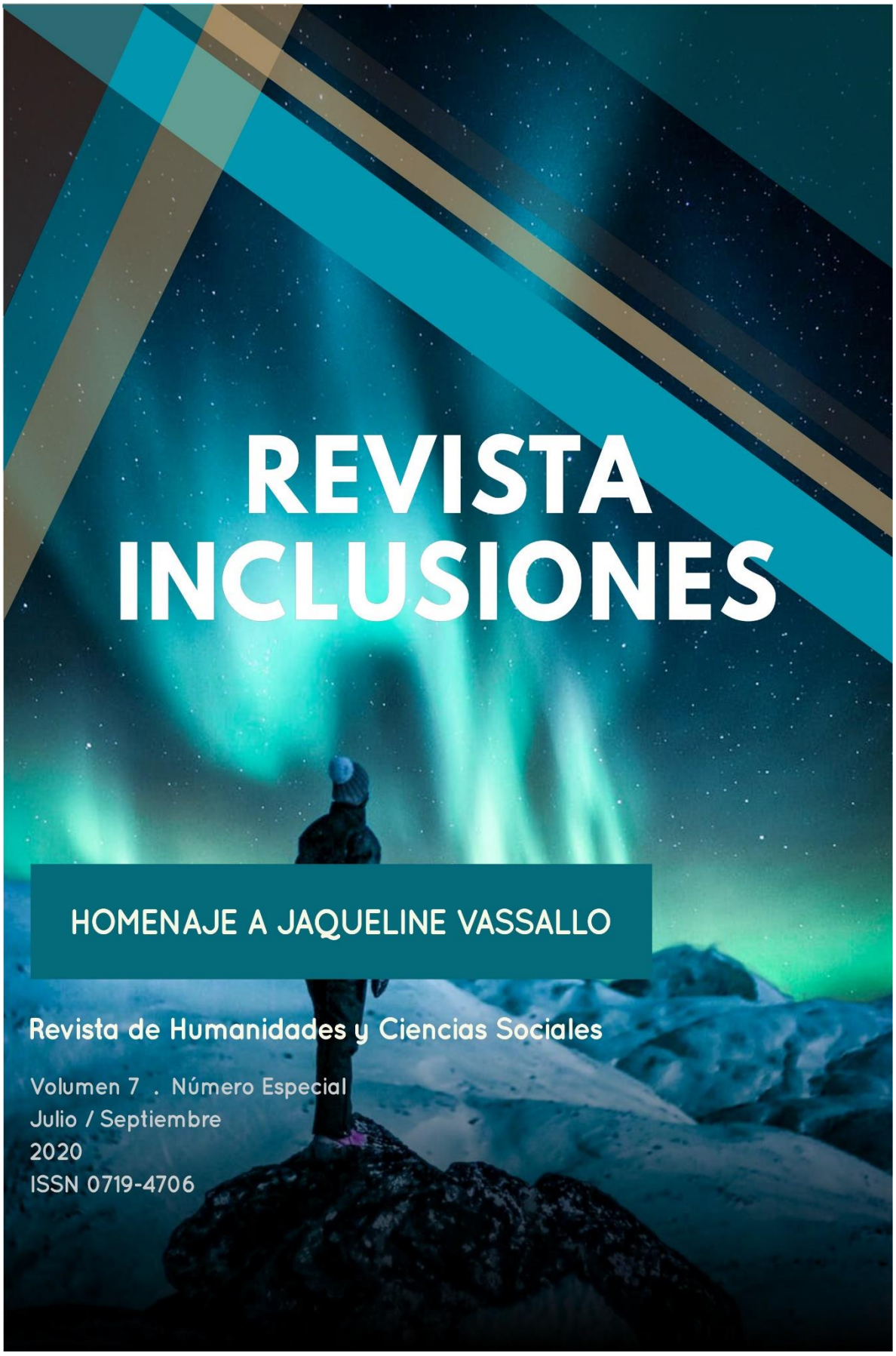

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STRUCTURAL TRANSFORMATIONS OF THE RUSSIAN OIL AND GAS COMPLEX: THE STRATEGIC ASPECT

