The Role of Small and Medium-Sized Businesses in the Development of Oil and Gas Fields on the Arctic Shelf of the Russian Federation

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Abstract. The article discusses the range of issues of economic interaction between operators of projects on the development of the Arctic shelf and companies supplying products and services for the needs of the oil and gas complex. The authors analyzed the economic multiplier effect arising from the involvement of small and medium-sized enterprises in the implementation of oil and gas projects. A common opinion is that only large corporations can do such work. Without denying the validity of the judgment on the possibility of implementing oil and gas projects in the Arctic only by experienced companies that have sufficient competence for the safe and efficient performance of work, it is worth noting that the modern structure of the global oil and gas complex (NGC) is largely represented by small and medium-sized enterprises. In 7 out of 10 such companies, the personnel does not exceed 10 people. Very important and indicative is the fact that during the implementation of large-scale projects for the development of hydrocarbon deposits, the share of suppliers of the oil and gas complex accounts for up to 80%.

1. Introduction

The suppliers of products and services for the needs of the oil and gas complex are construction, transport, service, metal processing companies, as well as other manufacturers of equipment and materials. Suppliers are also scientific and educational institutions, consulting enterprises, etc. Such a share of the suppliers’ work is due to the fact that, when implementing hydrocarbon production projects, a significant amount of supplies of paints and construction materials, metal structures, precast concrete, food, workwear, as well as research, educational, construction, transportation and many other types is required [1].

The oil and gas complex includes both enterprises directly engaged in production and companies that provide services for the needs of the oil and gas complex. The latter include enterprises specializing in drilling, geophysical, transportation and other services specific to the oil and gas sector. As part of the list of services under consideration, it is customary to distinguish services specific to oil and gas companies, as well as non-specific services consumed by all enterprises regardless of industry affiliation - repair services, information technology, etc. [2].
The subject of activities of service companies with a focus on servicing the needs of NGK enterprises, often based on a significant share of knowledge-intensive and special types of work, determines the deep integration of mining companies and supplier enterprises [1, 2]. For this reason, the successful development of the oil and gas complex is largely determined by the nature of the organization of relations between enterprises supplying goods and oil and gas companies.

2. The role of small and medium-sized businesses
The share of small business in the country’s total GDP does not exceed 20%, while this indicator in developed countries is about 50-60% [3, 4]. Studies have shown that small and medium-sized businesses play an important role in the national economy of any state, determining the structure and quality of GDP, as well as the rate of economic growth.

The development of small and medium-sized businesses meets the needs of all sectors of the Russian economy, as well as existing trends in economic processes taking place in the world.

The involvement of small and medium-sized businesses in offshore hydrocarbon development projects contributes to the expansion of the scope of employment, opens up opportunities for the implementation of entrepreneurial activities of the population, promotes the development of family business, reduces social tension, and also provides multivector economic growth.

Today on the territory of the Arctic regions there is a significant number of production assets, which since the times of the USSR have been affiliated with the military-industrial complex. Due to objective circumstances caused by the socio-economic crisis of the post-Soviet period, at present many enterprises of the military-industrial complex are at a loss or on the verge of bankruptcy. An example is the Murmansk region, on the territory of which enterprises were established in Soviet times to repair and modernize warships and submarines of the Northern Fleet, created in Soviet times [4, 5]. A significant part of these enterprises still have unique fixed assets, but are currently idle without government order.

Given the high scientific and industrial potential of these enterprises, most of the fixed assets of these organizations can be reoriented to produce equipment for the needs of the oil and gas complex. So, for example, from the point of view of the accumulated experience and knowledge of personnel, the involvement of enterprises of the military-industrial complex in the processes of performing high-quality welding works and processing of metal structures looks very promising [6].

Small and medium-sized businesses of Arctic regions in the initial stage of the implementation of projects for the development of hydrocarbon fields are able to perform a range of work required. This is the construction of access roads and internal roads, drilling and blasting, the construction of moorings, crushing and moving rocks, sand reclamation, all electrical work for temporary power supply for the construction period, the construction of networks and communications for temporary and permanent buildings and structures. The construction of floating berths, the repair of ships engaged in field development works, as well as the assembly of metal structures can be successfully performed by ship repair enterprises of the region [2].

It is important that a significant part of the equipment and materials necessary for the implementation of projects can now be supplied by Russian, and especially regional, companies - from pipes, steel and nails to gas turbine plants.

The industrial potential of small and medium-sized enterprises in the Arctic region can be successfully used in the provision of transport services (also by shipping companies), as well as in surveys and drilling. For example, the use of an icebreaker fleet for the needs of a project is very promising for Arctic projects [4].

