coal for coking.

2.1.2 Coal producers

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)

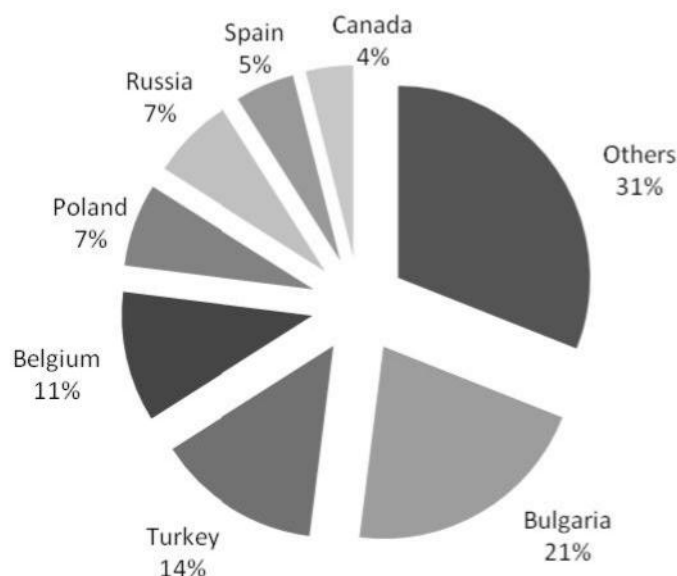


Fig. 1. Breakdown of Ukrainian steam coal export in 2012

Source: HIS CERA [5]

2.1.3 Coal price

One of the important factors for consumers (domestic producers of coke, metallurgical and energy plants) is the price of coal (tab. 3,4). Coal prices depend on its quality, the type, transportation costs and other conditions. Prices for power coal are usually adjusted according to its calorific value.

Table 3

Domestic and export prices for Coking coal (May 2011)

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

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.

Table 4

Domestic and export prices for Power coal (May 2011)

Market	Price with VAT,\$/t
Ukraine on the basis of 5000-5500 Kcal/kg	68-72
FOB Riga	103-110
FOB Vostochny	245-250
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 stabilizes. 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.

Conclusion. We have developed alternative scenarios for Ukrainian gas demand. In the highest case, demand grows to 73 Bcm by 2030; in the lowest case, it declines to 55 Bcm. In the base case scenarios, however, Ukrainian consumption of gas will be flat or show very slight growth during this

In order to ensure the continuous supply of energy in the economy, Ukrainian solutions are distributed number two forms, namely diversify imports of energy or promote indigenous energy sources.

Ukraine is currently (almost) only able import gas from the East, which is the direction the existing system was initially designed for. However, various alternative options have been theoretically explored (contractual reverse flows, alternative pipelines, LNG terminal) or even practically tested.

Promote energy internal sources it can be by the increase in operating fields of Gas and Oil, Nuclear electricity, Electricity, use of Coal bed methane, Shale and Tight, Solar and Wind, Coal and Bio fuel and Waste. Due to some constraints such as the amount (composition drifts), quality (production), the environment (pollution), memories (the 1986 Chernobyl disaster in Northern Ukraine).

In view of the global growth in energy consumption, the agricultural potential of Ukraine, financial and technological issues regarding this solution, which seems will be our next publication.

References

1. Ilona V. K. (2012) Coal Market of UKRAINE analysis and development background, Volume LVIII (2012), No.1, p. 18-21, ISSN 1802-5420.- Access mode: <http://gse.vsb.cz>
2. Arkadiusz S. (2013) Closer cooperation with Gazprom or a genuine diversification” Kyiv’s gas strategy”.- Access mode: www.osw.waw.pl
3. Simon, P. James, H. Anouk, H. Howard, R. Katja, Y. (2014). What the Ukraine crisis means for market. Oxford: Oxford University Press.
4. Statistic of Ukraine coal market import/exportation 2007-2014.- Access mode: www.metalexper-group.com
5. IHS CERA & Ministry of Energy and Coal Industry of Ukraine (2012) Natural Gas and Ukraine’s Energy Future. February 2012.- Access mode: <http://www.kmu.gov.ua/control/uk>

Анотація

Нжепе Фотсо Лева Поль. Аналіз ринку вугілля і газу та перспективи зниження зовнішньої енергетичної залежності України

Розглядається можливість диверсифікації імпорту енергоносіїв або просування власних джерел енергії. Розглянуто різні альтернативні варіанти використання енергоносіїв за рахунок внутрішніх джерел, що може відбутися за рахунок збільшення експлуатації родовищ нафти і газу, ядерної електроенергії, електрики, вугілля, сонячної та вітрової енергії, а також

біопалива і відходів вугілля. Деякі з них пов'язані з обмеженнями, такими як кількість, якість (виробництво), охорона навколишнього середовища (забруднення) з урахуванням глобального зростання споживання енергії, сільськогосподарського потенціалу України, фінансових і технологічних питань.

Ключові слова: *ринок вугілля і газу, енергетична залежність, диверсифікація імпорту енергоносіїв*

Аннотація

Нжсене Фотсо Льва Поль. Анализ рынка угля и газа и перспективы снижения внешней энергетической зависимости Украины

Рассматривается возможность диверсификации импорта энергоносителей или продвижение собственных источников энергии. Рассмотрены различные альтернативные варианты использования энергоносителей за счет внутренних источников, что может произойти за счет увеличения эксплуатации месторождений нефти и газа, ядерной электроэнергии, электричества, угля, солнечной и ветровой энергии, а также биотоплива и отходов угля. Некоторые из них связаны с ограничениями, такими как количество, качество (производство), охрана окружающей среды (загрязнение) с учетом глобального роста потребления энергии, сельскохозяйственного потенциала Украины, финансовых и технологических вопросов.

Ключевые слова: *рынок угля и газа, энергетическая зависимость, диверсификация импорта энергоносителей*