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THE ROLE AND IMPORTANCE OF THE MINERAL RESOURCES OF THE ARCTIC ZONE OF THE RUSSIAN FEDERATION (AZRF) FOR THE MODERN DEVELOPMENT OF ITS REGIONAL REGIONS

Abstract: In the article the authors consider the Arctic region. It is becoming more and more accessible thanks to the melting ice and its technological advances. Arctic countries and transnational corporations view the exploitation of hydrocarbons and long-term investments in them as an attractive opportunity to significantly replenish their resource reserves. In addition to existing and promising oil and gas resources, deposits of other Arctic mineral resources are extremely significant and important for Russia. The article also presents the characteristics of the Arctic regions such as the area of the Arctic areas, population density, the volume of industrial production in total and per capita, including the volume of mining of metallurgical ores in the Arctic zone by countries such as Greenland, Finland, Sweden, Canada, Norway, USA, Russia.

Key words: mineral wealth, economic development, social development of the Russian Arctic, infrastructure problems, environmental protection, population consolidation, mineral resources.

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Introduction

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Far from the world's civilizations for thousands of years, the Arctic has suddenly attracted global

international attention. Global warming has caused an unprecedented rapid melting of the ice in the Arctic Ocean, threatening established ecosystems and biological diversity.

However, paradoxically, these climatic changes

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simultaneously opened up new opportunities for the extraction of natural resources and the development of transport, which was reflected in the growth of economic and military activity in this region both on the part of the Arctic countries.

North of the Arctic Circle is 6% of the earth's surface, a territory currently owned by eight countries - Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States, where it lives 4 million people, including 40 diverse ethnic groups (Table 1).

The first exploration of the Arctic by Europeans dates back to the 10th century, when people began to look for the shortest trade sea routes to Asia. But only today, large reserves of mineral resources - gold, diamonds, copper, nickel, coal, and especially significant reserves of oil and gas - have been discovered in the region. According to a study by the Geological Services, this region contains 13% of the world's probable oil reserves and 30% of natural gas, half of which belongs to Russia.

Table 1. Characteristics of the Arctic regions

The country	Arctic arearegions, thousand km ²	Population density, per 1 km ²	Mining industry products, USD per km ²	Mining products per capita, USD
Alaska	1717	0.43	1974	4911
Arctic Canada	4365	0.03	776	26205
Arctic Finland	168	3.95	11201	3717
Arctic Norway	112	4.26	2026	5986
Arctic Sweden	151	3.35	20022	2832
Greenland	2166	0.03	0	0
Russian Asia	7491	0.44	1642	1679
Iceland	102	3.24	0	0
European Russia	1329	2.67	795	3103
Spitsbergen	61	0.04	1829	42,235

The explored oil reserves in the region amount to 90 billion barrels, or 6% of the world's reserves. This is equivalent to 52% of Canada's reserves, 110% of Russia's reserves, 340% of US reserves and 1,677% of Norway's reserves. The explored reserves of natural gas in the Arctic amount to 1,669 trillion cubic meters. feet, or 24% of the world's proven reserves, which is

equivalent to 99% of Russia's reserves, 500% of the US reserves, 2354% of Norway's reserves and 2736% of Canada's reserves. More than 80% of hydrocarbon reserves are located on the shelf, no less significant are the reserves and mineral resources of the Arctic, are given in table 2

Table 2. Mineral resources Arctic

The country	Resources
Denmark (Greenland)	Gold, molybdenum, nickel, elements platinum group, rare earth metals (tantalum, niobium)
Canada	Diamonds, gold, plaster, iron ore, lead, uranium, zinc
USA (Alaska)	Zinc (67 million tons), lead (67.6 million tons)
Sweden	Iron ore (2,413 million tonnes)
Norway	Iron ore (1000 million tons)
Russia	Apatite, ceramic raw materials, coal, cobalt, copper, diamonds, gold, gypsum, iron ore, molybdenum, nickel, palladium, platinum, silver, precious stones, rare earth metals, tin, titanium, zinc The total value of the reserves is \$ 1.5-2 trillion.

Main part

While significant doubts remain regarding the possibilities and economic, social, political, logistical and technological feasibility of extracting oil, gas and mineral resources in the Arctic, significant investments in exploration and production in these regions are already being intensively carried out. Thus, in 2014, Gazprom began operating the

Prirazlomnoye field in the Nenets Autonomous Okrug, investing \$ 1.5–2 billion. In August 2018, the Yamal LNG project worth \$ 27 billion and the development of the enterprise were launched.

