

## The Impact of Strategically Important Sectors of Industry on the Socio-Economic Development of Russia: The Case of Gas Industry

<sup>1</sup>D.V. Rodnyansky, <sup>1</sup>Y.S. Yasnitskaya, <sup>1</sup>A.M. Khamidulina and <sup>2</sup>I.N. Makarov

<sup>1</sup>Institute of Management, Economics and Finance, Kazan Federal University,  
420008 Kazan, Russia

<sup>2</sup>Financial University Under the Government of the Russian Federation,  
Lipetsk Branch, 398055 Lipetsk, Moscow, Russia

---

**Abstract:** One of the main issues of the development of economic system of the country is the efficiency of its main sectors of industry. One of the most important tasks of the state authorities is to make strategically important sectors transparent, efficient and well managed. The level of investments, technologies and recourses used in these sectors are one of the key indicators used by national authorities to assess the quality of governance. The extension of the indicators, over which affected strategically important sectors of the Russian economy will allow to build more reliable and close to the reality of the path of movement, development and Russia's positioning in the world space.

**Key words:** Strategically important sectors of economy, energy sector, energy policy, efficient, assess

---

### INTRODUCTION

One of the most important part of the economic policy of any country is its strategically important sectors of industry. A necessary condition for the development of the economy is effective management in these important sectors. It is achieved through growth in realized investment resources and their most effective use in the priority spheres of material production and social sphere.

Along with this in the literature there are different points of view on the problem of energy sectors and their roles in stability of national economics. Some researcher believe that the main issue is to ensure a balance between exports and imports of resources (Schipperus and Mulder, 2015; Chakraborty *et al.*, 2015; Zavaleta *et al.*, 2015) while others placed more emphasis on diversification of structure of national economics and territorial marketing (Massol and Estanol, 2014; Bagautdinova *et al.*, 2012). Many researcher and scientists speak about the importance of increasing the efficiency of management in national strategic and energy companies (Ike and Lee, 2014; Muslimov, 2014). They believe that good management is the main factor of success in socio-economic development.

Other researcher, however, believe that the scope of traditional fuel goes to the past and the future is in the new forms of energy because of the importance of ecological balance on the planet (Hazrat *et al.*, 2015; Thurner and Proskuryakova, 2014). And also there are some interesting cases of companies in Asian and American regions in transformation their industry sectors (Lai and Warner, 2015; Sato, 2015; Lopez and Vasquez, 2014). Forecasting the development of the gas industry in the world is carried out by such leading organizations, departments and the largest companies such as the IEA, the US EIA, OPEC. They predict that in the period until 2040 Russia's role in the world gas industry (production and consumption) will not change much compared to current levels (Table 1).

However, the projections traced the gradual decline in the share of Russia in terms of "natural gas production" (from 19.2% in 2012 to 17.2-17.9% in 2020 and 14.6-15.9% in 2040 ) which is associated with advancing development of other centers of gas production. Due to forecast strong growth of gas consumption in developing countries, the share of Russia in the world in terms of "gas consumption" also tends to decrease which opens horizons for Russia to meet the needs of these countries both raw materials and the products of its processing.

**Table 1: Indicators of development of the gas industry and its share in the world according to various forecasts**

The source of the forecast	Years	Natural gas			
		Extraction		Consumption	
		Billion m <sup>3</sup>	World (%)	Billion m <sup>3</sup>	World (%)
IEA	2020	667	17.2	455	11.8
	2040	788	14.6	603	11.2
US EIA	2020	No information	No information	No information	No information
	2040	No information	No information	No information	No information
OPEC	2020	No information	No information	No information	No information
	2040	No information	No information	No information	No information
Russian Academy of Sciences (AC ERI)	2020	713	17.9	507	12.6
	2040	844	15.9	554	10.4
Fact	2012	658	19.2	471	13.7

**MATERIALS AND METHODS**

In the Russian Federation gas industry development up to 2030 is reflected in the documents on strategic planning the energy strategy, as well as in the general scheme for gas industry development. These documents define the development vector of the gas industry in the country, the main intermediate target parameters and mechanisms for achieving them. They include numerical indicators of the gas industry development (on extraction, processing, domestic consumption, exports, imports), as well as the necessary measures to achieve these indicators. In these documents predicting performance is a prerequisite for the development of strategic directions of development of the industry. To determine the degree of complex influence of the performance activity gas industry’s companies on socio-economic development of the country and development of proposals on improvement of sector management on the basis of the obtained results, we have estimated the assessment of the impact of the multiplier effect of the gas industry on socio-economic development of the country.