Dr. Vera Vladimirovna Plenkina
Industrial University of Tyumen, Russia
ORCID ID: 0000-0002-5717-3987
plenkinavv@tyuiu.ru
Dr. Natalia Aleksandrovna Volynskaya
LLC "Fuel and Energy Independent Institute", Russia
ORCID ID: 0000-0001-9502-263X
volynskaya@eif.ru
Dr. (C) Olga Victorovna Lenkova
Industrial University of Tyumen, Russia
ORCID ID: 0000-0002-1027-5492
lenkovaov@tyuiu.ru

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Abstract

The article provides an overview of the key issues engaged in the draft Energy Strategy of the Russian Federation up to 2035. The authors of the present article describe main directions of the structural transformation of the Russian oil and gas complex in the context of its individual segments (exploration and production, processing, and export) which are already being implemented, as well as analyze prospective transformations planned for implementation in the projection period. An assessment is made and a conclusion is drawn about the inconsistency of individual tasks identified in the Energy Strategy. The threats and opportunities contained in the challenges (trends) of the external environment are described in the format of the strategic balance matrix. The authors discuss possible trajectories of further development of the oil and gas sector and their adjustments from the standpoint of the strategic management theory and give comments on the prospects and opportunities of using certain measures reflected in the Energy Strategy of Russia.

Keywords

Energy strategy – Structural transformations – O il and gas complex

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Introduction

The current stage of the Russian economic development is still characterized by a high degree of dependence on the fuel and energy complex, which remains one of the most important sources of budget formation due to tax deductions and export duties. The operation results of the fuel and energy sector in 2018 indicate that Russia ranks 2nd in the world in terms of oil and gas condensate production, as well as in gas production, while in terms of coal production, Russia ranks 4th[1].

In the current context, which is characterized by a high degree of instability, Russia's energy strategy has changed many times. Currently, a draft Energy Strategy has been developed, which defines the priorities and objectives of the energy sector development up to 2035, as well as contains key indicators of its implementation and forecast scenarios[2]. In the analytical and ascertaining part of the draft strategy, it is stated that in the conditions of more than twice the excess of primary energy production over domestic consumption, Russia's leading positions in the world energy trade remain indisputable. This statement is shared by many Russian scientists[3].

It should be noted that the current development stage of the oil and gas sector of the economy is characterized by a high degree of uncertainty and the presence of a large number of strategic threats. At that, its role in the socio-economic and political sphere remains significant. In this regard, the aim of the present study is to formulate the main recommendations for overcoming differences between individual future-oriented solutions based on a detailed analysis of the draft Energy Strategy of the Russian Federation.

Methods

Analysis of the draft Energy Strategy of the Russian Federation up to 2035 allows speaking about the inevitability of serious structural transformations of the sector, which will affect all its components. The projected transformations of the structure (some of which are already being implemented) in the context of the key segments of the complex are presented in Table 1.

[1] Itogi raboty Minenergo Rossii i osnovnye rezul'taty funkcionirovaniya TEK v 2018 godu. Presentation of the Minister of Energy of the Russian Federation A. Novak. Retrieved from: https://minenergo.gov.ru/node/14461

[2] Proekt Energostrategii Rossijskoj Federacii na period do 2035 goda. Retrieved from: https://minenergo.gov.ru/node/1920

[3] A. G. Korzhubaev; L. V. Eder; A. S. Bakhturov; M. V. Mishenin y I. A. Sokolova, “Strategicheskie prioritety i kolichestvennye orientiry razvitiya neftegazovogo kompleksa Rossii na fone sovremennyh ekonomicheskih tendencij. Mineral resources of Russia”, Economics and management num 5 (2009): 37-50; A. A. Nikonova, “Neftegazovye resursy Rossii: ocenki i perspektivy razvitiya toplivno-energeticheskogo kompleksa”, Economic analysis: Theory and practice Vol: 16 num 11(470) (2017): 2064-2082 y Yu. V. Sinyak, “Ekonomicheskaya ocenka potenciala mirovyh zapasov nefti i gaza”, Problemy prognozirovaniya Vol: 6 num 153 (2015): 86-107.