As the Arctic ice melts, the region's vast natural and mineral resources have become more accessible. The world community is most interested in rare earth

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elements, which play a critical role in the transition to a digital and low-carbon economy.

Currently, 90% of the world's production of these metals is concentrated in China, which warns of their possible depletion in the next twenty years due to excessive production. On the one hand, by extending control over the Arctic reserves, China will be able to maintain its dominant position in the market for these materials. On the other hand, countries currently dependent on Chinese imports are seeking access to alternative sources of supply, especially amid the US-China trade conflict and China's threat to impose restrictions on the export of rare earth metals.

In the last decade, governments, private investors and mining companies have begun to view the Arctic as a promising source of mineral wealth, including deposits of oil and gas, gold, diamonds, platinum, nickel, precious stones and much more. Much of this interest was driven by rising mineral prices and growing demand from China, India and other developing countries. Climate change has also played a role in creating new opportunities for the mining industry. Vast areas have become more accessible over a longer period of time. Northern territories, which were previously uninhabited or where transaction costs were too high, became available for economic development. This trend of "opening" the Arctic is expected to

Natural resource industries act as economic drivers for the development of the Arctic countries and open up new opportunities for the development of their northern regions. For example, Finland and Sweden have seen significant growth in the mining sector over the past decade. The Russian Arctic also possesses quite developed branches of oil and gas production and mining of metallurgical ores.

The mining industry is associated with the development of non-renewable resources. In this regard, an important question arises about the sustainability of the economic development of the Arctic territories, i.e. ensuring long-term positive effects that create value equal to or greater than the level that existed before the start of resource development.

Finland. In the 2000s. the mining industry in Finland has experienced a new boom in its development. The previous era favorable for the country's mining industry ended in the late 1980s. and was led by the state-owned mining company Outokumpu. In 1994 Finland joined the European Economic Area and the Finnish mining industry became open to international players. However, until the early 2000s. the country did not attract the attention of foreign mining companies. They currently dominate the Finnish mining industry.

Geographically, mining is concentrated in the eastern and northern parts of the country, which suffer from a declining population and a lack of economic development opportunities. In 2020, there were 12

mines in the country for the extraction of metal ores, mainly chromium, zinc, nickel, gold and silver. Most of the mining projects, including Kittilä, Pahtavaara and Kevitsa, are located north of the Arctic Circle.

Mining products provide 0.6% of the country's GDP with an annual turnover of 1.5 billion euros and an export volume of 130 million euros. This industry directly employs about 3 thousand people, and together with subcontractors - about 10 thousand. Agnico Eagle Finland Oy mines gold at the Kittilä mine in northern Finland. The underground mine is the largest gold producer in Europe. Mining has been in place since 2008. Boliden AB has been mining nickel ore from the Kevitsa mine, which was discovered in northern Finland in 1987 and is the country's largest metal deposit. Ore mining and beneficiation began in 2012. Nickel, zinc, cobalt and copper are also mined at the Talvivaara mine by open pit mining near Sotkamo in the eastern part of the country. Mining has been carried out by the state-owned Terrafame Oy since 2011. Underground copper and zinc are mined at the Pyhäsalmi mine by First Quantum Minerals Ltd. in central Finland. This is one of the oldest and deepest mines in Europe. Outokumpu Oyj mines chromite at the Kemi underground mine with a capacity of 2.7 million tonnes of ore per year. The mine is part of an integrated ferrochrome and stainless steel chain in the Kemi-Tornio region. Yara International ASA is developing an open-pit apatite mine at Siilinjärvi in the east of the country. The deposit is the largest in terms of reserves in Finland with a volume of 2.35 billion tons of ore with a useful grade of 4.2%. This is one of the oldest and deepest mines in Europe. Outokumpu Oyj mines chromite at the Kemi underground mine with a capacity of 2.7 million tonnes of ore per year. The mine is part of an integrated ferrochrome and stainless steel chain in the Kemi-Tornio region. Yara International ASA is developing an open-pit apatite mine at Siilinjärvi in the east of the country. The deposit is the largest in terms of reserves in Finland with a volume of 2.35 billion tons of ore with a useful grade of 4.2%. This is one of the oldest and deepest mines in Europe. Outokumpu Oyj mines chromite at the Kemi underground mine with a capacity of 2.7 million tonnes of ore per year. The mine is part of an integrated ferrochrome and stainless steel chain in the Kemi-Tornio region. Yara International ASA is developing an open-pit apatite mine at Siilinjärvi in the east of the country. The deposit is the largest in terms of reserves in Finland with a volume of 2.35 billion tons of ore with a useful grade of 4.2%. Yara International ASA is developing an open-pit apatite mine at Siilinjärvi in the east of the country. The deposit is the largest in terms of reserves in Finland with a volume of 2.35 billion tons of ore with a useful grade of 4.2%. Yara International ASA is developing an open-pit apatite mine at Siilinjärvi in the east of the

