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Principles of strategic programming in the fuel and energy complex considering the interests of small petroleum companies*

The article deals with the issues concerning Russia's fuel and energy complex. It specifies the conceptual principles of the programme approach to the management of its development. The authors propose a list of activities on the sustainable development of small oil business in the framework of strategic programming. A conceptual model of an economic mechanism of strategic management of small oil business in Russia is presented in the article.

Fuel and energy complex, programme approach, strategy, hydrocarbon resources, small petroleum companies.

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Problems of Russia's fuel and energy complex

Fuel and energy complex (FEC) of Russia, due to the export-oriented nature of its economy, is a major source of consolidated budget revenues. In particular, the share of oil and gas revenues in the federal budget amounted to 50% in 2011 [3]. The significant dependence of national economy on FEC requires careful consideration of its activities, detection and prevention of problems and elaboration of a strategic programme and forecast of its sustainable development.

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To date, a large number of research works are devoted to the problems of the sector. The main ones dwell upon the following: the rate of minerals extraction outpaces their prospecting; investments in fixed assets are low, the degree of hydrocarbon resources processing is insufficient. In most cases it is connected with the unwillingness of enterprises' owners to invest in the reproduction of raw materials base, in the updating of fixed capital (most businesses use facilities, created in the Soviet period) and also with the inexpediency of investments due to certain flaws in the modern legal base (taxation, licensing, provision of access to transport capacities, etc.).

Some basic problems of the FEC oil and gas sector and ways to their solution are presented in the *table*.

The analysis showed that one of the main problems of the modern Russian fuel and energy complex is the low development level of small oil companies sector (SOC). Foreign experience proves that it is independent oil producers that are most interested in the further exploitation of 'exhausted' oilfields after their abandonment by vertically-integrated oil companies (VIOC); consequently, these independent oil producers seek to introduce innovation technologies and techniques for a further and more profound exploitation of the fields.

So, in the countries with highly developed oil and gas industry, the USA and Canada, for instance, the share of independent producers in the total oil production is 40% and 30% respectively; and in the UK small companies play a major role in the provision of oilfield services [5].

In order to improve the efficiency of Russia's FEC, the present paper suggests some approaches to strategic planning and forecasting for the small and medium-sized oil companies sector.

Strategic programming

As opposed to the planning approach, which proceeds from a proper state (what should be), the **programme approach** stems from the problems and options for their resolution, available at the initial moment of development, i.e. this approach proceeds from the actual state (what is), and selects such changes, which can transform the real state of affairs for the better.

Problems of the hydrocarbon sector of FEC and ways to their solution [4, 6, 9]

Problem	Solutions
Volatility of world energy markets and energy prices	Increasing Russia's strategic presence in the markets of high-tech products and intellectual services in energy sphere Geographical and production diversification of Russia's energy exports Transition from the sale of primary commodities and energy resources abroad to the sales of the products of their deep processing Development of major parts of the international energy infrastructure on the territory of Russia
Depletion of profitable hydrocarbon deposits	Completion of non-profitable deposits development by small and medium-sized businesses on preferential terms Increase of profitability of using conventional and alternative energy sources
Remoteness of hydrocarbon extraction sites from the regions of their consumption	Enhancement of reliability and security of energy transmission systems Development of new technologies for hydrocarbons transportation Ensuring the non-discriminatory access of small and medium-sized companies to transporting capacities
Switching to offshore deposits difficult to access	Elaboration of efficient schemes of interaction with foreign companies possessing necessary technologies Creation of consortiums involving different types of capital
Negative impact on the environment	Enhancement of ecological safety Collection and utilization of associated petroleum gas (APG) Reduction of CO_2 emissions

Figure 1 shows a flow diagram of the sequence of actions in the programme approach. A certain problem is the starting point of each stage, and management actions taken for its solution are repeated cyclically and include such actions as the analysis of a problem, the formation of alternative options for its solution, the choice of the optimal solution under given conditions, the development of methodology for implementing the solution and the choice of means by which the problem will be solved. The final stages represent the actual implementation of the decision and control of its execution.

The main instruments for implementing this approach are strategic guidelines, priorities and other parameters influencing the decision-making. A doubtless advantage of programme approach consists in the possibility to adjust the movement at every stage, in accordance with the actual progress and dynamics of external environment. The use of programme approach requires a great amount of resources; however in the conditions when the variability and unpredictability of external environment is increasing, this approach is the best [1].