Criteria	The essence of transformations
Exploration and extraction	
1) The size and degree of integratedness of the complex's subjects	The increase in the proportion of crude hydrocarbon extraction by independent companies, not being part of a vertically integrated oil company as well as by small oil companies
2) Extraction geography	Increasing the proportion of products in the Northern regions of the Ural Federal District, the Polar Region, the Volga Federal District, etc.
3) The target products	Increasing the proportion of gas condensate production
4) Quality of extracted products	Growing challenged oil reserves production (shelf, Arctic, Tyumen Suite, hard-to-recover reserves, including high-viscosity, high-sulfur, heavy oil, etc.)
5) Extension of field	Increasing the role of medium and small fields while reducing the proportion of oil production in unique fields
6) The structure of the drilling operations	Reducing the proportion of prospect drilling and increasing the share of exploratory drilling
Oil refining	
7) Oil processing depth and stages	Reducing primary processing volumes (reducing fuel oil production volumes) and increasing processing depth
8) The status of the processing companies	Increasing the role of independent processors
9) Regions of processing location	Increasing regional provision with oil refining capacities. Providing the growth of processing in regions close to the port infrastructure.
Export	
10) The ownership of the transported products	Increasing the proportion of equity oil supplies, decreasing the share of transit supplies of oil
11) The remoteness of foreign supplies	Increasing in the delivery volumes to the countries outside the CIS, and decreasing deliveries to the CIS
12) Delivery destination	Increasing the proportion of exports to the East (Asia-Pacific countries and China)
13) Modes of transportation	Reducing oil supplies to the countries outside the CIS via the Transneft system and increasing transportation volumes via alternative transport systems
14) Types of transported products	Reducing exports of petroleum products while increasing oil supplies

Table 1
Structural transformations of the oil and gas complex

A close examination of the systematization results suggests the presence of some inconsistencies and ambiguity of interpretations, and, consequently, the complexity of solving the problems which are put before the industry for the future. For example, it seems difficult to solve the problem of implementing complex megaprojects with the requirement to reduce the cost of targeted products and services.

To form a holistic strategy for sustainable development, it is interesting and necessary to detail the predicted values of environmental factors and their identification in terms of threats and opportunities for the industry (Table 2).

Challenges (trends) of the external environment	Opportunities	Threats
Cooperation with OPEC	Stabilizing supply in the world market. Political impact on price growth	Reducing production volumes.
Strengthening the USA position in the world market	Providing the possibility of a clear goal-setting before research, design and inventive structures to create similar technological solutions that provide the Russian oil and gas complex with competitive advantages.	Adjusting of shale oil to lower prices. A sharp increase in the efficiency of oil production in the USA. Lowering drilling costs and increasing boring rigs production in the USA could lead to the overproduction of oil in the world and lower oil prices.
Financial, technological, and personal sanctions	Consolidating the industry to overcome its technological backwardness.	Carrying out projects for the development of hard-to-recover oil reserves is hampered, and requires certain technological solutions and financing.
High volatility of oil prices	In the case of oil prices rise, companies will have opportunities to finance innovative solutions. Lower prices encourage companies to develop cost-cutting solutions across the entire value chain.	The increase in prices on the world market leads to an increase in domestic prices, i.e. serves the basis for launching an inflationary spiral of price growth within the country. Lower prices reduce the financial capabilities of companies, including their intentions to invest in innovative projects.
Increasing taxation of dark oil products sent abroad	Increasing the depth of oil refining (the need to modernize the oil refinery plants).	Reducing revenues from the export of fuel oil abroad.
The sharp growth of competition in the markets, including inter-fuel markets	Launching diversification processes of corporate portfolios of oil and gas companies. Stimulating innovation activities aimed at ensuring (maintaining) the competitiveness of traditional products of the industry. Improving environmental friendliness and manufacturability of industrial production.	Declining sales volumes due to reduced demand for traditional products is a threat to the national socio-economic system. Reducing opportunities for financing diversification processes.
Deterioration of the mineral resource base	Encouraging search operations (search for new territories), as well as search for technological solutions to ensure the competitiveness of target products produced in traditional (developed) areas (territories).	The need to create infrastructure (transport, social) in the new territories. Increasing the cost of target products. The need for significant investment and state involvement in projects for the development of new territories.
High wear and low renewal pace of basic production assets	Encouraging reconstruction (increasing work efficiency) of individual sectors of the Russian economy (for example, oil and gas mechanical engineering).	In the context of import substitution policy, the process of servicing existing foreign equipment becomes more complicated and more expensive. There is a possibility of emerging a gap in the technological backlog of the Russian sector of the economy.

