Energy security is an important component of national security

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Abstract. The article deals with the issues of energy security as an important component of the national security of the country. There is growing uncertainty about safe access to reliable energy supplies at reasonable prices.

1 Introduction

Today, the country's energy security plays an important role, which is emphasized by the scientific research of various scientists. If earlier the concept of energy security of the country was associated only with the interests of developed countries-consumers of hydrocarbons, now there is an understanding that the policy of many countries should be based on the understanding of the fact that the globalization of the energy sector is closely related to the energy security of the country.

The energy security of the country is a state of protection of the economy and the population of the country from all possible threats to national security in the field of energy, which is possible when ensuring compliance with the requirements defined by the legislation of the Russian Federation for fuel and energy supply to consumers, as well as the implementation of export contracts and international obligations of the Russian Federation.

Energy security is an important factor of globalization and stable economic development. Undoubtedly, energy security is closely related to the concept of national security of the country, which is determined by such factors as the availability of the country's own energy resources; the possibility of their extraction, as well as competent consumption.

2 Materials and methods

The problems of improving the country's energy security were considered by the world's leading scientists. Despite the fact that this issue is extremely relevant, however, many issues are still not worked out. The problems of energy security, as well as the mechanisms of their neutralization, were considered in the works of: L. L. Bogatyrev, V. G. Blagodatskikh, S. I. Bortalevich, V. V. Bushueva, E. V. Bykova, N. I. Voropai, L. D. Gitelman, G. G. Duka, K. S. Zykov, A. A. Makarov, P. N. Maltseva, L. A. Melentyev, V. V. Morozov, A. L. Myzin, A. S. Nekrasov, V. M. Postolatiy, and others.

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3 Results

Today, fossil fuels such as oil, coal and gas still form the basis of world energy. In the world energy balance, oil accounts for 34%, coal - 30%, gas - 24%, hydropower - 6%, nuclear energy - 5%, renewable energy sources (RES) - 1%. Oil is very important for the prosperity of the nation, as it provides energy for the development of the transport system, industry and the country's defense.

The economic security of the Russian Federation largely depends on the export of hydrocarbons. This makes it unstable before exposure to both external and internal factors. One of the external factors can be considered a change in the price of oil, gas or coal in the world market [1].

Fig. 1. Dynamics of rising oil prices on the world market in the period from 2013 to 2019, USD [1].

Fig. 2. Growth dynamics of the share of hydrocarbons in the commodity structure of Russian exports in the period from 2013 to 2018,% [1].

An analysis of the growth dynamics of hydrocarbon raw materials in the commodity structure of exports of the Russian Federation showed that since 2003 this product has been at least 50% of the commodity structure of exports of the Russian Federation [2]. From 2013 to 2016, the share of hydrocarbons in the export of the Russian Federation is reduced, and after 2016 it is growing again, which directly correlates with changes in prices for this product (specifically, oil) in the world market.

The world still uses traditional sources of energy - coal, gas and, to a greater extent, oil [2].

Together, they make up more than 80% of the world's fuel and energy complex. However, the energy security of countries that use exclusively traditional energy sources is endangered in the long run given current trends in the development of alternative energy.

Fig. 3. Global Energy Consumption Structure for 2018 [2].

Fig. 4. Dynamics of growth in energy consumption in the world from 1990 to 2018, Mtoe (Million tons of oil equivalent - million tons of oil equivalent)[2]

Energy consumption in the world has been growing for a long period, the dynamics of growth is shown in Figure 4, and the natural reserves of oil and gas are running out [2].

A quarter of the world's proven gas reserves is located on the territory of Russia (Figure 5), and the Russian Federation is also in the top ten countries with the largest proven oil reserves (Figure 6) [1]. It is also worth noting that about 14% of the world's coal reserves are concentrated in the Russian Federation (Figure 7) [3].

However, taking into account the global trend towards an increase in energy consumption, developed countries are striving for the development of alternative energy.

The growth in energy consumption is mainly observed just in developed countries - the world economic leader, China is the leader in energy consumption in 2017 (Figure 8) [2].

Despite the fact that China is a trading partner of Russia, the Russian Federation cannot count on an increase in the export of hydrocarbons to China. This is due to the fact that not only the economy, but also the energy sector in China is undergoing qualitative changes. In

2010, China invested about 50 billion US dollars in the development of alternative energy, which is a quarter of the global investment in this industry over that period. Now China is developing global international projects to solve the global energy problem, and China also produces solar panels for domestic use and export to countries such as the USA, Germany and Japan [4].

Fig. 5. Proven global oil reserves for 2018, million barrels4[4]

Fig. 6. Proven global gas reserves for 2018, mln m3 [4]

Thus, the Russian economy cannot develop in the long run with the expectation of an increase in the export of hydrocarbons; there is a need for qualitative changes in the fuel and energy complex. Despite the relatively small percentages in the global energy sector, there is still a tendency for stable long-term growth in electricity consumption in the world (Figure 9) [5]. Many TNCs (transnational corporations), such as Total S.A., ExxonMobil Corporation, RDSHELL, are now investing in the development of alternative energy. In fig. 10 reflects in which areas international companies are already working: mainly wind energy, CO2 capture and biofuels [6].

Fig. 7. Energy consumption by individual countries in 2018, Mtoe [6]

Fig. 8. Growth Trends in Consumption of Certain Types of Energy Between 1990 and 2017, Mtoe [6]

Fig. 9. Directions of alternative energy in which TNCs invest in 2017 [6].

4 Discussion

Ensuring energy security for our country is of the highest priority. The Decree of the President of the Russian Federation approving the Energy Security Doctrine of the Russian Federation, adopted in May 2019, is aimed at forming a system of official views and measures to ensure energy security, which is an integral part of the system of ensuring the national security of the state. The doctrine is a document of strategic planning in the field of ensuring the national security of the Russian Federation. The energy security doctrine for the near future will be the basis for the development of the fuel and energy sector and the adoption of a number of regulatory legal acts.

Thus, energy security has become an independent important type of national security, without careful attention to which it is impossible to create stability.

5 Summary

In the current situation, when the domestic political pressure on the governments of the consumer states increases due to the growing need to meet the growing national demand for energy resources, the probability of these governments making insufficiently prepared decisions increases. Increased international action by these States to meet domestic energy demand may increase competition between them.

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