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Sweden... The mining industry has been an important part of the Swedish economy for several centuries. In 2020, this industry accounted for 1% of GDP and 11% of the country's total exports. It employs directly 10 thousand people, and together with related industries - 35 thousand people.

Sweden is a globally competitive mining cluster with a leading position in the mining equipment industry. The most important mining product is iron ore. In addition, significant amounts of zinc, lead and silver are mined here within the EU.

The largest mines in Sweden are located north of the Arctic Circle, among which Kiruna is the world's largest underground iron ore mine, and Aitik is Sweden's largest copper mine.

Iron ore mining has long been controlled by the state-owned LKAB corporation. However, 20 years ago, Sweden allowed private sector companies to mine. By the end of the 1990s. A number of large international mining companies came to the country, and this trend intensified during the resource boom of the 2000s.

Further development of the mining industry is associated with the provision of the industry with a labor force, transport and energy infrastructure. These problems, primarily transport ones, are being solved by Sweden together with Finland.

One of the world's largest underground iron ore mines in the world, Kiruna is operated by the state-owned mining concern LKAB. The mine is one of the oldest. Mining has been going on here since 1900. Malmberget, the world's second largest iron ore mine, opened in 1745. In addition, there is an open pit iron ore mine at Svappavaara, operating since 1965. Boliden mines polymetallic ores and gold at the deposits in the city of Norrbotten (mining has been carried out here since 1965) and Västerbotten (lead, copper and zinc have been mined, also since 1965).

USA... One of the largest zinc mines, the Red Dog Mine, is located near Kotzebue, Alaska, and is owned by the local Alaska Native Corporation. The ore deposit was discovered in 1968 and has been developed since 1989. The Canadian company Kinross Gold is developing a large Alaskan gold deposit, Fort Knox Mine, located near Fairbanks. The deposit was discovered in 1894, but development began in 1996. Hecla Mining is developing the Greens Creek Mine, located in southeastern Alaska and one of the ten largest silver deposits in the world. Zinc, gold and lead are also mined here. The deposit was discovered in 1975 and has been developed since 1989. Gold is also mined at the Kensington deposit north of Juneau by Coeur Mining Inc. and Pogo Mine in central Alaska by Northern Star Resources Ltd. In addition, the Usibelli Coal Mine near Healy was also discovered and developed in Alaska in 1943.

Greenland. In the 2000s, plans for exploration and production of mineral resources in Greenland have sharply increased. Possessing significant reserves of zinc, lead, iron ore, gold, platinum, uranium, rare earth metals and coal, Greenland began to attract the interest of a number of international mining companies. Greenland sees the development of the mining industry as a tool to achieve greater independence from Denmark. Greenland is trying to turn the mining industry into a major factor in the development of the national economy, while now the main sources of income for the island are fishing and annual grants from the Greenland government. In 2009, Greenland passed the Act on Self-Government, under which it received more rights in self-government, including the development of natural resources.