Growing demand for highly qualified personnel	Implementing technologies aimed at increasing labor productivity (digitalization, robotization, etc.).	The need for personnel capable of generating solutions to optimize business processes aimed at reducing the need for personnel leads to increased demands for education, i.e. complication of programs, the increase in the terms of training, etc.

Table 2
Strategic balance matrix: external aspects

As can be seen from the results of the generalization, all sectors of the oil and gas complex are characterized by an acute need to maintain or improve the competitiveness of products in the domestic and foreign markets. Given the availability of standards for the quality of most industrial products, it is obvious that in this situation there is predominantly price competition, which is based on cost value.

At that, the proportion of transportation costs in the total structure of the cost of oil, gas, refined products, and petrochemicals is quite high. According to some data, the transport component of costs for oil transportation in Russia in 2015 amounted to 17.5%, for oil products – 10%, and for coal – 47%. In 2011, trunk transport of oil and oil products accounted for 24% of the total value of specific total costs in the oil sector. At the same time, the proportion of costs for gas trunk transport was 53% of the specific total costs of the gas industry[4],[5]. Given the high degree of the sluggishness of the oil and gas complex, it can be assumed that at present the proportion of transport costs in the cost structure has remained approximately the same. All this predetermines the need for serious modernization of the existing network of trunk pipelines, as well as the implementation of advanced technologies that allow fully realizing resource conservation and reducing costs.

At the same time, the active development of new production areas in the future, and diversification of export supplies require the construction of new transport corridors or trunk transportation lines, and, consequently, significant investments, which will subsequently lead to an increase in the cost of depreciation and property tax. This leads to the search for new construction technologies and materials that would allow implementing these projects at an optimal cost. But it should be noted that the complicating factors, in this case, will be the high territorial extent, geographical dispersion of objects, and severe climatic and infrastructural conditions.

In addition to the ambiguity of the cost reduction problem, illustrated by the example of transport costs, a fundamental problem remains unresolved, namely, the choice of a basic strategy for the further development of the complex. Based upon the targets set in the Energy Strategy, the strategy of concentrated growth has been chosen as the key one – that is, the hydrocarbon component will be the basis for further development of the industry. This is indicated by the set target trends for the development of hard-to-reach and hard-to-recover hydrocarbon reserves. But at the same time, a promising trend in the reduction in this kind of raw material is quite clear both in Russia and abroad. This is evidenced by energy-saving technologies that are implemented in all consumer sectors of target products, targets to

[4] Yu. V. Sinyak y A. Yu. Kolpakov, Analiz dinamiki i struktury zatrat v neftegazovom komplekse Rossii v period 2000-2011 gg. i prognoz do 2020 g. Problemy prognozirovaniya Vol: 5 num 146 (2014): 15-38.

[5] In Russia, the proportion of oil transportation costs reaches 17% of the cost of product, while oil products – 10%. Retrieved from http://www.au92.ru/msg/20070131_ 7013106.html

increase the processing depth of hydrocarbon raw materials, the inclusion of renewable energy sources in the fuel and energy balance structure.

