

UDK 323(985)

Stockman can't be frozen



© **Lukin** Yuri Fedorovich, Doctor of History, Professor, honored worker of the high school of the Russian Federation. Contact phone: +7 (8182) 68 34 47. E-mail: ylukin@atnet.ru.

Abstract

It is analyzed the situation of the development of the Stockman field in the Arctic region, which is happened in 2012

Keywords: *Arctic, shelf, Gazprom, Stockman, gas.*

The adoption of the radical solutions to the development of the Russian Arctic, in the continuing of the work on the Stockman field, the search for a balance between the economy and ecology have now become a special geopolitical significance. Russia has a real choice and the opportunity to the continue in the few more years, or maybe decades, the development of the hydrological deposits on the land. Yet the window of available capacity becomes smaller, the trend has to be closed. According to various experts, the hydrocarbon deposits in Russia, located on the ground, mostly exhausted their resources, their production is up 60%. The problem arises of how to preserve Russian's competitive advantages in the coming decades, there is still a dynamic demand for oil and gas. The main hope for Russian's hydrocarbon production growth in the foreseeable future in the continental shelf, particularly in the Arctic. But the share of the offshore projects in the total oil and gas production in Russia is estimated at between 3 and 6%, maybe even less. Jacques de Buassezon, General Director of "Total Exploration and the Development of Russia", opening VII Annual Conference "Shelf of Russia", which was held in Moscow from 26 to 29 March 2012, in his speech said that 20-25% of oil and gas in the world is produced on the offshore fields. In Russia, this figure is almost equal to zero, although there is a huge potential становится континентальный шельф, прежде всего в Арктике¹.

Each Arctic country in the race for tomorrow's Arctic resources has its own motivation, to which attention was drawn to the article by Andrew E. Kramer, Clifford Krauss, published in the "New York Times": "Russia develops offshore drilling in the Arctic"². As the depletion of oil fields in Siberia with no new developments of oil production in Russia in 2035 could fall by nearly a million

¹ Shelf of Russia: the key to the success in the alliance with the leading oil and gas campaigns of the world. URL: <http://www.safeprom.ru/articles/detail.php?ID=16268> (date of access: 07/16/2012). The conference was organized by The Energy Exchange (UK) with the official support of the Ministry of Energy of the Russian Federation, the Federal Agency for Subsoil Use and Arctic Forum of EU.

² Kramer Andrew E., Krauss Clifford. Russia Embraces Offshore Arctic Drilling. URL: <http://www.nytimes.com/2011/02/16/business/global/16arctic.html> (date of access: 02.08.2012).

barrels, as the data International Energy Agency. Since oil and gas are the basis of the Russian economy, giving the country some 60% of all export revenues, Russia sees no other option but to move into the ocean. But as we move to the Russian maritime domain oil companies faced with the fact that other countries are facing the Arctic Ocean, above all the United States and Canada, with great caution related to the development of oil fields in these regions - based on environmental considerations and safety issues. Processes of the global reset of the Arctic is the most directly related to the balance between economy and ecology. The main problems that arise here are related to environmental hazards, safety issues drilling offshore wells in the harsh conditions of the Arctic.

С 2005 года Россия является лидером по объемам добычи углеводородов On the Russian shelf was opened the largest fields (Stockman, Rusanovskoye, Leningrad, Dolginskoye, Prirazlomnoye, etc.) of oil and gas reserves of about 10 billion tones of oil equivalent (CE)., Four gas and condensate fields (Kamennomyskoye-Sea, North-Kamennomyskoye, Ob and Chugoryahinskoye) confirmed founlness sea for four other deposits (Semakovskoye, Anti-payutinskoye, Thoth and Yakhinskoye Kharasaveiskoye), which provided gas reserve of 1.5 trillion cubic meters. Since 2005, Russia is the leader in terms of the production of hydrocarbons in the Arctic shelf, outpacing the total production of the United States and Norway. Conducted by members of RAN Laverov N.P., A.N. Dmitrievsky, corresponding member of the Russian Academy of Sciences V.I. Bogoyavlensky the analysis of the resources, reserves and production of hydrocarbons has shown global leadership of Russia for a number of positions, including the resources and reserves of hydrocarbons on the land and on the shelf of the Arctic³. Naturally, the question arises as to why Russia is an authoritative opinion of Academicians of RAS, one of the first in the world to begin the development of the Arctic shelf, having such a rich resource base, provides the learning and the development of the Arctic shelf at rates significantly lagged behind the other states, what are the causes of low investment attractiveness of the mineral resources of the continental shelf of Russia?