For all its importance for market reforms in the economy, the fuel and energy complex, in methodological respect, complies with the general principles of socio-economic development of a country and its regions.

As a rule, the **programme** includes the following sections set out in the respective sub-programmes of respective economic complexes, FEC being their representative [2]:

A. Analysis of the initial condition of the problem to be solved on a programme basis.

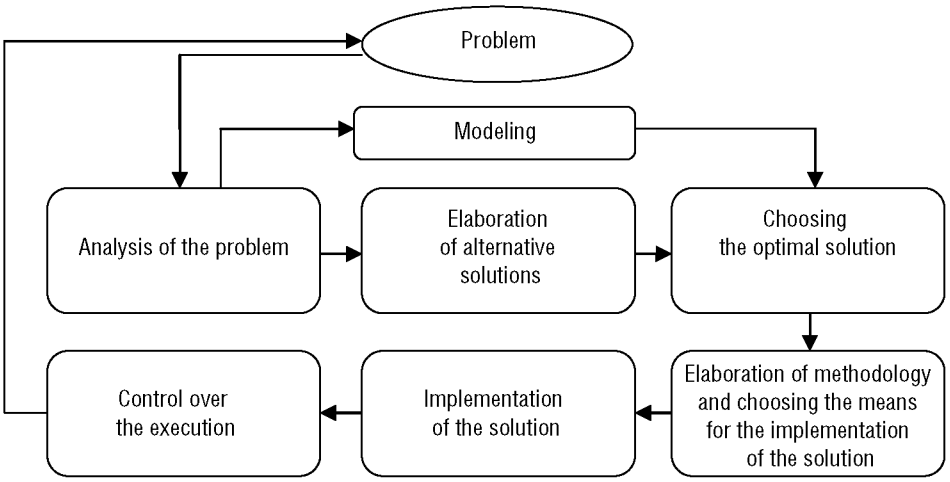
Russia's small oil business (SOB) is facing significant difficulties. The threat of slide in oil prices may cause a reduction in liquidity and financial stability of such companies and may hamper their further development. Besides, the reserves for self-sustained development of small oil companies are virtually exhausted, as most companies are barely capable of conducting expanded reproduction by their own efforts alone. Further development of small oil business is impeded by many objective reasons that small oil companies can not overcome on their own.

B. Goals and objectives of the programme.

According to the authors, the main objectives in enhancing the performance of Russia's small oil business and FEC on the whole comprise:

1. Integration with major vertically integrated oil companies.

Figure 1. Sequence of actions in the program approach [1]



2. Formation of reserves and creation of national oil stock exchanges.

3. Indirect methods of stimulation.

4. Economic mechanisms of the carbon market.

The next paragraph of the programme contains the detailed description of the ways to fulfill these objectives.

C. List of activities for the implementation of the programme.

1. Integration with major vertically integrated oil companies.

Substantiating the interaction between individual enterprises provides an opportunity to get additional effects generated through joint actions, including through the improvement of the intrasectoral technological and economic links, project financing, specialization and cooperation, exchange of qualified personnel. Eventually, in the framework of joint projects implementation, all this can lead to the emergence of a specific competitive advantage based on synergy.

The search for possible ways of cooperation between small oil business and major vertically integrated oil companies should find incentives for obtaining efficient results and pool the available economic interests and resources.

A theoretical model for achieving sustainability of small oil business and the spheres, in which entrepreneurial activity can be developed, depend on the degree of integration, chosen by each enterprise on its own. Small oil business can also have various development scenarios. They can include independent functioning of enterprises with self-sustainable fulfillment of all production and service functions, as well as their inclusion as structural units into larger corporate formations.

Thus, the strategic development guidelines for small oil business can be based on the following scenarios:

- merging with oil corporations and the loss of production and commercial independence;
- reorganization and restructuring of small oil companies through their incorporation into vertically integrated oil companies as subsidiaries, with the preservation of a certain niche of activities (e.g. the development of hard-to-recover reserves);
- formation of an integration structure of independent oil companies and large corporations in the form of a consortium (for instance, for the implementation of projects on a temporary basis).