The current mining activity is concentrated mainly in the exploration sector, although there are a number of projects approaching the operational stage. The number of licenses for the development of natural resources has been steadily increasing since 2002. Investment in geological exploration rose to \$ 1 billion. In May 2017, a deposit of rubies and pink sapphires was discovered in

Canada. Alexco Resource Corp. mines silver at the Elsa mine (Yukon territory). This mine has been operating since the early 1900s. A total of 214 million ounces of silver were recovered with a metal grade of 1,373 grams per tonne. Capstone Mining mines copper ore at the Minto Mine north of Whitehorse in central Yukon. Dominion Diamond Mines has been mining diamonds since 1998 at the Ekati Diamond Mine, located 300 km north of Yellowknife. The current capacity of the mine is 4.5 million carats, or 1,500 kg of diamonds per year. Mining corporation Rio Tinto, together with the Canadian Dominion Diamond Corporation, develops diamonds at the Diavik Diamond Mine located in the Northwest Territories. Mining has been carried out here since 2003, and the annual volumes are 7 million carats (or 1400 kg of diamonds). The mine has become an important part of the regional economy, employing about 1,000 people. De Beers Canada Inc. and Mountain Province Diamonds are jointly developing the Gahcho Kue Mine in the Northeast Territories, 280 km northeast of Yellowknife. Mining here began in 2016 and has an annual production of 2.5 million carats. The Baffinland Iron Mines Corporation develops the Mary River Iron Mine on Baffin Island, Nunavut Territory. The company began shipping iron ore in July 2015 and reached a production level of 21.5 million tonnes per year. and Mountain Province Diamonds are jointly developing the Gahcho Kue Mine in the Northeast Territories, 280 km northeast of Yellowknife. Mining here began in 2016 and has an annual production of 2.5 million carats. The Baffinland Iron Mines Corporation develops the Mary River Iron Mine, located on Baffin Island,

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Russia. The mining industry is the second most important branch of the national economy after the oil and gas industry. It accounts for 4.5% of the country's GDP. The most important mining areas in Russia are located in the Arctic, where 10% of the world's proven reserves of nickel, 19% of the reserves of platinum group metals, 10% of titanium, as well as gold, zinc and cobalt are concentrated.

Russia is the leader among the Arctic countries in terms of mining and mineral resources production (Fig. 2).

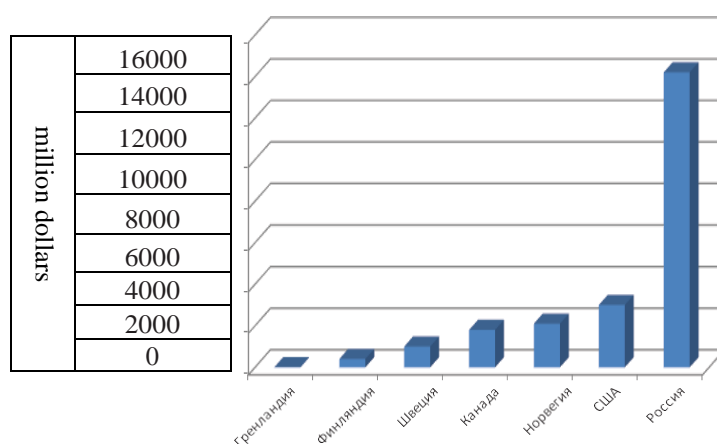


Fig. 2 Production of metal ores in the Arctic Zone by country

The most significant Arctic fields are located in the Sakha-Yakutia regions, the Kola Peninsula, the Norilsk region and Eastern Siberia. Near

Mineral Resource Development Problems

Since the Arctic is becoming an object of intensive development of its natural resources, a number of important economic and socio-cultural problems of such development arise. The Arctic Economic Council (an independent organization under the Arctic Council) has identified five such problems in its study.

Human capital. Successful implementation of mining projects requires a combination of local and non-local (country-wide) expertise and workforce-concentrated competencies. The Arctic is known to be a vast region with huge distances between settlements. In most cases, resource development projects are located far from locations where adequate labor is available. Therefore, projects for the development of Arctic resources rely on hired workforce, working on a rotational basis. This increases transaction costs (transport and accommodation) and leads to the transfer of economic effects (through employment, taxes, etc.) outside the Arctic.

Formation of infrastructure. The lack of a developed transport infrastructure (roads, ports, railways), communication and energy infrastructure is a significant problem in the development of mineral resources in the Arctic. This increased costs and blocked the development of many known mineral

deposits for a long time. In many cases, mining companies are forced to create infrastructure on their own, including energy, since there are no electricity and gas networks in the region.

At the end of a mine's life cycle, these structures are usually dismantled as part of land reclamation requirements, leaving behind an acute infrastructure deficit for the development of neighboring regions. Therefore, the responsible development of the natural resources of the Arctic requires joint (including financial) efforts of the central government, mining companies and local authorities to develop joint infrastructure that can meet the needs of local residents, contribute to the future economic development of the region and protect the environment.