To answer this question, we turn to a competent opinion of the deputy chairman of the State Duma of the Russian Federation about the Natural Resources and the Environment of V.M. Tarasyuk and the Minister of the Natural Resources of Russia of S.E. Don, has all the information on this issue.

³ Laverov N.P., Dmitrievskiy A.N., Bogoyavlenskiy V.I. The development of the marine natural resources in the Arctic // The strategy of the Russian maritime activities and the environmental economy in the Arctic. IV National Marine Scientific Conference: conference materials. Murmansk, 7-8 June 2012 Murmansk Acad Bauman, 2012. URL: <http://ocean.mstu.edu.ru/docs/materials.pdf> (date of access: 19.06.2012).

Continental shelf of Russia: the reasons of the slow cultivation

Donskoy S.E.	Tarasuk V.M.
<ul style="list-style-type: none"> a) lack of available mechanisms of the economic stimulation; b) severe natural-climatic ice conditions, specific to the Arctic shelf; c) the lack or the presence of the existing infrastructure, especially in the remote regions in the eastern Arctic; d) the lack of the technologies to efficiently and safely develop of the oil and gas in the Arctic shelf; e) legal and institutional regime, that does not lead to attract the necessary investment of the shelf. 	<ul style="list-style-type: none"> a) low geological knowledge, so far of the exploration of resources does not exceed 10%; b) unfavorable geographical location of the most fields and promising areas for more than two-thirds of resources are on the shelf of the northern seas (Barents and Kara Seas), which leads to higher costs for the research and the development of these de-posit; c) poor infrastructure for the production and the transportation of extracted resources of the shelf; d) the changing of the tax regime; e) an underdeveloped legal framework, not taking into account the realities of the work on the continental shelf

Pic 1. It is created by the authors: S.E. Donskoy⁴ and V.M. Tarasuk⁵ (2012)

Speaking on the August 2, 2012 at the Cabinet meeting when discussing the "Draft Programme of the Russian continental shelf exploration and the development of the mineral resources in the long term" in the years 2012-2030 S.E. Don, the Minister of Natural Resources of Russia, said that the shelf is the only oil and gas province, within which the probability of opening of large and unique deposits of hydrocarbons. Meanwhile, in the exploration and the geological studies of the continental shelf of Russia is now significantly behind other oil and gas producing states. SE Donskoy led to compare a few illustrative figures. So, in the North Sea, an area of 130 thousand square meters. km as of June 2011 3366 drilled and exploration wells. In the Norwegian sector in the area of 150 thousand square meters. 1101 km drilled wells. In deep offshore Brazil, in 2008-2010 only 246 wells have been drilled, with the success of exploration drilling in these areas ranges from 40 to 65%. Against this background, the situation in the Russian sector looks depressing. In all 6 million square feet. km of the Russian shelf for the time to study it only drilled 257 exploration wells. In 2008-2010, the Russian shelf drilled 11 wells open only four fields. For comparison, in the same period in Norway drilled 10 times more holes (110) and, accordingly, the result was recorded 10 times - 44 deposit (Don SE). Russian Prime Minister Dmitry Medvedev, in his speech during the discussion of the draft program of exploration of the continental shelf of Russia

⁴ Donskoy S.E. The project of the exploration program of the continental shelf of Russia and the development of mineral resources in the long term, until 2030. URL: [http:// government.ru/docs/19902 /](http://government.ru/docs/19902/); [http:// government.ru/docs/19888 /](http://government.ru/docs/19888/) (date of access: 08.02.2012).

⁵ Tarasyuk V.M. The strategy of the development of the continental shelf of the Russian Federation. URL: http://burneft.ru/docs/archived_docs/articles_tek/2 (date of access: 08/03/2012).

noted that the program is 2030. "But this does not mean that you can safely wait for the year 2030, our competitors, and those who are engaged in general shelf in the world to work much faster than us, so we must act. In general, we must remember that every 50-70 years, the world is experiencing an energy revolution, and it is not clear where in the same period of time, we find ourselves with our hydrocarbons, whether we are interested in someone⁶.