Consortium, as a form of organization, is able to provide favourable conditions for infrastructure servicing. Such cooperation provides an opportunity to develop diversification and integration that contribute to the unification of total production resources for carrying out the entire production cycle, from the exploration and development of fields, transportation and processing of hydrocarbons up to the sales of oil products to ultimate users [8].

An important role in the functioning and development of a highly efficient oil market belongs to the pooling of efforts by large companies and small business on the basis of subcontracts and outsourcing.

The financing and implementation of various projects on the use of idle wells and marginal fields belonging to the major vertically integrated oil companies can be implemented with the involvement of small oil companies, which can be engaged not only in oil extraction, but also in the overhaul repair of wells and processing of associated petroleum gas.

The expediency of the projects is largely determined by their scale and the place of their implementation: new or old districts and provinces in the first place. The scope of participation of small companies within the whole oil complex and their interaction with other market participants are presented in *figure 2*. At that, the role of the government for the different types of projects in different regions and provinces is substantially changed.

For large projects it is the participation in funding (infrastructure), promotion of investment, creation of conditions for the use of market mechanisms to reduce greenhouse gas emissions.

For small and medium projects it is the facilitation of small production and service companies' development, the promotion of investments in the use and processing of associated petroleum gas.

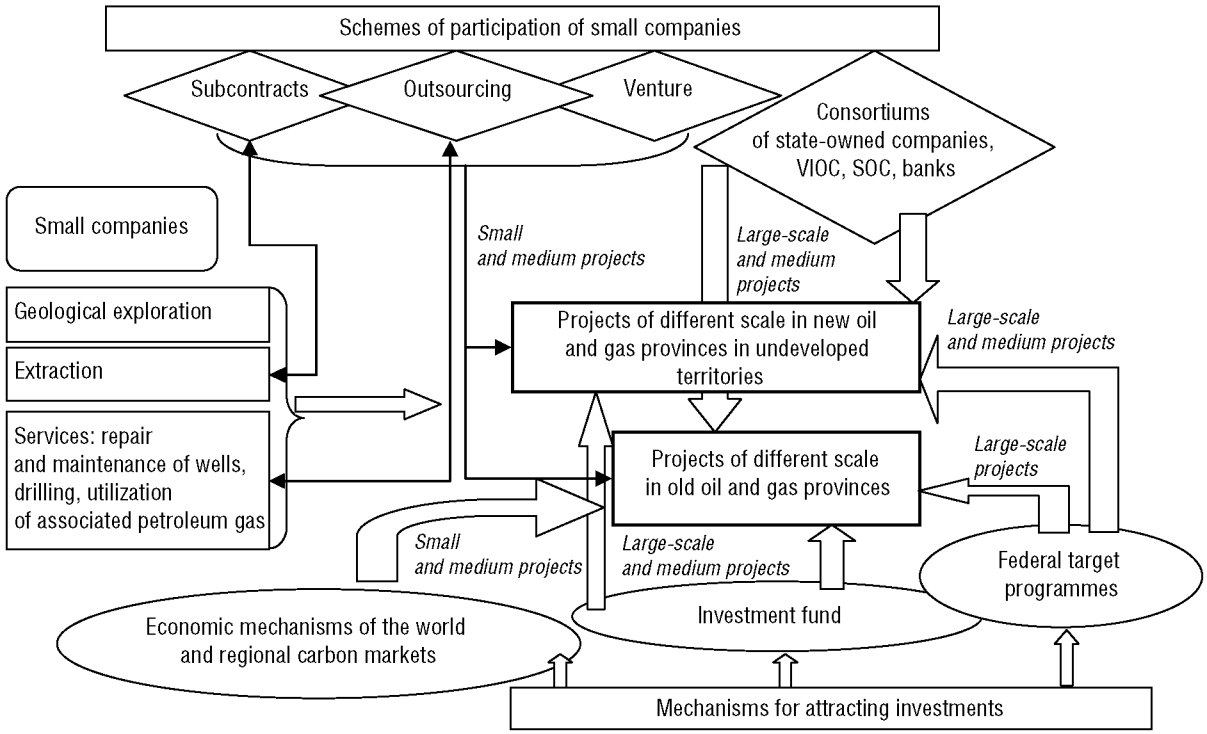
In the framework of such projects like the development of new hydrocarbon deposits, including marine deposits, the construction of port infrastructure and oil loading terminals, the competitiveness clusters can be created with the participation of small business, but mainly in the service sector.

