

Economic Factors for the Development of the Bulgarian Oil and Gas Industry

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Abstract

The Oil and Gas Industry is an important branch of the Bulgarian economy. The factors, driving the development of the sector and its companies, include the global market tendencies and demand, specific conditions for business initiatives and launching projects, etc. The aim of the paper is to show some indicators of Oil and Gas Industry of the Republic of Bulgaria and to draw some economic impacts on the improvement of performance and implementation of the sector's long-term plans, contracts and relationships in development. The main problematic issues of the Bulgarian Oil and Gas industry refer to its dependence upon importers from other countries, the gap between the official expertise (communicated mainly through internet formal documents and official websites of the Bulgarian Oil and Gas companies) and the sector's priority for the economy, etc. The factors of influence on Oil and Gas Industry of the Republic of Bulgaria could not be unambiguously specified, but they include the global market tendencies, competition in the sector, the launching projects according the Bulgarian government policy and priorities, the prerequisites for improvements in qualification of experts and companies, the implementation of new technological solutions, etc.

Keywords

Oil, Gas, Industry, Balkan Gas Hub, The Republic of Bulgaria

1. Introduction

Bulgartransgaz EAD is a sole owner joint stock company and a fully-owned subsidiary of the 100% government-owned Bulgarian Energy Holding (BEH) whose principal is the Ministry of Energy of Bulgaria. It has submitted its “2017-2026 ten-year network development plan” in April, 2017. Bulgartransgaz EAD is a combined gas operator carrying out natural gas transmission and

storage activities. The company is an owner and operator of the national gas transmission network (NGTN), the gas transmission network for transit transmission (NGTNTT) and the underground gas storage Chiren. According to the experts of the company, oil and gas industry in Bulgaria could be introduced with some official data and facts referred to the economic impacts of the sector on the energy system of Bulgaria and markets of oil and gas products.

Natural gas consumption in Bulgaria in 2016 is 3068 bcm (billion cubic metres), which indicates an increase of 3.6% compared to the consumption in 2015 (2961 bcm). The growth in consumption is a consequence of increased exports by the industry and the decreased prices of the natural gas due to the low oil and petroleum products prices that are the cost factor in the long-term contracts with Russia [1]. Another data of World Oil and Gas Review 2016 include the production of natural gas in billion cubic metres (bcm) of Bulgaria which is 0.19 bcm for 2015 (0.071% of the common production of natural gas in Europe for 2015). The reserves of natural gas in Bulgaria are 5 bcm at 31st of December, 2015 (0.105% of the common reserves of natural gas in Europe for 2015) [2].

Data of the Total Energy Balance of the National Statistical Institute shows that the natural gas share in the end energy consumption (EEC) is 14.4% in 2015, which is an 1.2% increase compared to 2014 (13.2%). The main natural gas consumers are trade companies from the Energy and Chemistry Sectors as well as the Distribution System Operators (DSO)—the end suppliers. Bulgartransgaz EAD has concluded that “there is a very high energy dependency in Bulgaria in 2016 regarding natural gas supplies—97.7%. Based on forecast data, the import dependency will continue to be within the limits of 97% - 98%. To date, no important natural gas fields have been found in the Republic of Bulgaria and natural gas consumption in the country is mainly secured through gas imports by one main source—the Russian Federation. Natural gas reaches Bulgaria, mainly following the route through the territories of Russia, Moldova, Ukraine and Romania” [1].

Boyko Nitzov, Ruslan Stefanov, Valentina Nikolova, and Dobromir Hristov [3] estimate proved domestic oil resources as very limited (about 15 million barrels) and production as marginal. Import, export, and trade in crude oil and refined products are completely liberalized. According to the experts, all of the crude oil and considerable quantities of refined products are imported from Russia. On the other hand, Russia’s imports from Bulgaria are marginal, leading to a substantial imbalance in bilateral trade and in Bulgaria’s external accounts. Net imports of mineral fuels, oil and electricity run at about 2 billion per year” (data from 2010). World Oil and Gas Review 2016 has summarized some statistical data for Bulgaria, including *the production of crude and non-conventional oil and natural gas liquids* (1 thousand barrels per day for 2015 which is 0.027% of the common production of crude and non-conventional oil and natural gas liquids in Europe for 2015); *consumption of oil* (89 thousand barrels per day for

2015 which is 0.596% of the common consumption of oil in Europe for 2015); *reserves of oil* in Bulgaria (15 barrels at 31st of December, 2015 which is 0.13% of the common reserves of oil in Europe for 2015) [2].