Hydrocarbon production in the Russian Arctic shelf requires the use of the modern technology, a unique complex of engineering structures for drilling and production of oil and gas, infrastructure and facilities of the coastal component of oil and gas, reliable logistics, as well as the significant investment, changes in regulatory and tax base correction vector of the Arctic policy of the Russian state. In Russia it seems really limited choices, we must immediately go for oil and gas in the Arctic. *More September 22, 2011, Vladimir Putin said in Arkhangelsk during the second International Arctic Forum "The Arctic – is the Territory of Dialogue" in September 2011, which is essentially Russia really starts to develop the Arctic shelf, opens a new chapter in the history of the Arctic exploration and the economic activity here will increase.*⁷.

Problems, difficulties in the development of the Russian Arctic shelf are very vividly manifested in the strategic project of JSC "Gazprom" - the development of the Shtokman field, which is moving very slowly and is in the crisis due to a number of the reasons, analyzed and summarized by me on the basis of a study of the multiple sources, including:

- I. Due to the unstable economic situation in the world gas markets, changes in the market conditions in the connection with the ongoing European financial crisis, the trend of falling demand for gas and the price reduction.
- II. For braking Stockman is used widely publicized increase still expensive and environmentally hazardous production of shale gas in the U.S. and similar projects in other countries.
- III. Discovery of promising the new natural gas fields offshore warm Mediterranean, Caspian and other seas, where exploration, drilling, production is less expensive than in the harsh conditions of the Arctic, and plan for their development and logistics based on the latest technologies.
- IV. Technical complexity of the project, selection of gas liquefaction in the Arctic, which has led to disputes between the partners.
- V. Choice of the cost-ineffective model of the developing Stockman, investment, a significant rise in the project design process.
- VI. Underestimation of modern technology to produce liquefied natural gas using floating LNG plants, technological backwardness of Russia in general.

⁶ Medvedev D.A. The speech 08/02/2012. URL: <http://government.ru/docs/19902/> (date of access: 08/02/2012).

⁷ Putin V.V. The speech at the Forum 22/09/2011 at Archangel. URL: <http://premier.gov.ru/events/news/Dcdj\v dscnegktyb yf ajhevt16536/> (date of access: 04.08.2012).

- VII. Gazprom's lack of experience in the implementation of the development of hydrocarbon fields in the Arctic Ocean.
- VIII. There are legal and tax regime in Russia, according to foreign partners, not helped to facilitate the development of mutually beneficial agreements and strategic partnerships.

As it is known, "Shtokman Development AG" in 2008-2012, Gazprom owned 51% of the capital, the French Total - 25%, Norwegian Statoil - 24% (up to July 2012). The explored reserves (C1 category) are 3.9 trillion cubic meters. of gas and 56.1 million tons of gas condensate. The deposit is to be developed in three phases. Gas production at the Shtokman gas condensate field was planned for 2013, 2016-2017, but did not rule that the launch could be transferred to the 2018-2019. Initially through the development of the Shtokman project was planned that half of the 23.5 billion cubic meters. meters of annual production at the Shtokman field will go via Murmansk - Volkhov gas export pipeline "Nord Stream", and the gasification of regions, and the other half - the production of LNG. Foreign partners of the project, including the Norwegian Statoil and France's Total, have lobbied against the fuel in the "pipe" in favor of the construction of an LNG plant. However, the parties were unable to agree on further technical implementation of the project and, therefore, to make an investment decision. French side insisted on transporting gas and condensate to shore by a single pipe (split them on the shore), and Russia - the separation of condensate from the gas directly to the mining vessel and its shipment to the sea. Investment decision on the Stockman field in 2011-2012 postponed several times, and it is likely that it will be accepted only in 2013-2014. The reason for such a delay in the decision on Stockman was well-founded doubts about the effectiveness of shareholders on the financial and economic component of the project due to changes in the market conditions.

The growth of shale gas production in the USA has led to a significant decrease in gas prices in the USA market and the slowdown in the Stockman project. Specialists, however, differ greatly in the evaluation of the resources and reserves of shale gas, as they often operate on different concepts⁸.

⁸ Shale gas in the United States: intermediate results. URL: trubagaz.ru> issue ... the-day/slantsevyjj-gaz ... itogi / (date of access: 10.09.2012).