According to the classical theory of strategic management, in the current situation, it is more expedient to choose a course for the gradual diversification of the complex, it's restructuring from the extractive to the generating industry. This transformation is associated with a number of problems of economic, social, technological, and partly political nature. At the present stage, these problems will be difficult to solve without state intervention. Presumably, in some cases, it is possible to talk about the possibility of considering options for public-private partnership, for example, when developing projects to create alternative energy sources in terms of conducting basic research, providing funding for large projects, and addressing social issues (resettlement, retraining, etc.). However, such options should be considered in the long term, and take into account the possible future impact on the competitive environment in the industries. That is, the requirements for choosing private partners and building the principles of subsequent cooperation with them are raised.

Results

In the course of the study, the authors studied in detail the draft Energy Strategy of the Russian Federation up to 2035 in terms of identifying opportunities and threats for the development of the oil and gas complex. The structural transformations of the complex are systematized in the context of the main segments (exploration and production, processing, and export). Each challenge of the external environment is analyzed from the viewpoint of opportunities and threats that it brings to the sectors of the Russian fuel and energy complex. The conclusion is made that the general development course of the oil and gas industry should be focused on concentrated growth, which will be of a combined nature, involving the implementation of all options, namely, market development (reorientation to the Asia-Pacific countries, geographical diversification of production and processing), product development (changing the product portfolio structure, focusing also on renewable energy segment), strengthening market positions (reducing costs in all links of the technological chain, and improving product quality to ensure competitive growth of domestic products). At that, the authors made a conclusion concerning the expediency to consider the option of gradual diversification of the complex with the state involvement in solving a number of social, economic, and technological problems.

Discussion

Currently, various sources address the issues of structuring industries on various grounds[6], various aspects of the fuel and energy balance formation[7], certain tools for strategic decision-making in industry companies[8], as well as methodological techniques for forecasting and planning the industry development[9]. A comprehensive review of certain

[6] E. M. Deberdieva, “Systemic representation of sophisticated economic structures of the oil and gas sector of the economy”, International Journal of Economics and Financial Issues Vol: 6 num 8 (2016): 332-339.

[7] I. V. Osinovskaya, System aspects of fuel and energy balance formation. International Journal of Energy Economics and Policy Vol: 7 num 5 (2017): 271-278.

[8] V. Plenkina; E. Deberdieva; O. Lenkova; I. Osinovskaya y I. Andronova, “Specifics of strategic managerial decisions-making in Russian oil companies”, Entrepreneurship and Sustainability Issues Vol: 5 num 4 (2018): 858-874.

[9] I. V. Andronova y I. V. Osinovskaya, “Metod scenariev kak osnovnoj instrument formirovaniya dolgosrochnyh otraslevyh progn”, Social Development Theory and Practice Vol: 8 num 126 (2018):

development aspects of the fuel and energy sectors, given in the draft Energy Strategy of the Russian Federation up to 2035, is presented not fully. In the context where individual directions of the general concept are considered by special agencies and structures, it is advisable to systematically consider the disparate components for the timely detection of contradictions and conflicts to make preventive decisions concerning the adjustment of the document under consideration.

Conclusion

In conclusion, it is necessary to note that the goal of the present research stated by the authors, which is to critically review the draft Energy Strategy of the Russian Federation up to 2035 and develop recommendations for its implementation, has been achieved. Based on the analysis results of the existing version of this document, the basic vector of the strategic development of the energy industry has been determined. In addition, the difficulties and contradictions have been revealed in the implementation of a given development vector that necessitates a comprehensive resolution and involvement of the state. The project of the Energy Strategy requires a detailed study of the declared structural transformations. Moreover, it is possible to provide for a long-term diversification of the industry with a preliminary consideration of various scenarios, and the formation of a program to manage the risks and consequences when implementing the chosen strategy.

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