According to the European Commission (23rd of November, 2017) [4], on the positive side, Bulgaria is a member of the Central Eastern and South Eastern Gas Connectivity (CESEC) regional initiative and 3 of the 7 high priority infrastructure projects in the CESEC region relate to Bulgaria. They include the interconnector Greece—Bulgaria, the interconnector Bulgaria—Serbia and the phased reinforcement of the Bulgarian grid. The inter-system gas link between Bulgaria and Romania is operational since 2016. Bulgaria has also reinforced several critical internal grid elements and awaits important results of seismic studies in several offshore blocks on the Black Sea.

2. Factors of Influence on Oil and Gas Industry in Bulgaria

The European Commission expects natural gas demand in Europe to remain fairly stable until 2030 [5]. Europe-wide shift to renewable energies, natural gas as a lowcarbon energy source, and improvements in energy efficiency determine natural gas demand. On the other hand, the market for energy set the course of the Bulgarian oil and gas sector's performance in some directions as the export of electricity in Southeast Europe, exploitation of natural resources, supply of equipment and technologies, use of renewable energy sources (solar, hydro, biomass, geothermal, wind), etc. According to experts of the Danish Embassy in Sofia from 2016, Bulgaria is currently ranked as number 44 on the Energy Architecture Performance Index Report 2016 with a benchmark of 126 countries, which indicates that Bulgaria is improving its energy efficiency compared to previous years [6]. However, it is concluded in the report of the Danish Embassy in Sofia and predicted by the experts that as Renewable Energy Sources are still considered too costly, Bulgaria's primary energy sources will still be oil and natural gas in the foreseeable future. The recommendation for the energy efficiency is referred to the improvement of modern technologies and installation in the enterprises.

As the EU's production is expected to decline significantly, natural gas imports need to be increased in order to meet demand, which has been concluded in Varna meeting of European Commission in 2016 [5]. There are some contradictions about the priorities of projects and development of relationships which make it difficult to reach a decision about the future initiatives and diversity resources of the Oil and Gas Industry enterprises in Bulgaria.

The production of Oil and Gas Industry in Bulgaria is insufficient. Some official data of the Bulgarian National Statistical Institute for the eight months of 2017 have illustrated the production curves of refinery gas and of liquefied petroleum gases (**Figure 1, Figure 2**).

The production of refinery gas and liquefied petroleum gases is insufficient according to some representatives of Bulgarian energy experts and it could not

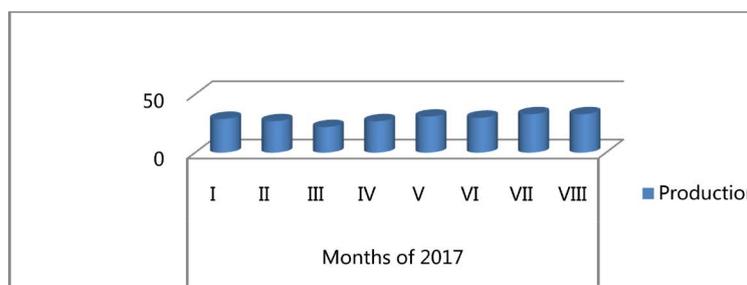


Figure 1. Production of refinery gas (in thousand tones) [7].

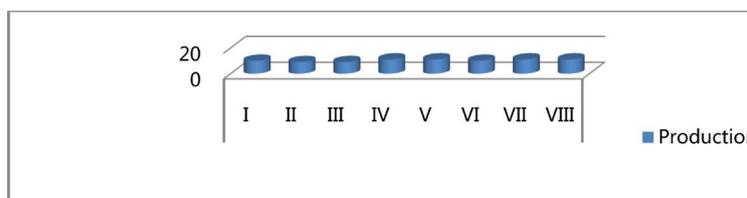


Figure 2. Production of liquefied petroleum gases (in thousand tones) [7].

cover the requirements and necessities of the Bulgarian economy which is in a great dependence upon the imports of such products mainly from the Federation of Russia.