Picture 2. The estimation of the location of the shale gas by stratospheric analysis
Source EIA. URL: http://www.pronedra.ru/uploads/c/EI/EI6pgMZf66_orig.jpg

Overall impression is that the shale gas is still less cost-effective than natural gas production in the Arctic, and environmental risks in the extraction of shale gas are a serious threat to the population. But the uproar in the world around shale gas has really slowed down the implementation of the Stockman's project. However, given the pattern of the depletion of the traditional reserves of gas, shale gas is still not able to be in the near future of a good alternative to natural gas. In 2011-2012 the commercial production of shale gas is still conducted in the USA and Canada. According to preliminary estimates, in 2012, shale gas production in the USA of 220-250 billion cubic meters (in 2011 it was 194 billion cu m.). The cost of production of shale gas in the fields of American (August 2012) was in the range of 130-260 dollars per thousand cubic meters in Canada - 140-230 dollars per thousand cubic meters. At the same time, gas prices in the region are at about \$ 100 per thousand cubic meters. Thus, under the current pricing environment in 2012, shale gas production in the North America by pure gas fields for the most manufacturers is disadvantageous. In Europe, related to the shale gas drilling after the poor results of the first wells in Poland were more restrained. The Board of Directors of OAO "Gazprom" believes that at this stage of shale gas production in Russia is inappropriate due to the high availability of conventional gas reserves, the cost of production is significantly lower than the estimated costs of gas production from shale rock, and also carries significant environmental risks⁹.

⁹ Gazprom will continue to study the market for the shale gas. URL: <http://www.oilcapital.ru/company/183630.html> (date of access: 14/11/2012).

More significant competitive advantages are new fields of the warm seas, open recently (why produce oil and gas in the Arctic cold, if not exhausted deposits warm seas, the Middle East, the Caspian Sea?). In December 2011, Texas's company of the Noble Energy reported that found in the Mediterranean Sea gas field volume of 142-225 billion cubic meters. In general, Levantine basin, located between Cyprus and Israel, contains an estimated USGS, 3,455 trillion cubic meters of natural gas, or about the same number as in the Stockman field. Cypriot President Demetrius Christofias said that the countries are considering a gas pipeline 40 km of the subsea between Cyprus and Israel. Gas in the both countries will probably be liquefied at facilities located either in Israel or Cyprus. Later can be exported as LNG to Europe (via Cyprus) and in Asia (after Israel).



Picture 3. The project of the gas pipe-line Israel –Kipr-Greece-Europe. URL: small_information_items_1747.jpg

In Israel, talked about the total elimination of the export of the hydrocarbons, which is directly affected by the plans of the Russian Gazprom. Energy around the Mediterranean shelf unfolds acute energy war between Turkey, Israel, Cyprus, North Cyprus, and Lebanon.

The financial and the economic component of the Stockman project in terms of the incidence of gas demand in Europe and reduce the price of gas markets, increased competition, and new discoveries certainly complicates the implementation. Stockman Development shareholders felt the need to reduce the cost of the first phase of the Stockman-ray project at least 10% to

make it cost-effective, to increase its profitability, from Moscow needed tax relief. In addition to fiscal uncertainty, the development of the project slowed down, according to the partners, operating a business model that is difficult to obtain financing and required revision. Shareholders did not like the technical configuration of the project. According to the foreign partners in Stockman, the transition to a one hundred percent of LNG allows to obtain access to more markets than is possible in the case of export of labor lines. Total capital of the project was assessed about 15-20 billion dollars¹⁰.

In the summer of 2012 Stockman's project entered into a protracted period of the crisis. In June 2012, members of Showman Development AG (State 450) received the notice of the dismissal. The budget of the company for the entire existence was about \$ 1.5 billion, half made Gazprom, and not all of the money went to the technical developments¹¹. Norwegian Statoil has put its share (24%) in the company of the special purpose Stockman Development AG, the major shareholder - Gazprom (51%) and put into invests in the project about 354 million dollars of investment. The head of Statoil, Helge Lund and Senior Vice President for Europe and Asia Torgeir Kydland resigned from the Board of Directors of Stockman Development.

Gazprom, in the current situation, in my opinion, has three options: 1) to establish a joint venture with other foreign investors, 2) to freeze the Stockman project, counting on the Yamal-Nenets Autonomous District, there by increasing production at Polar, Yamburg fields and to forget about Bovanenkovskoye with its huge reserves on the land 3) to change the technological component of the project, making a strategic bet on the construction of an underwater complex of gas, floating LNG plant in the production area by introducing a system of shuttle marine transportation of liquefied gas. The shortest interval of time to be with the first option, the longest – is the second. These are a combination of two or three options, a hypothetical failure of the foreign investors, and other combinations. The main limitations - investment, technology, ecology, - in different combinations will produce different results.