To identify dependencies between the level of the gas industry development and the socio-economic development of Russia were analyzed two groups of indicators for the period 2009-2014: the indicators characterizing the activities of companies of the gas industry: the volume of extraction of natural and associated petroleum gas (billion m<sup>3</sup>), the volume of extraction of combustible natural gas (billion m<sup>3</sup>), the supply of Russian gas for export including LNG (billion m<sup>3</sup>), the supply of Russian gas to the domestic market (billion m<sup>3</sup>), the proportion of gas in the commodity structure of export of fuel and energy products (%), the proportion of gas in the commodity structure of import of fuel and energy products (%), LNG production (million tons), export LNG (million m<sup>3</sup>), investment in gasification of natural gas (billion rub.), the level of gasification of Russian natural gas (%); the value of natural gas (billion

\$), the value of exported natural gas (million \$), the value of exported LNG (million \$), average consumer prices for the gas network a month per person (rub.), the average producer prices flammable natural gas (rub. per thous. m<sup>3</sup>), average prices of acquisition by industrial organizations flammable natural gas (rub. per thous. m<sup>3</sup>), producer price indices for petroleum associated gas (at the end of period, in % to December of the previous period), producer price indices for flammable natural gas (at the end of period, in % to December of the previous period), price indices for purchasing of industrial organizations flammable natural gas (at at the end of period, in % to December of the previous period), the share of gas in GDP (%).

The indicators of level of socio-economic development of the country: Gross Domestic Product (GDP) (trillion rub.), GDP growth (%), exploration work including deep exploratory drilling for oil and gas (thous.m), life expectancy of the population (years), the number of employed in the economy (thous.pers.), the average annual number of employed in the economy including mining (thous. pers.), the number of unemployed (thous. pers.), income of population including the average income per month (rub.), the average monthly nominal accrued wage of employees in the economy (rub.), the cost of benefits and social assistance (billion rub.), the subsistence minimum in average per capita (rub. in month), the turnover of companies engaged in the extraction of fuel and energy minerals (billion. rub.), the volume of shipped goods of own production, works and services in the mining sector (billion rub.), the trade turnover (million rub.), the volume of paid services to the population (million rub.), investments in fixed assets (million rub.), investments in production of fuel and energy minerals (million rub.), financial investments (million rub.), consolidated budget revenues of the Russian Federation (billion rub.), the flow of funds to the pension fund of the Russian Federation (billion rub.).

## RESULTS AND DISCUSSION

As a result, after the calculation of pair correlation coefficients were identified the main indicators, the impact on that for the purpose of stimulating enterprises of the gas industry gives a positive multiplier effect for the development of the Russian economy in general. The strongest impact of the growth in gas production has on financial investments ( $k = 0.87$ ), spending on benefits and social assistance ( $k = 0.83$ ) and the living wage ( $k = 0.83$ ) by which assesses the level of life of the population, the minimum wage is justified and, consequently, regulated wage, pensions and other social benefits and subsidies, implementation of social programs in general. Also, the closest relationship of the indicator "volume of production of natural gas fuel" is viewed with geological exploration, deep exploration drilling for oil and gas ( $k = 0.96$ ), i.e., when working with deep and ultra-deep wells achieved a greater volume of natural gas production. Besides, a strong correlation of this indicator is observed with GDP growth ( $k = 0.94$ ), less strong correlation with indicators of "benefit costs and social assistance" ( $k = 0.84$ ), "financial investments" ( $k = 0.86$ ), "the flow of funds to the pension fund of the Russian Federation" ( $k = 0.83$ ).

The following indicators are the supply of Russian gas exports (including LNG) and supply of Russian gas to the domestic market, the effects of which on all the considered socio-economic indicators are strong ( $k = 0.61 \div 0.97$ ).

