

The main directions of structural transformation of the oil and gas complex in the context of sanctions restrictions

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Abstract. The Russian oil and gas sector has been under sanctions since 2014, but in 2022 unprecedented restrictions were imposed on the industry, significantly changing the way companies operate and leading to a major transformation of their development strategies. At the same time, many of the imposed sanctions are highly conditional, i.e. the vague wording in the documents allows them to be interpreted rather variably, which allowed many foreign companies to cooperate with Russian companies to the same extent until 2022. The radically changed conditions of oil and gas complex functioning have now made it urgent to consider the directions of structural transformation that the domestic oil and gas complex will have to face. The article considers three basic directions of transformation – the intensification of import substitution processes, reconstruction of logistic chains and transfer of international industry investment projects into the Russian jurisdiction.

Keywords: Oil and gas complex · Sanctions restrictions · Import substitution.

1. Introduction

One of the most important areas of structural transformation of the industry in the created conditions should be technical sovereignization, the prerequisites for which were created back in 2014, but they have not led to large-scale effects in the direction of reducing oil and gas companies' dependence on imported equipment – the share of foreign equipment has dropped from 60 to 40%. Thus, the role of imported equipment for the industry is still very high (Figure 1).

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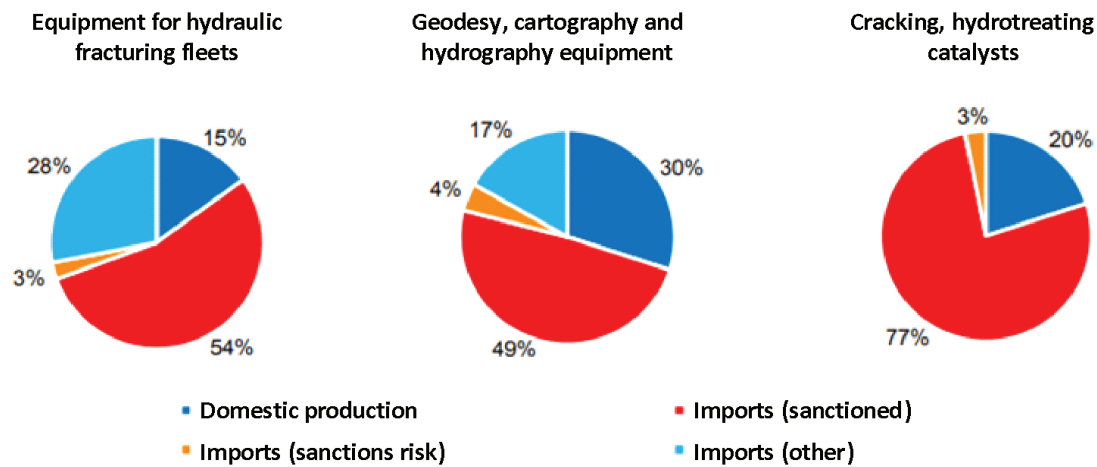


Fig. 1. Structure of equipment markets of oil and gas companies in the Russian Federation. *Source:* (Energy Trends, 2022, p. 11).

In February 2022, the world's four largest oilfield service companies – Halliburton, Schlumberger, Baker Hughes and Weatherford International – announced the suspension of operations in the Russian market. In the short term, the withdrawal of oilfield service companies will not have a significant negative effect on the oil and gas sector, according to experts, but in the medium term it could lead to lower efficiency and production volumes, exacerbating the need to develop import-substituting technologies for enterprises in the industry. If this objective is not achieved as soon as possible, it could lead to the following problems:

- lower resource extraction efficiency;
- higher production costs and difficulty in developing hard-to-recover reserves;
- freezing of new investment projects aimed at the development of new wells with hard-to-recover oil (Pirogov and Shangina, 2022).

2. Materials and methods

That is why oilfield service companies, which ensure reliable and uninterrupted operation of the industry, were the first to feel the effects of the introduction of restrictions on the supply of oil and gas infrastructure maintenance equipment, technologies and IT solutions. For example, the share of imported equipment for enhanced oil recovery, offshore production and refining exceeded 50-65% in some nomenclature. Western oilfield service majors led the way in production enhancement and oil recovery, and their share in software for a number of solutions exceeded 90%.

Therefore, at the moment, among the priority tasks in the field of import substitution are the creation of domestic mobile complexes (fleets) for hydraulic fracturing, rotary steerable systems in drilling, seismic exploration equipment, and catalysts for oil refining.