Stockman project - is, firstly, a business project, aimed at making a profit. It is only naturally that foreign partners of Gazprom so thoroughly consider the cost, calculate the risks, seeking relaxation in the tax regime. Stockman is undoubtedly one of the most expensive projects in the world. The cost of the developing the first phase of the Stockman field was, according to some estimates, \$ 15 billion and had a tendency to grow, in the part because of the risks in the harsh

¹⁰ Safronov E. The foreign participants of Stockman will aim to reduce its cost. URL: <http://www.rbcdaily.ru/2012/05/15/tek/562949983832481> (date of access: 07/16/2012).

¹¹All employees of the operator Shtokman fired. URL: <http://lenta.ru/news/2012/06/19/away/> (date of access: 08.17.2012).

conditions of the Arctic (drifting ice, icebergs, cold temperatures, polar conditions), the need to build a gas pipeline to Teriberka longer than 500 km. For comparison, the project "Pluto" Australian Woodside Petroleum worth about \$ 15 billion, involves the extraction of gas from offshore fields, with its subsequent transportation to the 180-kilometer of the subsea pipeline to the on-shore gas liquefaction plant.¹² This project is similar to Stockman, but in more comfortable conditions.

However, there is a legitimate question, why project costs, available resources on Stockman and do not invest in other modern technologies, using benchmarking – is the best world experience? In Norway, for example, is being developed promising innovative projects related to the use of submarines for the production of hydrocarbons. Scandinavian scientists began the developing special submarines, which will move around in the water oil-producing facilities in the Arctic¹³. As reported at 30 January 2012 the British weekly newspaper "Sunday Times", such submarines regardless of the situation on the surface will be a few weeks to work in the extreme conditions of the North, which will significantly reduce costs for oil and gas companies and to reduce the environmental risks. Scientists at the Institute of Marine Research in Norway Trondheim have developed the design submarines, which, according to the engineers, can work under the ice for weeks and in the storm, ensuring proper installation and the safe operation of oil and gas production facilities. Vessels of 40 meters and with the ability to work at a depth of 450 m will accommodate crew of 10-14 people and carry the necessary equipment weighing up to 50 tons. Submarine design was presented to the developers of the international conference "Arctic Frontiers" held in Tromso (2012) the energy in the Arctic¹⁴. Norwegian state oil company "Statoil" has already shown interest in these submarines, which are believed to be in the future will help to overcome the difficulties of extracting its operating systems in the Barents Sea. "Severe weather and sea conditions may make it impossible to function normal oil production equipment," - said research engineer project Benar Svennig. "Moreover, even when it works, greatly increases the risk of an accident, which could lead to oil spills," - he said¹⁵. "Ships can stand for about six months a year," - said Per-Ola Hedin, the Swedish shipbuilder company «Kockums», also involved in the project. According to

¹² Throw the development of Stockman is impossible. URL: <http://www.forbes.ru/sobytiya-column/kompanii/108894-brosat-razrobotku-shtokmana-nelzya> (date of access: 08/31/2012).

¹³ Scandinavian scientists began creating of the special submarines for full travel under water oil-producing facilities in the Arctic. URL: http://energobelarus.by/index.php?section = news & news_id = 7424; http://www.energostrana.ru/industry/11887.html (date of access: 05/08/2012).

¹⁴ The Sixth international conference about "Arctic Frontiers" in Tromso, from 22 to 27 January 2012 Energy of the Arctic territories. URL: http://www.norvegia.ru/News_and_events/happen-ings/Events/International-Conference-on-Energy-in-the-Arctic/ (date of access: 08.19.2012).

¹⁵ Scandinavia create submarines to move under water oil production complexes in the Arctic. URL: <http://burneft.ru/main/news/673; http://energo-news.ru/archives/89229> (date of access: 08/19/2012).

him, this leads to enormous costs for the oil companies, while the submarine can operate for several weeks without any problems.

Choice of the platform or submarine for the producing the hydrocarbons in the Arctic has its own strengths and weaknesses. Many oil companies have placed a piece of the equipment for the extraction of resources in the seabed, but the movement of the water processing facility, which would ensure the protection of plants from the effects of severe weather conditions, is currently facing enormous challenges. In particular, the maintenance of such plants may be made until efforts of the surface vessels, which threaten to freeze water, severe storms and the Arctic icebergs. Furthermore, the process is complicated by the long polar night.

