

# Tasks of State Management of the Fuel and Energy Complex for Sustainable Development

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**Abstract.** At the present stage, one of the scientific problems of research is the study of processes and factors influencing sustainable development. The increasing relevance of methods for achieving sustainable development of the world economy is due to several factors. The fuel and energy complex is not only the backbone of the Russian economy, but also one of the most important elements in ensuring (taking into account climatic conditions) the country's energy security. The geopolitical factor today forms the energy reality, and this trend implies the growing importance of developing an optimal mechanism for managing all processes in this area. Particular attention in public administration should be given to updating the priority tasks of the state energy policy and energy strategies of the Russian Federation, taking into account the goals of sustainable development. The strategic task today is to protect Russia's interests in the dynamic system of regulation of world energy markets.

## 1 Introduction

Determining the path of socio-economic development in the context of total progress, based on the goals of sustainable development, requires a comprehensive analysis of the features of the development of Russian regions, taking into account political, economic, social, environmental and other priorities. As a key player in the global energy market, Russia has enormous potential for economic growth.

The development of the economy at the present stage is characterized by the significant influence of digitalization and the progress in the introduction and adaptation of digital technologies, which are considered as a factor in achieving sustainable development. Digitalization is becoming a determining factor in the sustainable development of all spheres of human life and society, the economy and its industries, the security of society and the state, leading to significant positive changes in the economy of the country, the industry, the activities of the company and the individual. The consequences of digitalization can be heterogeneous, which explains the need for new adjustments, first of all, in institutional policy, and then in industry. Determination of patterns and effects in the framework of achieving sustainable economic development requires a study of digitalization processes and the consequences they cause. It should be noted that the post-COVID economy leads to the transformation of priority areas for the development of

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countries, the redistribution of resources, the development of new business models, which will significantly affect the range of priority goals and objectives in the short term. Moreover, the current stage of development adds new characteristic aspects, respectively, requires the determination, formulation and inclusion of new goals, objectives and indicators of development in the agenda of the future. Sustainable development, in addition, implies a combination of goals and objectives for the co-development of various sectors of the economy, the solution of which requires global partnership and cooperation at the level of countries and supranational bodies.

The system of strategic management of the activities of Russian organizations of the fuel and energy complex of the Russian Federation should take into account the peculiarities of the Russian management system and the nature of the change in the management process. It should be noted that in the state political system, considerable attention is paid to the problems, trends and directions for the development of activities in the short and medium term against the backdrop of the blurring of some strategic goals for the long term.

The most important and topical issues in the development of the Russian fuel and energy complex include recovery from the crisis caused by the COVID-19 pandemic, the role of OPEC+ agreements in stabilizing the market, key aspects related to relations with importers of Russian goods, as well as the importance of energy conservation and implementation of climate agreements. The Energy Strategy for the period of 2035, adopted in 2020, practically does not address issues related to digital transformation. At the same time, the fuel and energy complex is an industry where digital technologies are most in demand, all subjects (the state, industry enterprises, consumers and suppliers) are involved in digitalization processes, and digital transformation is aimed primarily at increasing the competitiveness of the fuel and energy complex, including its key segments [1].

## 2 Research Methodology

In modern realities, the market mechanism needs the participation of the state, and the fuel and energy complex is no exception. In this area, the question of the balance of state regulation and market mechanisms is very relevant. The specificity of the fuel and energy complex itself determines the development of special mechanisms for state regulation, as well as a strategically sound policy in relation to this sector of the economy.

The goals, objectives and priority areas for the long-term development of the sectors of the country's fuel and energy complex are determined by the Energy Strategy of Russia until 2030. Achievement of the designated goals of sectoral strategic planning is provided by the mechanisms of the state energy policy [2].

It is necessary to develop an effective model of the national carbon market, including a set of market participants and the appropriate infrastructure, taking into account the sequestration potential of carbon enterprises, characterized by the implementation, in addition to emission quotas, of an additional product in the form of carbon certificates, which are an alternative to "green" certificates of renewable energy, which will ensure effective implementation strategies for low-carbon development of the Russian economy.