3. Results

Some Russian oil and gas service companies have achieved significant success in replacing foreign technologies in recent years and in some cases have even surpassed their foreign competitors, but effective import substitution in the industry has been hampered by the customers' desire to continue working with foreign companies and solutions for various reasons (Katkova, 2022, p. 7).

Nowadays, Russian oil and gas companies have stepped up their R&D efforts to localize technologies, equipment and IT solutions. For example, Rosneft launched a localization and import substitution program back in 2015. In 2019, to ensure technological independence, the company separated a group of enterprises into a separate Machine-Building Cluster. This decision made it possible to carry out repairs and maintenance in-house, as well as to set up equipment production.

One of the leaders in localization of equipment and technology is Tatneft. When the TANECO refinery complex was launched in 2011, 97% of equipment was imported, while now the company uses almost 100% domestic equipment. "Tatneft" quickly made adjustments to its strategy – until recently the company was buying annually 700 billion rubles worth of equipment and components from leading Western manufacturers. However, the prompt decision was made to switch to purchasing from Russian producers. The Company has to work hard to find reliable domestic manufacturers, and a number of potential suppliers are supported by Tatneft to increase the volume and range of products.

"Gazprom Neft", together with the Moscow Institute of Thermal Engineering, will test the first domestic hydraulic fracturing fleet in 2023. The complex is expected to be more efficient than its foreign counterparts due to higher pumping capacity.

Substantial growth in output requires an increase in the limits of concessional financing and the removal of collateral requirements. As a rule, technology developers and manufacturers cannot always afford to provide collateral.

The government is taking the first steps to establish the production of Russian spare parts and components. Oilfield service companies, as well as companies for which oilfield service is an additional activity, can now apply for preferential loans at a subsidized rate, but so far this plan considers loans of up to one year with a limit of up to 10 billion roubles and up to 30 billion roubles for a group of companies.

Restrictions on the supply of spare parts and consumables from unfriendly countries have created major problems for the industry, since switching to Russian production requires both time and resources, and finding analogues, mainly in China, is impossible without rearranging logistics, which makes the end product more expensive.

Difficulties arise in the maintenance of guaranteed imported equipment: due to the lack of necessary spare parts service and repair works have to be shifted. In order to solve this problem it is important to focus on the early establishment of component production (Oil service under sanctions, 2022).

The second direction of structural transformation in the industry is connected with changes in logistics and the need to redirect export flows to the East, to the countries of the Asia-Pacific region (APR). The pipeline projects to China, which are currently being discussed and beginning to be implemented, will only be able to be launched closer to 2030. However, if Western countries move away from Russian gas quickly, they will take over a significant portion of LNG supplies, which will also make new pipeline projects from Russia relevant to China.

Logistical changes will also affect domestic energy consumption, for example through regional gasification and the associated interconnection of Sakhalin, Vladivostok and the Power of Siberia gas pipelines.

Changes in supply chains inevitably led to changes in pricing in the domestic fuel market, as oil was supplied to Russian refineries at prices linked to international quotations. It was possible to stabilize and even slightly reduce oil prices for the domestic market by promptly decoupling the domestic market from external indicators (Tikhonov, 2022, p. 4).

4. Discussion

Consider the impact of sanctions on Russia's largest oil and gas companies. The strongest Western restriction is Germany's decision to halt the certification of Nord Stream 2. In addition, personal sanctions were imposed on the management of the Russian company, as well as a partial nationalization of some of Gazprom's assets in Europe and a complete ban on cooperation with North American companies. This has resulted in a global energy crisis, a sharp rise in gas prices (Figure 2), which will be felt more acutely with the onset of cold weather in three to five months, and a gradual reorientation of gas flows to Asia.

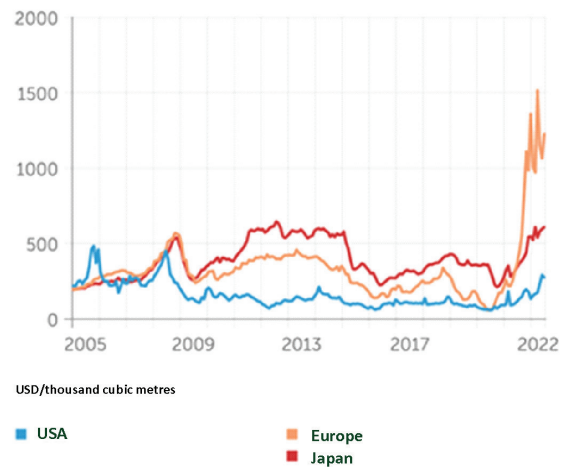


Fig. 2. Dynamics of gas prices for 2005-2022, USD/cm³. Source: (Kudiyarov, 2022, p. 15).