A good example of shared infrastructure is the operation of the largest underground gold mine near Juneau (lat shr) (Alaska, USA), which operated from the late 1800s to the 1940s. An extensive hydropower system was created to supply the mine with electricity. After the mine was closed, the hydraulic structures created continued to provide the city with cheap electricity, the cost of which is currently the lowest in Alaska.

Regulatory environment. Responsible development of the natural resources of the Arctic requires the protection of the region's environment and the involvement of the local population in the decision-making process, primarily on the issues of

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what is acceptable and what is unacceptable in the process of developing Arctic deposits. At the same time, protective measures must be linked to the desire of Arctic residents for economic development. Balancing the protective measures of the Arctic environment and sustainable economic development of the Arctic regions requires solving the following issues: increasing the predictability and timeliness of environmental and socio-economic forecasts; elimination of duplication in the economic evaluation of projects; strengthening environmental protection; expanding consultations with indigenous people of the Arctic regions.

Availability and adequacy of information. Effective socio-economic and environmental assessment of mining projects is based on accurate, well-documented information that is available to all stakeholders. This makes it possible to better foresee possible changes and consequences during the implementation of projects, as well as to contribute to a deeper understanding of the cumulative effects of ongoing projects and their impact on the existing socio-economic and environmental situation in the Arctic regions.

Economic expediency. Mining resources in the Arctic is a capital-intensive, high-cost business. The remoteness of the fields, the lack of the necessary infrastructure and energy sources, as well as the lack of qualified labor force increase construction and operating costs. For example, in the northern regions of Canada, the operating costs of extracting mineral resources are 30% higher than in the southern regions of the country, where there are no such infrastructural constraints.

An important factor at the stage of prospecting for minerals is the availability of risk capital. Usually public investment is used for this; however, there has recently been a clear trend towards attracting private equity capital. Additional funding is contingent on the success of prospecting exploration.

Potential sources of capital can be:

local local companies seeking to create additional opportunities for the development of their regions. For example, in Alaska, there are 12 regional companies that have been given rights to land and natural resources. These companies are not listed on the stock exchange, and shares can only be inherited. Thus, NANA Corporation and Doyon Limited are actively promoting their resource interests, and also finance early stages of exploration at their own

expense or invest in companies operating on their territory.

All companies use their own internal methodology for calculating the rate of return on a project. Typically, this indicator for Arctic projects is noticeably higher compared to developed regions due to transport and infrastructure costs. In this regard, the developed deposits should be distinguished by a higher metal content and large ore reserves.

Simultaneously with the melting of the Arctic ice and the emergence of open water, new opportunities for navigation have arisen between Asia, Europe and North America, both through the Northwest Passage, which is shorter than the Panama Route, and especially through the Northeast Passage, which is shorter than the Suez Route by several days, which reduces energy and transport costs.

Although it is estimated that year-round navigation without icebreakers on the Northeast Passage (across the Arctic Ocean) will be possible by 2040 or 2050, there are still some unresolved issues. First, significant investment is needed in port facilities along the entire Russian coast. Secondly, residual ice and numerous shallows slow down the speed of the ships, thus reducing the time advantage. Third, the use of ice-resistant, more expensive vessels required for this route reduces the financial benefits. Fourth, the high risk of accidents compared to traditional routes due to weather conditions and the lack of sufficient search and rescue services requires additional training and insurance costs.

As a result, the average number of ships using the Northeast Passage for cargo transit is about 20, while the Suez Route is used by 17,000 ships annually. Nevertheless, the volume of cargo transported along the Northeast Passage is growing rapidly. Shorter transport routes are not the only Arctic advantage that investors are eyeing. Melting Arctic ice creates new opportunities for shorter routes for communications cables, such as the Arctic data cable, which can link Europe and Asia, thus speeding up the transfer of digital information from one continent to another. The proposed project will contribute to the socio-economic development of the region, as well as telecommunications providers and financial markets interested in fast communication services.

In 2018, it reached 18 million tons, and by 2024 it may increase to 80 million tons (Fig. 3).