These prerequisites create an intense competition in the sector. There exists a high concentration of market power in only one player - *Bulgartransgaz EAD* and the vulnerability of dependence increases. There are several main operators in the oil and gas sector in Bulgaria. The most significant one is *Lukoil Neftochim Burgas JSC*, which is one of the biggest refineries in Central and Eastern Europe and it imports and refines oil. Other smaller players in the field are *Petrol JSC*, *Shell Bulgaria Ltd*, *Overgas INC JSC*, *Shell Gas Bulgaria JSC*, *OMV Bulgaria Ltd*, *Eco Bulgaria Ltd*, *Prista Oil Holding*, *Bulmarket DM Ltd*, *V-Gas Bulgaria JSC*, *Gastrade JSC*, *Kalvacha Gas JSC*, *Naftex Petrol Ltd*, *Rompetrol Bulgaria JSC*, *Insa Oil Ltd*, and *Synergop Petroleum Ltd*.

In a specific market situation, Bulgarian Petroleum and Gas Association was established in 1999 by the major companies active in the Petroleum and Gas industry in Bulgaria—“*Petrol*” *JSC*, “*Shell Bulgaria*” *Ltd*, “*Overgas INC*” *JSC*, “*Shell Gas Bulgaria*” *JSC*, “*Toplivo*” *JSC*. The Association was founded under the conditions of State monopoly in the petroleum industry. “The dominating position of the biggest State-owned refinery ‘Neftochim’ and the non-privatized distributor ‘Petrol’ determined the unequal basis for the players on the petroleum market. In this atmosphere, the main task of the Association was predestined—to contribute to the process of demonopolisation of the petroleum industry and to the promotion of the Constitutional right of free business initiative. The organisation took an active part in the subsequent events and nowadays the prices of the fuels are liberalised and subject only to the regulation of the market principles. Now both ‘Neftochim’ and ‘Petrol’ are private and they follow the rules of the market economy” [8]. Nowadays, *Bulgarian Petroleum and Gas Association* is a non-governmental organization about trading and

distribution with liquids and gas. Its goals include the interests' protection of the distributors, producers and retailers of petroleum and gas products, development of petroleum and gas trade and industry in Bulgaria by reaffirming the equal status of economic subjects and fair competition. In the recent years, members of the Association are *Bent Oil Ltd*, *Bulmarket DM Ltd*, *Eco Bulgaria Ltd*, *Gastrade Ltd*, *Litex JSC*, *Lukoil Bulgaria Ltd*, *Lukoil Bulgaria Bunker Ltd*, *Lukoil Neftochim Burgas Ltd*, *NIS Petrol Ltd*, *OMV Bulgaria Ltd*, *Petrol Ltd*, *Prista Oil Holding JSC*, *Romp petrol Bulgaria Ltd*, *Insa Oil Ltd*, *Synergion Petroleum Ltd*, *Shell Bulgaria JSC*, and *V-Gas Bulgaria JSC*.

3. The Balkan Gas Hub—The New Project of Bulgartransgaz EAD

Alexander Kovacevic (Oxford Institute for Energy Studies, 2017) considers that South Eastern Europe (SEE) is served by an opaque energy market. Market transparency is constrained by executive government control over statistical and other regulatory institutions, the deterioration of professional associations and limits to public participation. Governments are deeply involved in commercial transactions and focused on (natural resource and transit) rent seeking, which discourages innovation and market development. The rule of law, including enforcement of international legal compacts, is arbitrary and constrained. There are massive barriers to entry [9]. According to the expertise, the European Union (EU) is engaged to the Balkan region as an option to improve its security of gas supply and diversify its supply portfolio. The other goal of this intense cooperation is the encouragement of local communities to maintain transit rents and is based on the assumption that the region may include the Southern Gas Corridor, the North-South Gas Interconnection and the Central/South Eastern Electricity Interconnection. Alexander Kovacevic has noticed that there are more overlapping energy transit projects being considered than that in any other region in Europe. He proposed in his paper a realistic roadmap that is able to overcome existing barriers and provide the desired level of security of supply.