The clusters of small enterprises can be developed spontaneously or in an organized way. An organized way is possible provided that it is initiated by either a leading company that has a substantial capital or by local authorities, or representatives of small business, which hired managing specialists. It should be noted that the support on the part of regional structures could contribute to the consolidation of local business into a network organization. As the level of mutual trust between the participants of the prospective cluster rises, a gradual transition to more risky projects begins [7, 8].

2. Formation of reserves and creation of national petroleum stock exchanges.

Considering the institute of public administration of the oil complex from a historical perspective, we can point out that the state was and is in a constant search for the optimal way of state management of the oil complex and interaction with its economic entities.

Figure 2. Possible schemes of participation of small oil business in oil and gas projects



The organization of a number of market institutions in Russia can contribute to the formation of market prices and mitigation of volatility in prices, including:

- an exchange as a mechanism for objective determination of equilibrium price for oil and oil products by the independent subjects of the market;
- a futures market of oil contracts as a tool for pricing, for determining the price targets set by the market itself for the foreseeable future, with its inherent tools of price risks insurance;
- an oil and oil products reserve under the operational control of the government, which is represented by the commercial stocks of oil required for enhancing the state's regulatory role in the oil market.

The current structure of the oil market, despite its dominance by major oil companies, has a free resource potential in the segment of crude oil and in a more developed segment of oil products as well. It allows organizing a full (classical) commodity exchange section with the calculations through the deliveries of tangible goods and according to the spot price, used on its basis, to create futures platform for trading in standard contracts for oil and oil products. The absence of market of contracts on oil and oil processing products in Russia prevents from setting real market prices and determining the price targets that are based on the expectations of the market itself. Russian manufacturers exporting oil and oil products annually lose up to 500 million US dollars due to the lack of direct costing system (directly effected exchange trading) for the domestic Urals crude and exported oil products, by signing contracts with a discount from the results of exchange trades in London on Brent crude and from Platt's quotations.

3. Indirect methods of stimulation.

A weak link in the state regulation of the oil industry can be found in the lack of efficient indirect methods, i.e. incentives that encourage companies to upgrade their production facilities, to introduce technologies for intensifying oil production, to create products with higher added value and quality (for the oil-refining segment of the industry).

It is proposed that the governmental economic policy should use the stimulating functions of the tax and monetary methods of state regulation for the development of raw materials base in the oil industry on the basis of public-private partnership.

The stimulating tools of the tax method are the tools that fundamentally affect the specifics of investment projects' implementation in the oil complex: a reasonable change in the order of tax bases calculation; a reasonable change in tax rates; the development of special tax regulations. Specific tax tools encouraging the development of small business in the oil complex are given in *figure 3*.

The guidelines for improving the tools of monetary method are as follows: the formation of specialized sectoral credit institutions or an inter-sectoral institute; the development of credit products relevant for long-term and capital-intensive investment projects; the development of institutions and mechanisms for securing loans.

Experts of the Centre for Problem Analysis and State and Management Planning developed the concept and substantiated the expediency of establishing the state extrabudgetary investment and credit fund. The minimum estimation of the available investment funds is 124 billion US dollars annually. The fund's sources actualize the emissive investment money supply, the liabilities of banks with the state-owned share of the capital, a part of the RF Central Bank's profit, a part of the gold and currency reserves, the Pension Fund, the revenues from privatization, and natural resource rent. Meanwhile, the source for the fund's formation can be also found in the prospective government's share of the profits from oil sales in developed projects and the projects prepared for development