To achieve the goal of the study, a set of methods was used that mutually complement each other, in particular, methods of retrospective and logical-structural analysis, methods of collecting, content analysis and processing of statistical information were applied. The information base was made up of key documents of Russia's strategic planning.

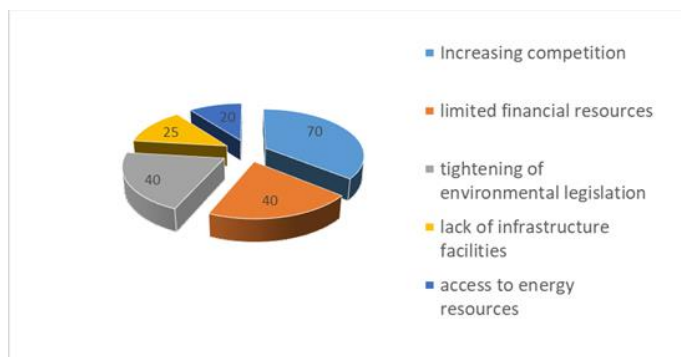
The main strategic tasks of the state in the management of the fuel and energy complex are:

- Ensuring the reliability, safety and stability of the functioning of the regional electricity distribution system.
- Improving the efficiency of energy companies.
- Expansion and modernization of network resources based on major technological breakthroughs.
- Increasing the investment attractiveness of energy companies.
- Development of business practices of social responsibility of business units.

Interest in a theoretical understanding of the role of the state and the policy it implements has increased dramatically, as the conditions and tasks, priorities and demands in the struggle for a depleting resource are changing. The key task is the formation of a new economic management model that ensures a balance between the biosphere and the technosphere and preserves the benefits for the future.

### 3 Results and Discussions

The fuel and energy complex is of great importance in terms of the formation of the gross domestic product and the federal budget. Today, the fuel and energy complex forms 25% of GDP and about 60% of exports. The Energy Strategy of Russia for the period up to 2030 [3] provides for rather ambitious goals in this area, namely, ensuring the growth in the use of various types of energy sources, as well as expanding the use of fuels for transport and energy. Nevertheless, domestic companies still face the problems of insufficient protection of property rights, the attitude of the state to entrepreneurship only as a source of income, and a lack of qualified specialists (Figure 1).



**Fig. 1.** The main problems of energy companies in the medium term

The effects related to the reproductive function and arising on the platform of the complex control mechanisms develop and provide an increase in the potential of this process and the need to implement its reproductive function. Competitiveness is an important condition for ensuring the survival and further effective functioning of the industry. Of particular importance is the management of the competitiveness of energy companies. The problem of raising the level of competitiveness and productivity of Russian companies in the context of the further development of the economy is associated, first of all, with the development of a general theoretical concept for managing competitiveness and efficiency. The competitiveness of an item is formed according to the relationship to a specific market, or to a specific team of buyers, created according to the appropriate indicators of the segmentation of the auction.

Currently, the development of companies in the fuel and energy complex is associated with various problems, including [9-10]:

- unpredictable and unstable world market conditions,

- natural depletion of functioning deposits,
- shift to the worse of mining and geological conditions,
- significant depreciation of fixed assets,
- Problems with attraction of investments.

In this regard, ensuring the stable development of the fuel and energy complex becomes possible only with an effectively organized strategic approach aimed at taking into account the characteristics of the external environment, the success of the competitiveness of companies in the market, and success in competitive struggle.

All these difficulties (the use of obsolete and worn-out equipment; the production of a product that does not fully comply with world standards, etc.) make it possible to recommend the use of a resource-efficient strategy aimed at acquiring competitive advantages by enterprises at the expense of reduction of resource losses, lean production and modern marketing approaches [11-14].