First: Gas consumption that does not yield positive economic returns is to be phased out by energy efficiency, use of renewable energy and opening to international markets. This is sufficient to eradicate the immediate security of supply risks and establish a framework for the commercially sound use of gas;

Second: Flexible Black Sea & Balkans (BS & B) Gas Hub through the improved use of existing infrastructure;

Third: BS & B Gas Hub facilitates gas trade with the rest of Europe that promotes more efficient use of gas, market opening, industrial restructuring and increased renewable energy integration—all beyond the expectations indicated in various current strategic documents. A BS&B Gas Hub is envisaged as a private commercial undertaking in order to increase the liquidity at BS&B Gas Hub and attract commercial supplies from the Black Sea basin.

This Roadmap intends to unlock improvement in the quality of governance,

commercialize weighted average cost of energy (WACE), decrease weighted average cost of capital (WACC), reduce uncertainties and facilitate investments. Economies will benefit from the better utilization of dormant capital, improved liquidity and hardening of budget constraints [9].

It could be concluded that parties of interest in oil and gas industry and its projects of Bulgaria participate in the development of the environment and generate socio-economic impacts on the market tendencies, national priorities of the energy policy, the consumption and choices of Bulgarian residents.

The gas infrastructure indicates some important projects of *Bulgartransgaz EAD* refers to the major activities for the development of *Bulgartransgaz EAD* (Figure 3) and includes interconnections with the neighboring countries; modernization and rehabilitation of the existing gas transmission infrastructure; expansion of the existing gas transmission networks to new regions of the country; expansion of the natural gas storage capacity; Gas hub Balkan; Eastring.

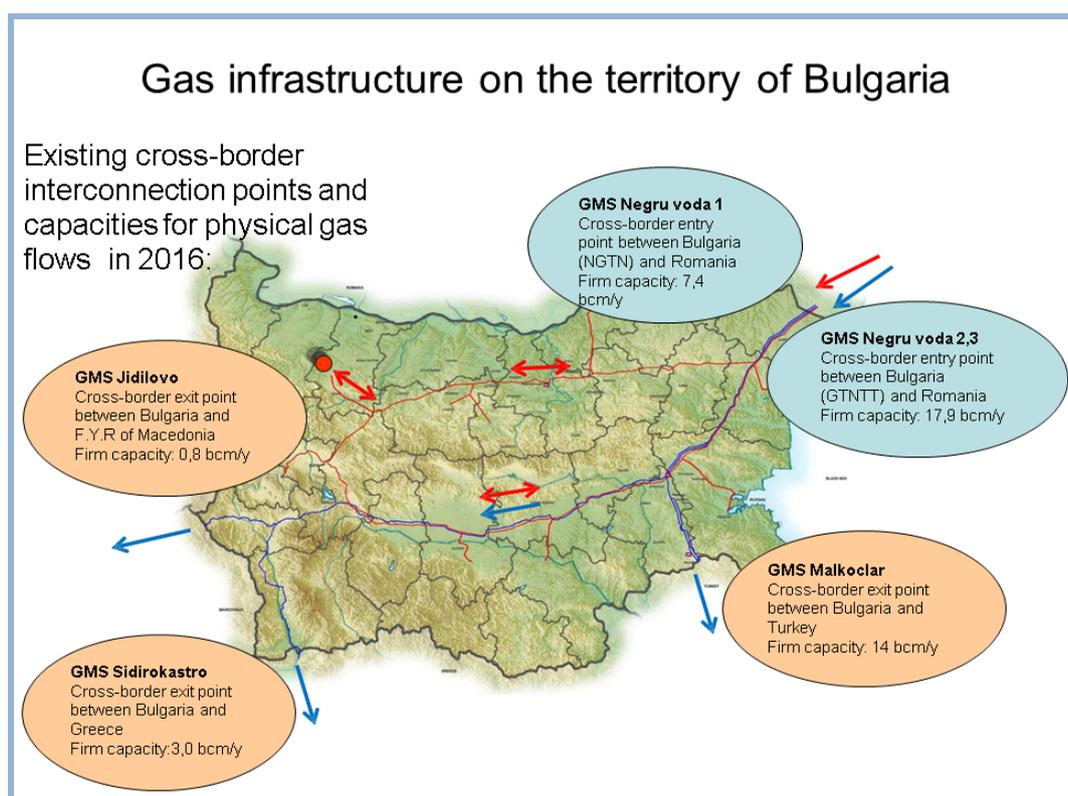


Figure 3. Bulgartransgaz EAD network development plans [10].