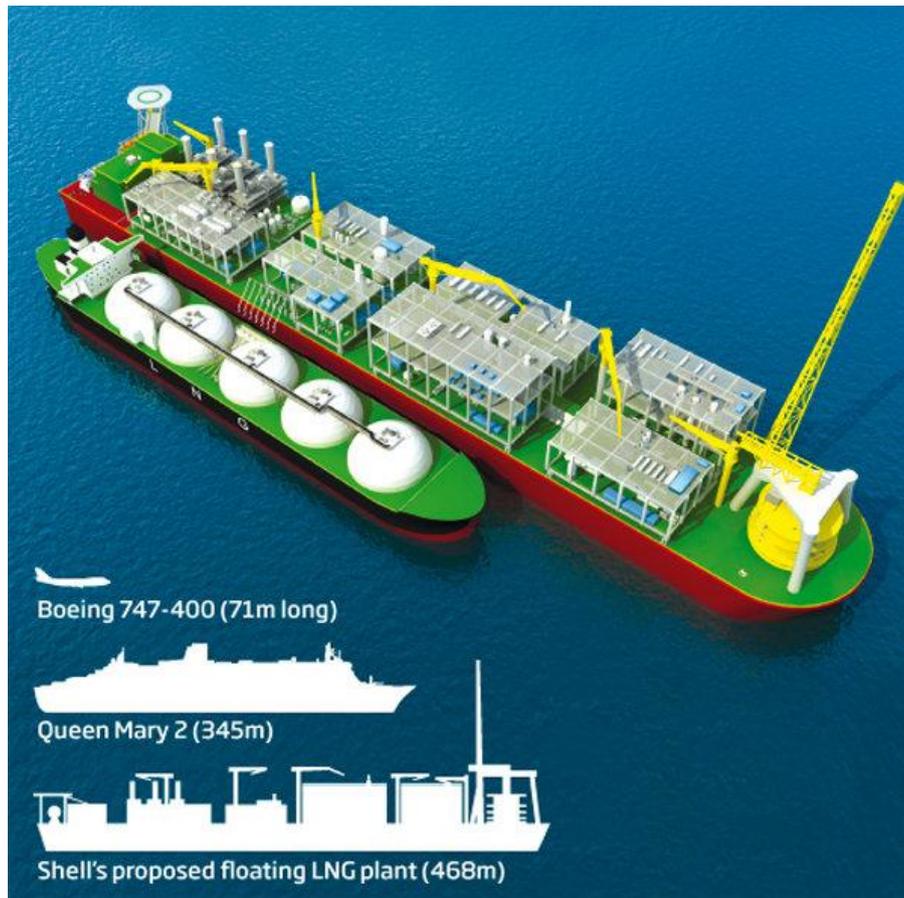
I think that the JSC "United Shipbuilding Corporation" JSC ("USC"), widely known Severodvinsk's and Petersburg's companies including OAO "PO" Sevmash ", JSC" Center of ship repairing, having the vast experience in the production and the modernization of the submarines, ice-resistant fixed platform "Prirazlomnaya", self-elevating floating drilling rig "Arctic" could no worse than foreign companies to cope with the construction of the submarines and other equipment for underwater extraction of hydrocarbons in the Arctic. The more so because of "USC" in the process of upgrading the first time in decades in Russia creates new shipbuilding facilities, including in partnership with global industry leaders. Thus, in the Far East in Bolshoi Kamen begins installation of the equipment in the first stage of the construction of large-scale shipbuilding center. Preparations are underway for the construction of a modern company producing offshore oil production equipment under a joint venture with Sino-Singapore Yantai Raffles. Successfully carried out the first phase of construction of the New Admiralty shipyard on Kotlin Island, near St. Petersburg as part of the joint venture "USC" to the Korean shipbuilding giant company - STX. In late 2010, JSC "United Shipbuilding Corporation" with the Finnish branch of the same STX formed a joint venture «Archtech Helsinki Shipyard», specializing in the production of complex marine equipment for operating in ice conditions. On the new shipyard will build ships for harsh arctic conditions, including ice-class tankers, gas carriers, supply vessels and maintenance of offshore platforms and the platform itself to produce hydrocarbons on the Russian shelf. Created a joint venture with the Corporation Saipem – is a division of Italian concern ENI, and with the concern Wärtsilä (Finland)¹⁶. Using the world experience of the world "OSK" can make the significant progress in the production of the modern equipment for the Arctic fields.