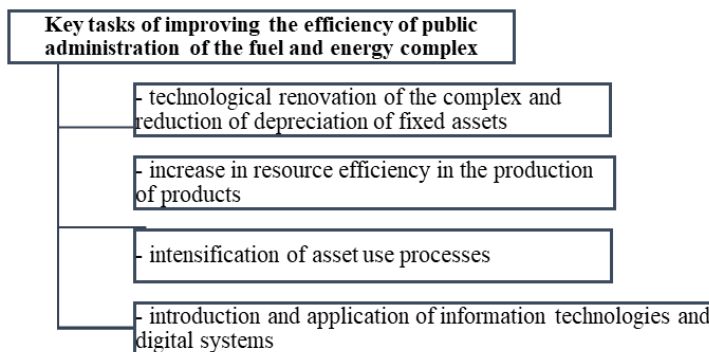
An effective mechanism for improving the efficiency of state management of the fuel and energy complex should include a system of tools and proposals on the organizational and economic foundations for the formation, functioning, regulation and coordination of the carbon market. As one of the characteristics of this mechanism, one can note “the formation of an industry plan for the distribution of quotas for emissions, taking into account the trend of their reduction in dynamics due to the development of the sequestration potential of carbon enterprises, which will allow achieving “carbon neutrality” in the long term [4]. Such a system for planning indicators for the implementation of carbon absorption units, including methods for determining prices and volumes of demand and supply of carbon quotas and certificates, is distinguished by a comprehensive consideration of the attractiveness of alternative environmental projects to reduce emissions and the interests of all contractors, will increase the efficiency and investment attractiveness of carbon enterprises and, as a result industry as a whole. Such a mechanism will make it possible to ensure a zero carbon footprint of energy enterprises - sources of anthropogenic emissions and become one of the effective tools of public administration for sustainable development [14].

The state of the energy complex, the level of its development characterize the energy independence of the state, which affects the economic and national security [20-21]. This task of energy development is included in the TOP-3 tasks of public administration at the present stage, along with the need to ensure sanitary and biological safety, as well as the problems of climate change [15].

The achievement of the strategic goals of fuel and energy companies is due to the provision of:

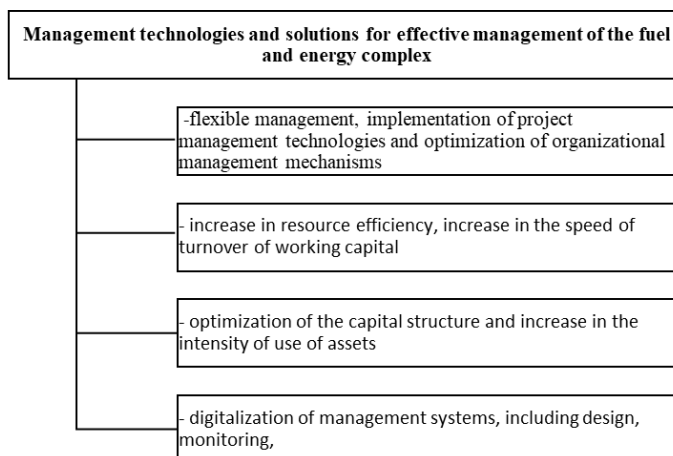
- efficient use of financial, economic, industrial, technological and managerial resources;
- the effectiveness of the mechanism for reducing the costs of transmission and distribution of electricity;
- conditions for the renovation of the industry’s fixed assets and reaching the level of international standards for the distribution of electricity;
- proper working and rest conditions, labor safety, social security of workers in the industry in accordance with international standards;
- high level of socially responsible energy companies based on assessments of key stakeholders.

In this regard, it is worth noting the key tasks of improving the efficiency of public administration of the fuel and energy complex (Fig. 2 and Fig. 3) [16].