The EU and the US have also imposed a number of restrictions against the Russian oil business:

- a ban from 2023 on maritime deliveries of oil from the Russian Federation to Europe. Thus, 68% of Russia's energy resources supplied to the EU are restricted, while the remaining 32% are delivered through pipelines;
- EU ban on insuring tankers carrying Russian oil;
- a ban by the EU on investment in new oil projects in Russia.

Such policies have led to a 50% increase in oil prices and resulted in Russian companies selling more energy to Asian countries, primarily India and China.

Despite the sanctions against it, NOVATEK has announced that it will be able to launch its new LNG project (Arctic LNG 2) on time – and this despite the refusal to supply equipment. In addition, the company has new customers, which previously used Gazprom's services. "Lukoil and Surgutneftegaz are subject to the same sanctions as other Russian state oil companies: a European maritime embargo, a ban on tanker insurance and new investments, as well as personal restrictions on company management. The sanctions have led to a greater focus on trade with Asian partners (Kompanishchenko, 2022).

It should also be noted that, against the background of all the marked transformational shifts in the sector, many oil majors, such as Lukoil and Gazprom, have decided not to pay dividends for 2021, leading to a fall in their market value – for Gazprom, this relationship can be seen very clearly.

The third, no less important area of structural transformation of the oil and gas industry lies in the area of legal jurisdiction and has to do with the need to transfer all Russian oil and gas assets entirely to the Russian Federation and/or Russian oil and gas companies.

This was the reason for the presidential decree to transfer Sakhalin Energy Investment Company Ltd (SEIC), the operator of the Sakhalin-2 oil and gas project, the largest of the three projects being developed with the active participation of Western industry majors under production sharing agreements (PSAs), to Russian jurisdiction. After the start of the PSA, the technological supervisors of both projects, Exxon Neftegas (an ExxonMobil subsidiary with a 30% stake in Sakhalin-1) and Royal Dutch Shell (27.5% minus one share in Sakhalin-2) announced their intention to withdraw from the projects and effectively froze their operations by withdrawing technical and managerial staff. The Sakhalin-2 project proved the most resilient to geopolitical events due to greater localization of work processes, with oil production falling by just 1.8% a day in May 2022.

After this decree was signed, the State Duma passed in its third reading a law establishing the procedure for transforming a branch (subdivision) of a foreign legal entity into a limited liability company in a domestic jurisdiction. Now a branch or a representative office of a foreign company may be transformed, not only voluntarily, but also by a compulsory decision of the court, into an LLC

where shareholders or shareholders of the foreign company will become co-owners with the same level of control. However, the law will also allow the new structures to restrict the corporate rights of foreign co-owners if they interfere with the normal functioning of the company.

According to the adopted version of the law, the grounds for transformation of a branch may be evidenced, in particular, by statements by foreign owners "in the absence of obvious economic reasons" to terminate or suspend operations in Russia, as well as the commission of actions aimed at compliance with sanctions, notification of more than a third of employees about layoffs. Such conversion should be applied if an entity from a hostile country interferes with the continuous operation of a branch or representative office in Russia, attempts to terminate it, or evades the intended use of its assets.

Sakhalin-2 currently has a long-term service contract for the maintenance of four Frame 7EA turbines (used in the process, 90 MW capacity) and five Frame 5 turbines (25 MW, for power generation). Such turbines are not yet manufactured or serviced in Russia. Therefore, the solution to this problem lies either in mastering in-house production of spare parts and servicing these machines, or in transforming technological processes for available technology and equipment. For example, the localization of equipment for Arctic LNG-2 can take two or three years (Kudiyarov, 2022).

5. Conclusion

Thus, the directions of structural transformation of the Russian oil and gas complex in the context of sanctions are realistic in the medium term, although they will require large-scale capital investment. Oil and gas companies should concentrate their investment efforts in R&D, allowing full technological substitution of imported technologies and equipment, and the state should develop appropriate financial incentives for the industry and ensure the stabilization of economic conditions.

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