¹⁶ JSC "United Shipbuilding Corporation" at the end of 2011 consisted of 60 leading building offices, shipyards and ship repair enterprises of Russia, bringing together more than 70% of the domestic shipbuilding industry. In total, the members of the USC businesses and organizations employ about 74 thousand people. URL: <http://www.oaosk.ru> (date of access: 11/08/2012).

About another new technology that has the ability to find the application in conjunction with underwater complexes in the Arctic. In the world will appear more constructions projects and the use of the floating plants to ship LNG (liquefied natural gas). Floating LNG «Prelude» the coast of Australia, which Royal Dutch Shell plans to start operation in 2016, is estimated at \$ 12.6 billion. Gazprom's competitors today are actively promoting their new projects in mining and processing of liquefied gas, really ahead of Russia. Currently concern "Shell", for example, has seven existing LNG plants, four new projects are under the construction. In Russia, "Shell" participates in LNG "Sakhalin-2". This is one of the world's largest integrated projects of oil and gas. In 2010, the share of projects with "Shell" had 30% of the global LNG production.¹⁷ Floating plants of the company will be working offshore East and West Africa, Indonesia, New Zealand, Brazil, Venezuela, in the Mediterranean. Construction projects of floating LNG plants at some stage developed ConocoPhillips, Japan's Inpex, Chevron, Norway's Flex LNG, Brazil's Petronas and MISC Berhad (Malaysia), GDF Suez Bonaparte (SP Santos Australian and French GDF Suez). Analysts estimated the company Visongian volume of the demand "floating LNG" in 2010, 492 million. Sector expects rapid growth: according to Douglas-Westwood - to 7.4 billion by 2017, the time of launching the world's first floating LNG company «Shell». Floating plant will be double-hulled (to prevent possible leakage of product) A vessel of 480 meters and a width of 75 meters, and fully equipped with a filling, it will weigh about 600 tons. For comparison, it is six times more than the world's largest carrier. In stores can be up to 220 thousand cubic meters of LNG, 90 thousand cubic meters of liquefied petroleum gas and 126 thousand cubic meters of condensate. Floating plant will be able to withstand hurricane-fifth (highest) category and waves up to 20 meters without interrupting the production process. 150 meters tower is one of the technological elements passing through the ship, will be held in four groups of anchor chains (six pieces each), fixed to the piles with a diameter of 10 m and a length of 20-30 m, and fixed to the sea bottom¹⁸.

¹⁷ Shell. URL: http://www.shell.com.ru/home/content/rus/future_energy/itl_campaign/lng/ (date of access: 31.08.2012).

¹⁸ Anchor operator// «Business Guide (newspaper. Application to the newspaper «Ъ» № 35 (90). 07.07.2011. URL: <http://www.kommersant.ru/doc/1669376> (date of access: 15.11.2012).



Pic 4. Floating plant LNG «Prelude» near the banks of Australia (project).
 URL: <http://revistagalileu.globo.com/Revista/Galileu2/foto/0,,43236812,00.jpg>

Again the question appears. Shell doesn't build such plants ships LNG, and orders them in the South Korea, Samsung shipyard on the island Godgu. In Russia, apparently, is hardly possible to find domestic shipyards that could solve a similar problem in its entirety. Hence, we can calculate everything and booking project overseas campaigns. Moreover, that this experience is already there. At the Baltic Shipyard "OSK" (LLC "Baltic Shipyard - Shipbuilding") in 2012, carried the body laying helicopter landing ship dock (DVKD) of the "Mistral", which are constructed in accordance with the Russian-French agreement. "Rosoboronexport" and the French company DCNS in June 2011 signed a contract to build the first of two helicopters. United Shipbuilding Corporation attracted to the deal as a subcontractor French shipyard STX France in Saint-Nazaire. In the Baltic factory will be built 24 hull blocks (aft part of both ships), which represents about 40% of cases. The blocks will be sent to France where he will complete assembly of both helicopter.¹⁹ May Russia go in the same way through this scheme and in the oil industry of the waters of the Arctic Ocean? Careful consideration, calculate costs, opportunities, threats, and to make a qualitative leap in the development of the Stockman field and in the other Arctic oil fields through the use of the new

¹⁹ On the Baltic ship plant на Балтийском заводе заложен первый «Мистраль». URL: http://www.oaosk.ru/news1705.html#newsname_1705 (date of access: 08.11.2012).

technologies: the underwater complex - Floating LNG - gas for delivery of liquefied natural gas to any port in the world.