The concept for the construction of a gas distribution centre (hub) on the territory of Bulgaria is working out that specifies the idea significant gas quantities from different sources to enter a real physical point in the region of Varna for further transport and gas trade. It will enable at the same time an organization at this point—a hub where each market participant could trade with natural gas at market principles. The construction of a gas hub is favourable because of the strategic geographical location of Bulgaria, well-developed

existing gas infrastructure for transmission and storage and the interconnection projects with Romania, Turkey, Greece and Serbia.

In the context of the European objectives for establishing an interconnected pan-European gas market, the realization of the gas hub concept is in line with the Southern Gas Corridor development projects as well as in full compliance with the plans for the development of the European gas infrastructure, aiming to improve the security of supply and diversify natural gas supply sources. The project corresponds to the needs of the region as identified by the High Level Group on Central and South Eastern Europe Gas Connectivity (CESEC) and by the European strategy for the Energy Union [11].

Some considerations about the future plans of investors in gas pipelines were suggested by Jean-Pierre Schaecken Willemaers (Institut Thomas More, 2014) [12], who gave a warning of the Ukrainian lesson and the necessity of political stability and reliability of the transit countries. Willemaers considered that the diversification of gas routes is of the essence. This concerns piped gas from Russia and from the Caspian area over Europe. It also means that transit through Turkey should be carefully assessed to avoid the Ukrainian trap [12].

The important gas routes to Europe which has an economic impact on Bulgarian oil and gas industry and on Balkan Gas Hub in particular could be summarized as follows.

South Stream is intended to transport Russian natural gas across the Black Sea to Bulgaria, Serbia, Hungary, Slovenia and Italy as well as to Austria and Greece, with planned branches to Croatia and Bosnia and Herzegovina. For the implementation of the onshore section of the project, intergovernmental agreements have already been signed with the most of the mentioned countries. This route avoids both Ukraine and Turkey. However, while South Stream could lower the risk of gas shortages caused by problems in Ukraine, there are serious concerns that it could cause the Balkans and parts of Central Europe to be even more reliant on Russian Public Joint Stock Company Gazprom. He thinks that the alternatives to meet the rising gas demand are restricted.

Southern Corridor Pipelines—the corridor includes three main pipelines: the South Caucasus Pipeline (SCP) through Azerbaijan and Georgia, the Transanatolian Pipeline (TANAP) from Georgia to Europe border through Turkey and the Trans Adriatic Pipeline (TAP project) across Greece, Albania to Italy. The Trans Anatolian Natural Gas Pipeline Project (TANAP project) was designed to transport Azeri Shah Deniz gas from the Turkish-Georgian border to Turkey's border with Europe—Komotini. The intergovernmental agreement on the TANAP project has been signed in June 2012 between Turkey and Azerbaijan.

4. Conclusions

John England from Deloitte Center for Energy Solutions has described 2016 as the year of tough decisions and defines 2017 as the slow road back [13]. Supply

and demand balances are still slow to return to a sustained equilibrium. The Organization of the Petroleum Exporting Countries (OPEC) has decided to announce production cuts. Global and US oil demand increases and continues to be moderate but steady growth. Oil companies operate in different environmental conditions characterized by lower prices and concentration efforts to focus on capital and operating cost discipline. The climate changes' discussions, the rise of the electric vehicle, self-driving vehicles, and ride sharing indicate a forthcoming growth in the global demand of oil products. According to the analysis of the Russian Public Joint Stock Company LUKOIL [14], Saudi Arabia refused to cut its production, concerted about its market share, which resulted in a steep drop in oil prices. In 2015, international sanctions against Iran were lifted and the increase in its production intensified the competition in the over-supplied market. The cost of power generation from renewable sources reduced, which created favorable conditions for active development of the electric transportation market. The 21st UN Climate Change Conference approved an agreement on the scope of international cooperation in greenhouse emissions reductions in the following 2020. Future trends are liable to occur, such as a growing necessity of a significant amount of energy and energy mix, low cost suppliers, long-term investment plans, planning, implementation and achievement of the seventeen sustainable development goals of the Global Oil and Gas Industry Association for Environmental and Social Issues, etc.

It could be concluded that the Oil and Gas Industry of the Republic of Bulgaria is a part of a fast growing global industry with specific activities and complex decisions. The economic factors for the development of the sector and projects create prerequisites for improvements in qualification of experts and companies, in the application of update technologies and in the pursuit of priorities and energy policy.

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