Figure 3. Methods and tools for the state regulation of the oil and gas complex

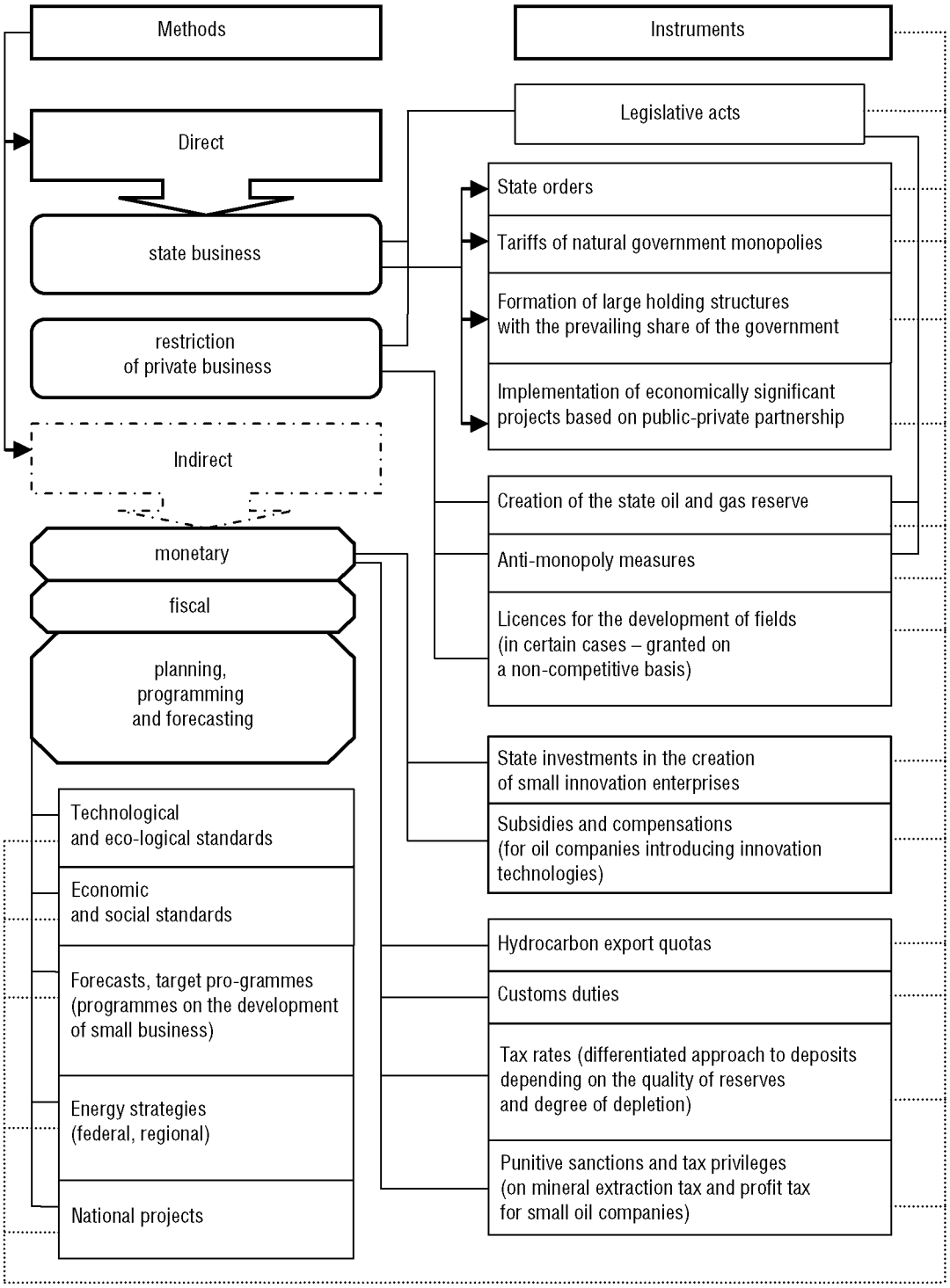
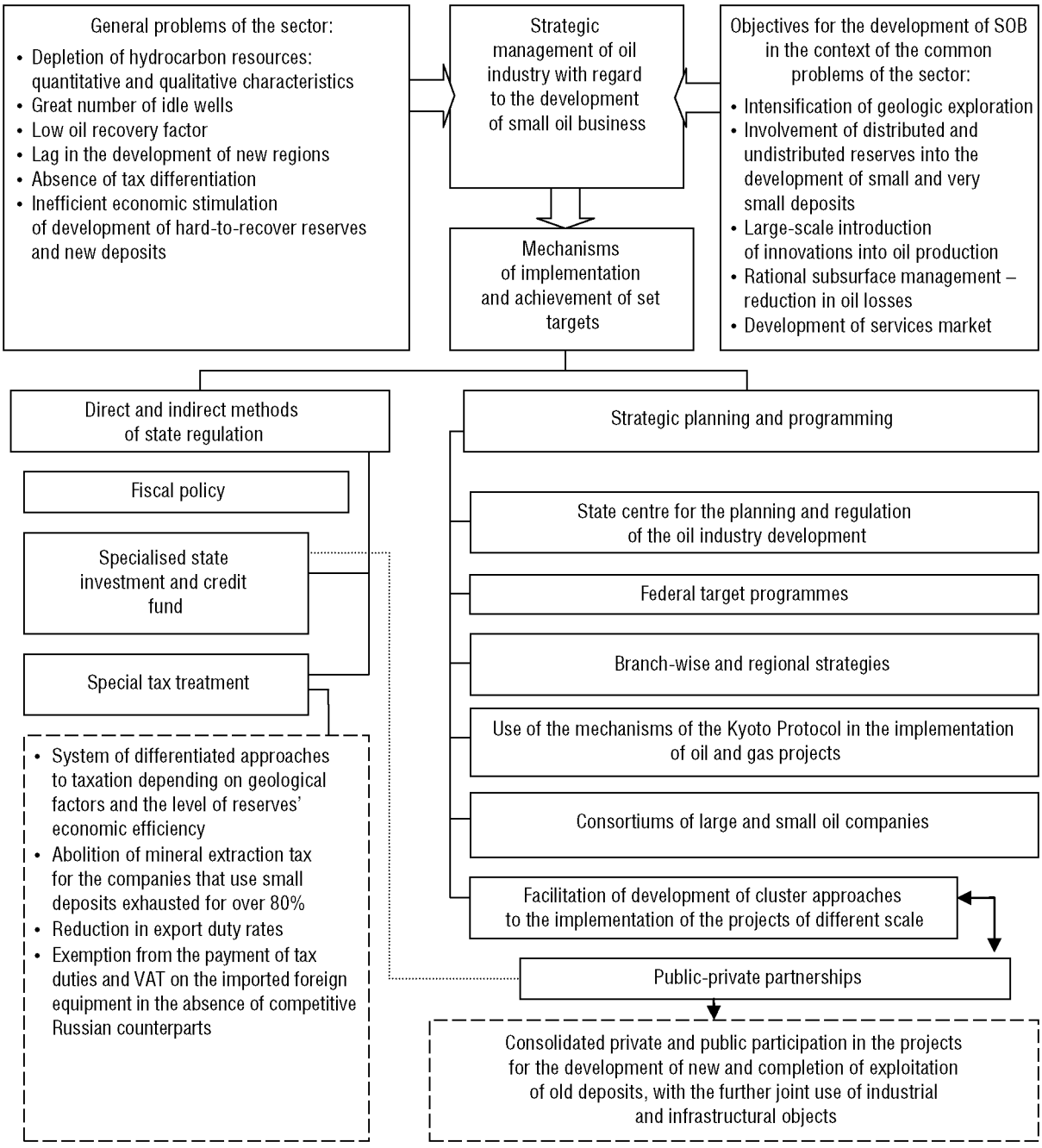