Make an investment decision on the Stockman in late August 2012 it was again postponed indefinitely. Who benefits from today's decision to suspend the Stockman project? The answer is obvious - to competitors. Gas demand in the world does not decrease, but increases, new market niches for additional gas supplies due to the closure of nuclear power plants in Japan and Europe. Possible markets for liquefied natural gas can serve Europe and South-East Asia. Thus, Gazprom subsidiary Gazprom Marketing and Trading Singapore and Vietnamese company Petrovietnam Gas July 30, 2012 signed a Memorandum of Understanding on cooperation in the field of liquefied natural gas (LNG)²⁰. However, the Russian Ministry of Economics has reduced the forecast of exports and the price of Russian gas: in 2012 Russia exported 193 billion cubic meters of gas (in 2011 exported 221 billion cubic meters of gas), and in 2015 - 209 billion cubic meters instead of 253 billion. The average price of gas in the CIS in this case must be at 439 dollars and 393 dollars for one thousand cubic meters in 2012, and \$ 390 - in 2015²¹.

Здесь ведь Russian Gazprom, is again delaying a decision about Shtokman, surely it losing its competitive edge, dynamic and those opened niches, that are still available. Here, because it is not only about the Shtokman project, but other projects carried out in cooperation with international partners, to strengthen competition in the global hydrocarbon markets, using innovative technologies, a gradual, slow ousting Russia from the market. Russian Arctic rate in such a situation will increase manifold. If you can not freeze, we must continue to develop Shtokman, assessing the risks and applying the latest technology. There may be temporary loss that may pay off handsomely later, increasing the competitiveness of Gazprom. If you can not continue, then the priority is to develop the field on land preserved technological lag the industry for years to come. The question is how to do it all properly with and cost-effectiveness, and the geopolitical situation, keeping in mind also the ecology of the Arctic area, the positive image of the country.

Literature

1. Kramer Andrew E., Krauss Clifford. Russia Embraces Offshore Arctic Drilling. URL: <http://www.nytimes.com/2011/02/16/business/global/16arctic.html> (Date of access: 02.08.2012).

²⁰ Vietnam agrees with Gazprom about delivering goods LNG. URL: <http://www.oilcapital.ru/export/170324.html> (date of access: 17/08/2012).

²¹ Shelf do not justify the means. The development of the Stockman's field has been postponed. URL: <http://www.kommersant.ru/doc-y/2011009> (date of access: 09/02/2012).

2. Donskoy S.E. The project exploration program of the continental shelf of Russia and the development of mineral resources in the long term, until 2030. URL: [http:// government.ru/docs/19902 /](http://government.ru/docs/19902/); [http:// government. ru/docs/19888 /](http://government.ru/docs/19888/) (Date of access: 02.08.2012).
3. Zelentsova J. Shale gas, the myths and the prospects of the world production. URL: <http://www.pronedra.ru/gas/2011/12/23/slancevyj-gaz> (date of access: 10/09/2012).
4. Laverov N.P., A.N. Dmitriev, Bogoyavlenskiy V.I. The development of marine natural resources in the Arctic / / Strategy of the Russian maritime activities and the environmental economics in the Arctic. IV National Marine Scientific Conference: conference materials. Murmansk, 7-8 June 2012 Murmansk Acad Bauman, 2012. URL: [http://ocean.mstu.edu.ru / docs / materials.pdf](http://ocean.mstu.edu.ru/docs/materials.pdf) (date of access: 19.06.2012).
5. Medvedev D.A. Speech 08/02/2012. URL: <http://government.ru/docs/19902/> (date of access:: 08/02/2012).
6. Vladimir Putin Speech at the Forum 22/09/2011 at Archangel. URL: [http://premier.gov.ru / events / news /](http://premier.gov.ru/events/news/) (date of access: 04.08.2012).
7. Safronov E. Stockman Foreign participants will aim to reduce its cost. URL: <http://www.rbcdaily.ru/2012/05/15/tek/562949983832481> (date of access: 07/16/2012).
8. Tarasyuk V.M. The strategy of the development of the continental shelf of the Russian Federation. URL: http://burneft.ru/docs/archived_docs/articles_tek/2 (date of access: 08/03/2012).

Reviewer – Shubin Sergei Ivanovich,
Doctor of History, Professor.