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БАЯНДАМАЛАРЫ

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РЕСПУБЛИКИ КАЗАХСТАН

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INNOVATIVE MANAGEMENT OF OIL AND GAS SECTOR AS A FACTOR OF ECONOMIC DEVELOPMENT OF RK

Abstract. Prospects for the development of the oil and gas industry are associated with new directions in technological development, including the use of new principles for the development of complex oil fields. In the future, production combinations of a new type, energy-gas and gas-chemical, in which the fuel scheme for the use of hydrocarbon resources will be auxiliary and chemical-technological, the main, can become effective. As for the work to improve the mining complex, it should be based on a new mineral resource strategy.

The actual problem of the complex use of hydrocarbons can be solved based on regional innovation systems and subject to the creation of alternative methods for processing raw materials, allowing reducing costs, intensifying basic operations, and expanding the range of products. The republic has a huge potential of research and innovation projects, the practical implementation of which could significantly change the nature of its productive forces.

Keywords: innovative management, energy and gas-chemical production combinations, diversification of economic sectors, oil and gas resources and potential.

INTRODUCTION

Compared with other sectors of the economy of Kazakhstan, the oil and gas complex is financially quite prosperous, but here too there is a problem of an acute lack of investment. The same in even more acute forms is manifested in other branches of our industry.

Often there are not enough financial resources to solve the most urgent problems, the theoretical scheme does not work, according to which the market "should arrange everything automatically". The motivation for investing in the development of innovation is too weak. Market forces alone are not enough to secure investments. The structural policy of the state is required, the state stimulation of capital investments and innovations is necessary. According to the development strategy of the republic, the stimulation of investment activity will be carried out in the field of development of related and related industries of the mineral resource complex, petrochemical industry, engineering and other priority sectors.

Thus, it is necessary to activate the scientific and technical policy, which will make the costs of modernizing production, increasing its efficiency and competitiveness more profitable for enterprises. To solve the problems of diversification and modernization of the economy of our country, it is necessary to actively involve large domestic businesses to implement large-scale investment projects.

The oil and gas complex is able to become a leader in solving these problems, it has the necessary material resources. It is easier than in other sectors of the economy, to work out the mechanisms of state regulation, which will increase the motivation for investment in scientific and technological development. In the hands of the state tax, credit, administrative levers and legislative measures. Legislative and executive authorities working in the extractive industry need to develop new approaches to solving the set tasks.

MAIN PART

The main task of the industrial policy of Kazakhstan is the innovative development of production, which is the basis for raising the competitiveness of the economy, raising the standard of living of the population and ensuring state security.

In order to boost economic growth, the Government of the Republic of Kazakhstan has developed an Industrial and Innovative Development Strategy, the implementation of which will enable to achieve sustainable development of the country through diversification of economic sectors, contributing to the departure from raw materials, preparing the conditions for the transition to a service-technological economy.

In this regard, the oil and gas sector is one of the strategically important sectors of the economy, since it ensures the energy security of the country. Oil production is the main and most dynamically developing branch of the country's economy. Tax revenues from the oil and gas sector account for a third of budget revenues.

Increasing oil production and implementing a large-scale resource base growth program is one of the priorities of the oil sector in the Republic of Kazakhstan. However, the raw material orientation of the Kazakh economy necessitates the development of innovative processes in this sector of the economy. The need to introduce innovation processes is caused by existing problems in the oil sector of the Republic of Kazakhstan, which include: dependence on market conditions; growth and improvement of the raw material base; reduction of costs in all parts of the production process; ensuring environmental safety; the creation of new industries; increase the market for products, etc.

The most important prerequisite for improving the competitiveness of the economy of the country is the innovative development of priority industries that provide high-value-added products. The natural resource potential, skilled labor, the existing production infrastructure determine the broad prospects for the development of the oil sector, with further access to the world market for petroleum products.

For this, the state needs to conduct a series of activities that stimulate the development of the oil refining and petrochemical complexes, the market of engineering and consulting services in the oil and gas complex, and promote the strengthening of mutually beneficial cooperation between scientific and educational organizations in the relevant profile and industrial enterprises of the oil complex of the Republic of Kazakhstan economy.

Of course, major projects implemented in Kazakhstan with the assistance of international oil, engineering and construction contractors, in accordance with contractual requirements, modern technologies are being introduced and used in all types of operations, ranging from geophysical, exploration and drilling, hydrocarbon production and including operations on their processing and transportation. Foreign investors pledged to transfer technology and experience to the Kazakh side, to train local workers and engineering personnel.