Figure 4. Conceptual model of the economic mechanism for strategic management of small oil business in Russia



(e.g. projects, implemented on the basis of the production sharing agreement). A certain part of the state oil reserve could also perform the role of a pledge fund of a high liquidity product at the organization of investment projects' financing. The resources of the specialised state investment fund may serve as a guarantor of the collateral for the funds borrowed by Russian companies for financing the projects in the fuel and energy complex.

4. Economic mechanisms of the carbon market.

The economic mechanism of the carbon market, used in Europe, the USA and Australia under the Kyoto Protocol or on the basis of regional and governmental initiatives (the example of the USA) is promising from the point of view of investments source and risks insurance.

For small oil companies, as well as vertically integrated oil companies, the use of these mechanisms could promote the attraction of additional investment in resource-saving and energy-saving projects, facilitating the reduction of CO_2, CH_4, N_2O emissions.

In general, the implementation of mechanisms for the joint implementation of the projects used in the European market, represents the following: the company, which is experiencing difficulties in meeting the quantitative commitments to reduce greenhouse gas emissions, provides partial funding ("carbon financing") for the implementation of projects of energy efficiency and promoting the reduction of greenhouse gas emissions to the enterprise working in another country where the cost of reducing emissions of one ton of these gases is significantly lower [8].

Conclusions

Therefore, the conceptual model of strategic management of small oil business in Russia can be represented in *figure 4*.

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