**Fig. 2.** Key tasks of improving the efficiency of public administration of the fuel and energy complex

At the same time, during the transition to innovative and digital technologies [7], the operation of highly efficient industries and various activities that ensure human life, the issues of reliability and uninterrupted power supply to consumers come to the fore, which requires a comprehensive provision of the required amount of the requested load of electricity [17].



**Fig. 3.** Management technologies and solutions for effective management of the fuel and energy complex [8]

An integrated approach is needed from all possible directions, and not just from a technological point of view, since political and financial considerations are also important for each of the available energy sources [18-19]. Also, one should not forget about educational and informational aspects, which are important in a situation where a large part of the population considers the energy problem solved and takes its continuous supply for granted, but refuses to accept the sacrifices inevitably associated with the production of energy from sources. from the point of view of economy and land use [9].

## 4 Conclusions

The first provisions of Russian legislation aimed at determining the legal status of state corporations are constantly being improved, taking on more advanced professional forms, improving along with market relations and law enforcement practice. It should be noted that special attention is paid to the digital transformation of the fuel and energy sector and

the potential of renewable energy sources. New government initiatives are aimed at ensuring that companies in the fuel and energy sector are ready for the transition to digital technologies.

The impact of the pandemic and the shock caused by regional energy markets have once again demonstrated how important a stable and reliable fuel and energy sector is for today's world and how important it is to provide consumers with affordable energy while minimizing energy losses. The establishment of new environmental factors that form both favorable and unfavorable conditions for improving the efficiency of the functioning of this complex requires the management bodies to justify a high level of stability and adaptability to their influence, the need to take this fact into account in everyday practice.

In the context of Russia's transition to the digitalization of the economy, it becomes necessary to search for new forms and methods of management that ensure the balance of strategic development and the stability of the socio-economic system as a whole.

The tightening of climatic requirements leads to the need to take into account the environmental and economic components when assessing the energy efficiency of enterprises operating on traditional fossil fuels and being sources of anthropogenic emissions. One of the factors for ensuring energy efficiency is the production of products with a low carbon footprint. Thus, the competitiveness of companies that do not pay due attention to the environmental agenda is reduced.

To ensure energy security and environmental security of the planet, all market participants, from producers to consumers, must take balanced and responsible actions. These actions should be long-term oriented and meet the interests of sustainable development and prosperity of society.

Ensuring the growth in the use of various types of energy sources and expanding the use of fuels for transport and energy are the main goals of the Energy Strategy of Russia [6]. The current situation necessitates rethinking the general theoretical concept of managing this area from the point of view of ensuring sustainable development, taking into account current global trends.

Sustainable development of companies in the fuel and energy complex in the circumstances of difficult to predict and unstable global market conditions, natural depletion of functioning fields, shifting to the worse of mining and geological conditions, significant depreciation of fixed assets, problems with attracting investments is now becoming possible only with effective strategic management which is aimed at taking into account the peculiarities of the external environment, the success of the competitiveness of companies in the market, and success in the competitive struggle.

Organizational measures are the basis for using a resource-efficient strategy aimed at acquiring competitive advantages by enterprises by reducing resource losses, lean production and modern marketing approaches.

An effective mechanism should include a system of tools and proposals on the organizational and economic foundations for the formation, functioning, regulation and coordination of the carbon market. The basis for an effective model of state management of the fuel and energy complex can be the formation of sectoral plans for the distribution of emission quotas to achieve carbon neutrality.

Today, the dominant feature of world politics is the struggle for a dwindling resource. Digitalization is one of the management tools, since mass digitalization requires a lot of energy. Only rich countries, countries with a large amount of resources, can afford such a volume. Russia is one of them, which allows it to develop advanced technologies. Today there is a need for nature-like technologies that will ensure a balance between the biosphere and the technosphere and complement the holistic picture of the world. We need a change in the economic model that ensures the sovereignty of the country in relation to its own resources, reorientation of management towards the production of added value: maximum

processing of resources, concentration of forces in the manufacturing industry and high technologies.

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