In our opinion, the most important areas of activity of oil producing enterprises specializing in the large-scale application of innovative technologies and equipment are the following:

- development of new oil fields;
- oil production using innovative technologies for enhanced oil recovery, integrated methods for the effective development of hard-to-recover reserves;
- development, production and introduction of technologies and reagents, modern oil field machinery and equipment.

The main criteria for innovation in oil production are:

- increase in oil production using new technologies;
- modern approach to the development of hard-to-recover reserves;
- environmental friendliness of production processes;
- increase the volume of oil refining through innovation;
- a wide range of enhanced oil recovery technologies;
- a high proportion of intellectual property;
- high standards of corporate governance.

The main priority areas of innovation are:

- development of projects of intellectual fields;
- the formation of banks of innovative technologies;
- development of innovative technologies based on the use of new materials and equipment;
- the creation of multi-fuel power plants.

The purpose of the mining companies should be a constant expansion of the base of the intellectual property objects belonging to it, including the rights to technologies and technical means protected by patents, certificates for a trademark, certificates for a utility model and a certificate for a database, as well as work on an independent assessment of its objects intellectual property.

The main goal of innovative technology projects is to improve the quality of oil field development management through the informed choice and optimization of management decisions and their implementation, which will allow:

- obtain high-quality information about the operation of the reservoir, downhole and surface process equipment in real time in order to reduce the time and improve the quality of management decisions;
- to diagnose on the basis of the information received and the address designation of operations for the management of reservoir operation modes, methods of well and underground well repairs;
- to increase the coefficient of oil recovery and production of wells by optimal control of the hydrodynamic regimes of the formations and wells, the selection of optimal methods and reagents for the effects on the formation;
- to stimulate the development of innovative technologies and programs in the field of oil field development management;
- to improve the ecology of the oil and gas producing region through the creation of a monitoring system and environmentally oriented technologies involving the use of waste and local raw materials for the implementation of basic technological operations for oil production.

Thus, it is necessary to activate the scientific and technical policy, which will make the costs of modernizing production, increasing its efficiency and competitiveness more profitable for enterprises. To solve the problems of diversification and modernization of the economy, it is necessary to actively attract large domestic businesses to implement large-scale investment projects. It is necessary to attract large companies to the creation and development of 5-6 clusters in the country, to stimulate their interaction with small and medium-sized businesses, while creating more sophisticated value chains.

In our opinion, the transition to a different development model based on the formula “domestic resources, technologies, equipment, services and specialists + foreign capital” is extremely relevant for our republic. But this can be achieved only if there is a reasonable and effective protectionist policy on the part of the state.

Confirmation of the estimated oil reserves in the industrial intelligence region determines the feasibility of creating an oil refining production and construction of a petrochemical complex on its basis at Mangystau. The basis of this approach to the use of oil and gas resources is the specific composition of the region's oil: its saturation with paraffins, asphaltenes, the presence of sulfur, vanadium and other components in it, the extraction of which is of considerable interest. The construction of a plant in Mangistau Oblast for the production of construction bitumen from highly viscous Karazhanbas oil, which is an ideal raw material for producing bitumens for various purposes, including road, insulation, seems to be relevant and timely.

In accordance with the government program, it is planned to reconstruct the Atyrau oil refinery and build a complex of plants for the production of lubricating oils at the Pavlodar petrochemical plant. It is planned to load the existing production facilities with raw materials and build additional plants to increase the production of petroleum products at the Shymkent refinery plant. The conditions of the FEZ in the port of Aktau will allow developing the production of petrochemical products.

In the future, it is planned to solve the problem of producing hydrocarbon products with high added value through large-scale modernization of the main oil and gas processing enterprises. Thus, in the next 2 years, the total amount of investments in the further modernization and reconstruction of the Atyrau refinery, which is part of NK Kazmunaygas, will amount to about $ 1 billion, to the Shymkent refinery (RKOR) - $ 600 million, and Pavlodar refinery - 40 million. Doll.