These relationships show that the policy of the gas industry coincides with socio-economic objectives of the country. The same can be said about the indicators "investment in gasification of natural gas" ( $k = 0.7 \div 0.99$ ), "the level of gasification of the Russian Federation with natural gas" ( $k = 0.61 \div 0.92$ ), "the value of natural gas" ( $k = 0.55 \div 0.98$ ), "the value of the exported natural gas" ( $k = 0.62 \div 0.99$ ), "the value of the exported LNG" ( $k = 0.72 \div 1.0$ ), "average consumer prices for the gas network a month per person" ( $k = 0.5 \div 1.0$ ), "average producer prices for flammable natural gas" ( $k = 0.37 \div 0.96$ ), "average prices of acquisition by industrial organizations fuel natural gas" ( $k = 0.45 \div 1.0$ ). For all of the listed indicators characterizing the gas industry, tend to have less close ties with a single indicator-GDP growth ( $k = 0.37; 0.42; 0.45; 0.5; 0.55; 0.61; 0.62; 0.7; 0.72$ ).

Given the closeness of the connection between the indicators characterizing the activities of companies of the gas industry, analytical dependences between each of the socio-economic indicators installed (the response function,  $y$ ) and the gas industry indicators factors ( $x_1, x_2, \dots, x_{20}$ ). Prospects for the development of the economy based on the use of the multiplier effect of basic and strategic industries are quite real. Indicators of socio-

economic development of the country depends not only on the commodity segment of the economy, however, on the quality and efficiency of state regulation of strategically important industries largely depends indicators of socio-economic development of the country and its place in the global market.

## CONCLUSION

In this study, the researchers made an attempt to expand the boundaries of strategic government planning and forecasting, inasmuch as currently existing and approved by the government of the Russian Federation strategic guidelines for the development of various industries are a set of scenarios and intentions of the state which does not calculate the impact of these industries on the main indicators of the state development (except of level GDP and economic growth). The extension of the analyzed factors and indicators, over which affected strategically important sectors of the Russian economy will allow to build more reliable and close to the reality of the path of movement, development and Russia's positioning in the world space.

## REFERENCES

- Bagautdinova, N., I. Gafurov, N. Kalenskaya and A. Novenkova, 2012. The regional development strategy based on territorial marketing (the case of Russia). *World Applied Sci. J.*, 18: 179-184.
- Chakraborty, S., Y. Tang and L. Wu, 2015. Imports, exports, dollar exposures and stock returns. *Open Econ. Rev.*, 26: 1059-1079.
- Hazrat, M.A., M.G. Rasul and M.M.K. Khan, 2015. Biofuel: An Australian perspective in abating the fossil fuel vulnerability. *Procedia Eng.*, 105: 628-637.
- Ike, C.B. and H. Lee, 2014. Measurement of the efficiency and productivity of national oil companies and its determinants. *Geosyst. Eng.*, 17: 1-10.
- Lai, H. and M. Warner, 2015. Transformation of China's energy sector: Trends and challenges. *Asia Pacific Bus. Rev.*, 21: 147-153.
- Lopez, V.A. and P.D. Vasquez, 2014. Historic break with the past: The new Foreign investment possibilities in the Mexican oil and gas industry. *Nat. Resour. J.*, 55: 153-179.
- Massol, O. and B.A. Estanol, 2014. Export diversification through resource-based industrialization: The case of natural gas. *Eur. J. Oper. Res.*, 237: 1067-1082.
- Muslimov, R., 2014. Effective oil and gas sector management can be an adequate response to the current challenges to the energy security of Russia. *Oil Ind.*, 5: 26-30.

- Sato, Y., 2015. Survey of recent developments. *Bull. Indonesian Econ. Stud.*, 51: 165-188.
- Schipperus, O.T. and M. Mulder, 2015. The effectiveness of policies to transform a gas-exporting country into a gas-transit country: The case of the Netherlands. *Energy Policy*, 84: 117-127.
- Thurner, T. and L.N. Proskuryakova, 2014. Out of the cold-the rising importance of environmental management in the corporate governance of Russian oil and gas producers. *Bus. Strategy Environ.*, 23: 318-332.
- Zavaleta, A., W.D. Walls and F.W. Rusco, 2015. Refining for export and the convergence of petroleum product prices. *Energy Econ.*, 47: 206-214.