The production capacities and territories of some small and medium-sized enterprises in the region are very attractive from the point of view of the prospects for the deployment of material and technical supply bases for drilling operations on the shelf, as well as the subsequent exploitation of fields. In addition, today regional enterprises (in particular, the Murmansk and Arkhangelsk regions) are competent in the matters of ensuring transportation of oil, gas and gas condensate, repair and
installation of drilling platforms and related equipment, as well as servicing a specialized fleet using existing production labor resources and capacities [4, 7].

The involvement of small and medium enterprises in hydrocarbon production projects reduces the risks and obligations of oil and gas companies associated with the need to address the issues of employment in the regions where operator companies are present [8].

3. Regional industry participation in oil and gas projects - driver of economic growth

The oil and gas sector opens up opportunities for organizing employment for hundreds of enterprises in related industries, while having exceptional economic and social significance, largely predetermining employment, strengthening interregional relations, the efficiency of economic relations, and increasing the tax base. It is obvious that the increase in production by related industries within the framework of participation in oil and gas projects contributes to the formation of demand for goods and services produced by these industries through chains of technological ties.

Implementation of hydrocarbon production projects in the new producing Arctic regions can revive the general economic situation in most sectors - primarily industry, the construction and transport sectors, which in the regions are usually represented by small and medium-sized enterprises. Oil and gas projects are able to engage key industries that are related to other enterprises through intersectoral technological chains. The receipt of the order by the main industries and, accordingly, the manufacturing of products are the locomotive of the development of related industries, which, in turn, contribute to the development of production of their own suppliers, etc. These circumstances lead to the formation of multiplier effects comparable to the effect of “self-stimulation of economic growth”. In this case, we are talking about stimulating the development of an upward spiral of production demand, which will begin to induce investment and consumer demand on its basis. According to research statistics, domestic demand is the most significant and most reliable driver of economic and social growth [9].

4 Organizational principles for the participation of small and medium-sized businesses in oil and gas projects

Along with the obvious competitive advantages and despite the high intellectual and industrial potential of Russian enterprises, domestic companies are often not able to compete with foreign colleagues in the framework of the tender procedures.

In most cases, domestic companies can still rely on victory mainly in tenders that involve the implementation of general construction, electrical and other types of work, that is, those that are not related to the production of high-tech products with high added value.

Along with this, in order to successfully use their industrial potential of the region in the process of implementing oil and gas projects, regional companies need to meet a number of serious requirements. As part of the tender procedures, project operators (or large general contractors) take into account a number of specific requirements. This includes suppliers' technical resources, their reputation, experience (similar types of work performed earlier), production indicators, technical and financial resources for work, technology, guarantees from banks and insurance companies. As part of the evaluation of tender proposals, very important attention is paid to indicators of the quality of work, environmental protection, the availability of the necessary equipment, the cost and timing of the execution of orders, the structure and organization of production, the creditworthiness of the company and many other indicators [5, 9, 10].

It is worth emphasizing that for most Russian regional enterprises, work in the perimeter of the oil and gas complex is a new type of activity. As a rule, regional enterprises, despite the high intellectual and industrial potential, need to significantly increase their competence in the field of international requirements for the quality of products and services, environmental protection, labor protection system, and participation in the implementation of oil and gas projects as suppliers [5, 7, 11].
Along with the obvious difficulties objectively for Russian enterprises to participate in oil and gas projects, there is a mechanism that allows domestic enterprises to maximize the chances of winning when participating in tender procedures.

The creation in 2006 in the Murmansk and Arkhangelsk regions of the associations of suppliers of the oil and gas industry “Murmanshelf” and “Constellation” is one example of the formation of an oil and gas cluster based on the industry community and an effective tool for creating conditions for the participation of SMEs in oil and gas projects. Today, each of the associations unites more than 200 enterprises and organizations wishing to participate in the implementation of oil and gas projects on the Arctic shelf. It is important that the associations are also an example of cooperation between the state and business, since the Governments of the Murmansk and Arkhangelsk Regions were one of the founders of the associations [9].

Currently, Murmanshelf unites project operators, general contractors of ongoing projects, construction, transport, logistics, oilfield services, ship repair, engineering enterprises, as well as scientific, research and educational institutions of Russia (Figure) [9].

![Figure 1. Directions of activity of member enterprises of the Murmanshelf Association.](image)

For small and medium-sized enterprises, such integrated economic structures offer unique opportunities for joining oil and gas projects. This opens up wide opportunities for joining with potential partners, searching for customers and suppliers, building relationships with competitors, government representatives, overcoming barriers between firms with different business styles. The formation of integrated structures simplifies access for small and medium-sized enterprises to other markets, removing barriers, increasing competition, ultimately bringing benefits to all partners of the economic association [12, 13].

Thus, the creation of production-type associations or other associations and unions based on mutual economic integration of interests, with the prospect of their transformation into oil and gas clusters, is one of the most effective mechanisms for involving enterprises in hydrocarbon development projects.

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