Table - 1 Oil and Gas Sector of Kazakhstan

Estimation of reserves, geological exploration	Production	Transportation	processing	Consumption
Factors for the formation of a strategy for the innovative development of the oil and gas sector in Kazakhstan		Требования для создания стратегии инновационного развития		
1. lack of replenishment of the resource base with new hydrocarbon fields 2.competition in the energy market 3. Kazakhstan's accession to the WTO 4. Unsatisfactory state of the refining industry in high-tech processes 5. creating clusters 6. adequate legislation		1. energy security 2. risk accounting 3. ecological reliability 4.budget profitability 5.social and economic development of regions		

At the Atyrau Refinery, the total refining depth will increase to 90%, the depth of extraction of light petroleum products will be 50%, gasoline will be produced that meets Euro-3 standards. will serve as raw material for gas chemical complex in Atyrau. After 2010, it is assumed that all three plants will switch to the production of Euro-4 and Euro-5 standard fuels.

Table 2 - Strategic Program for the Innovative Development of the Oil and Gas Sector of Kazakhstan

Strategic program for the innovative development of the oil and gas sector of Kazakhstan:
1. Exemption of companies from taxation; 2. Development of incentive taxation; 3. Development of production in old and new fields using innovative technologies; 4. Creating vertically integrated structures 5. Modernization of oil refineries with new innovative equipment 6. Development of modern innovative technologies for the processing industry 7. Improving the quality of exploration with the introduction of three-dimensional modeling methods 8. Creating a system of state support and incentives for the oil and gas sector

One of the main driving "locomotives" of industry development is the development of the Kazakhstan sector of the Caspian Sea (KSKM), in which, according to preliminary estimates, the total hydrocarbon reserves amount to 8.0 billion tons and which is expected to provide the most significant increase in hydrocarbon production in Kazakhstan.

The development of hydrocarbon production in the Caspian Sea will contribute to the formation of a domestic raw material base for the petrochemical industry. The deepening of oil and gas processing will allow to produce about 200 varieties of polymer products that are used in almost all sectors of the economy and in everyday life. The development of the CDC in this direction will create the conditions for the formation of a diversified transnational corporation.

The economically developed countries in the period of formation of their economies used the cluster method as the most effective approaches in the progressive and rational development of their productive forces. The benefits for innovation and productivity growth are more pronounced in a cluster than in isolated companies. Participation in the cluster benefits firms in accessing new technologies. Cluster firms quickly learn about the progress in technology, the availability of new components and equipment, new concepts in service and marketing, etc. They are helped by ongoing relationships with other members of the cluster, mutual visits and personal contacts.

In our opinion, one of such regions where there are all favorable prerequisites for the creation and functioning of such clusters is Western Kazakhstan. Potential geological reserves in subsalt deposits of the Aktyubinsk region, the Caspian shelf zone, the subsoil of Mangyshlak, the Buzachi peninsula and the near-Caspian lowland zone of the Caspian lowland allow us to consider Western Kazakhstan as one of the promising oil production bases of the country.

On the territory of this region there is the Atyrau Oil Refinery, Petrochemical Plant JSC Polypropylene, as well as Aktau Plastics Plant, gas processing plants in the cities of Zhanaozen and Zhanazhol. The creation of this cluster is also facilitated by the availability of personnel, scientific and technical personnel, production, communication and financial infrastructure.

The combination of factors of production of enterprises of the oil sector is a competitive advantage among other sectors of the economy and is the basis for the development of innovative processes in this sector of the economy.

In our opinion, the clusters “Oil and Gas Engineering” and “Transport Logistics” that are being formed on projects, in our opinion, should be combined into a single oil cluster. Combining the cluster "Oil and Gas Engineering" in the oil cluster is justified by the fact that the implementation of large investment projects will cause a great demand for high-tech equipment and engineering products for exploration, drilling of oil and gas fields, their transportation, storage and deep processing.

The implementation of innovative projects in the oil industry is associated with a certain risk. The nature of innovation risks is influenced by industry characteristics, which include: the nature of the production process; dependence of production on natural and climatic factors; the formation of organizational structures of companies; the formation of rental income; dependence on export size and structure; business conditions; taxation system.

One of the ways to implement this direction, as noted by the President of the Republic of Kazakhstan, is the creation and development of industries in the border areas (Russia and China). To do this, it is necessary first to conduct complex geological research in the border areas of Kazakhstan with neighboring countries, which will allow evaluating their mineral and raw material potential. This, in turn, will serve as the basis for rational and effective long-term planning in the creation of production capacities in border areas. In this direction, studies are already being conducted with China and Russia. It is necessary to expand them and give them a systemic character, bring them to the interstate level and give them the status of international studies.

State regulation of the economy is currently carried out in almost all countries. As world experience shows, government intervention is observed in those areas where the operation of market mechanisms is insufficient or conflicts with the interests of society. This primarily refers to innovation, which, according to the Concept of Interstate Innovation Policy of the Member States of the Commonwealth of Independent States (CIS), refers to the process aimed at implementing the results of completed research and development, or other scientific and technological achievements product sold on the market to a new or improved technological process used in practical activities, and also related additional research and development.

CONCLUSION

In a modern market economy, the value of innovation has greatly increased. This is due to the fact that in a market economy, innovation is a powerful anti-crisis factor, since the use of new technologies, new types of technology, as well as new methods of organizing management and production, leads to lower production costs, lower prices, higher profits, to stimulate new needs, to increase the reputation (image) of the company, and finally to conquer new markets.

Innovations in the oil sector are the result of a social, techno-economic process aimed at changing the original structure of the production mechanism, i.e. the transition of its internal structure to a new state: for products, technology, means of production, professional and qualification structure of the labor force, organization ; in order to obtain both economic and environmental effects.

Under these conditions, the goal of the strategy of innovative development of the agro-industrial complex of the Republic of Kazakhstan for the period up to 2020 is to accelerate the growth rate of agricultural products based on increasing the effective use of resource potential and competitiveness of products, solving social problems in rural areas and reducing the gap in the standard of living of rural and urban population.

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ИННОВАЦИОННОЕ УПРАВЛЕНИЕ НЕФТЕГАЗОВЫМ СЕКТОРОМ КАК ФАКТОРОМ ЭКОНОМИЧЕСКОГО РАЗВИТИЯ РК

Аннотация. Перспективы развития нефтегазовой отрасли связаны с новыми направлениями в технологическом развитии, включая использование новых принципов разработки сложных по составу месторождений нефти. В перспективе эффективными могут стать производственные сочетания нового типа - энергоугленефтегазохимические, в которых топливная схема использования ресурсов углеводородов будет вспомогательной, а химико-технологическая - основной. Что касается работы по совершенствованию горнопромышленного комплекса, то она должна базироваться на новой минерально-сырьевой стратегии.

Актуальная проблема комплексного использования углеводородного сырья может быть решена на основе региональных инновационных систем и при условии создания альтернативных способов переработки сырья, позволяющих снизить затраты, интенсифицировать основные операции, расширить ассортимент выпускаемой продукции. В республике имеется огромный потенциал научно-инновационных проектов, практическая реализация которых могла бы существенно изменить характер ее производительных сил.

Ключевые слова: инновационное управление, энергоугленефтегазохимические производственные сочетания, диверсификации отраслей экономики, нефтегазовые ресурсы и потенциал.

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ҚР ЭКОНОМИКАЛЫҚ ДАМУ ФАКУЛЬТЕТІНІҢ МҰНАЙ ЖӘНЕ ГАЗ СЕКТОРЫН ИННОВАЦИЯЛЫҚ БАСҚАРУ

Аннотация. Мұнай-газ саласын дамыту перспективалары технологиялық дамудың жаңа бағыттарымен, соның ішінде кешенді мұнай кен орындарын игерудің жаңа қағидаларын қолданумен байланысты. Болашақта көмірсутек ресурстарын пайдаланудың отын схемасы қосалқы және химиялық-технологиялық болып табылатын жаңа типті, энергетикалық газ және газ-химия өндірісінің комбинациясы тиімді болады. Тау-кен кешенін жетілдіру бойынша жұмыстарға келетін болсақ, ол жаңа пайдалы қазбалардың стратегиясы негізінде құрылуы керек.

Көмірсутегін кешенді пайдаланудың өзекті мәселесі өңірлік инновациялық жүйелер негізінде шешілуі мүмкін және шығындарды төмендетуге, негізгі операцияларды күшейтуге және өнімдердің спектрін кеңейтуге мүмкіндік беретін шикізатты қайта өңдеудің балама әдістерін құруға негізделген. Республикада ғылыми-зерттеу және инновациялық жобалардың үлкен әлеуеті бар, оның практикалық іске асырылуы оның өндірістік күштерінің табиғатын айтарлықтай өзгертеді.

Түйін сөздер: инновациялық менеджмент, энергетика және газ-химия комбинаттары, экономикалық секторларды әртараптандыру, мұнай-газ ресурстары мен әлеует.

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