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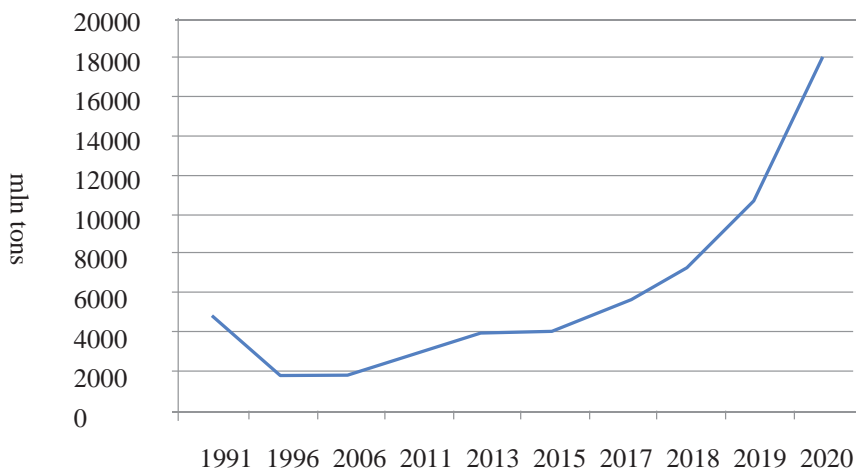


Fig 3. Volume of transport cargoes transported along the northeastern aisle,

Most of the cargo is exported hydrocarbons (oil and liquefied gas) from the Arctic coast of Russia.

The Arctic has long served as a key strategic region connecting the world's superpowers from North America to Europe and from the Soviet Union to China. It played a critical role during World War II as a transport artery for the supply of goods and weapons, and during the Cold War served as the shortest route for American and Soviet strategic bombers and missiles, as well as nuclear submarines. Currently, the Arctic region connects Russian oil and gas fields with China, Chinese exports with the single European market and the Russian Northern Fleet with warm southern seas. Until now, the Arctic has remained a peaceful haven mainly due to the international agreement of the 1980s-1990s, including the formation of the Arctic Council, uniting eight Arctic countries, a number of non-Arctic states,

Despite this, the growing number of actors and interests in the region can subject the existing system of relations to serious tests. Within the Arctic Council, there is a growing division, on the one hand, between supporters of the priority maintenance of environmental stability and multilateral solutions, and, on the other hand, among those who put the problems of economic development and national sovereignty in the first place. While the first group is more numerous and includes the European Arctic countries and Canada, the second is represented by two global heavyweights - the United States and Russia. Moreover, even among those countries that are concerned with environmental protection and moderate exploitation of natural resources, not all follow these goals with the same diligence. In addition to the Arctic Council, a growing number of non-Arctic states, especially China,

In January 2018, China released the White Paper of the Arctic Policy, where it called itself a “near-

Arctic state” with ambitions to become a Polar Power. It argues that the Arctic is a subject of global interest, which is not limited to the interests of the Arctic countries alone, and recognizing the sovereignty and rights of the Arctic states, China calls for the need for international cooperation to achieve mutually beneficial results.

Due to its heavy dependence on energy imports and fear of overdependence on the Straits of Malacca, as well as waterways dominated by the American fleet, China attaches strategic importance to the Northeast Passage. Therefore, he is trying to create a Polar Silk Road as part of his Belt and Road Initiative. (BRI).

The Chinese company COSCO has already expressed interest in starting summer navigation along this route. In addition, Chinese investors have offered to finance the Rovaniemi (Finland) - Kirkenes (Norway) railway, as well as the Helsinki-Tallinn railway tunnel, which will connect the European Arctic with the European Single Market. The completion of this road will link the Arctic Ocean to the Mediterranean Sea, completing the Chinese BRI initiative. In 2018, China built its first icebreaker and opened tenders for the first nuclear-powered icebreaker, which require foreign companies to transfer relevant technology. China's interests are not limited to the Northeast Passage.

The country is actively investing in the extraction of minerals in Greenland, including rare earth metals.

As the Greenland ice sheet continues to shrink due to climate change, more and more coastal areas of the territory are opening up for potential mining projects. Greenland is seen as a new source of base and precious metals, as well as precious stones, uranium ores and rare earths. With the growing demand for these resources in China, Chinese

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companies are expanding their presence in the region.

The largest Chinese joint mining project in Greenland is the Kvanefjeld Project in the southern part of the island, where it is planned to open a mine for the extraction of uranium and rare earth elements (neodymium, dysprosium and yttrium), a partnership of the Australian company Greenland Minerals and China's Shenghe Resources, specializing in the extraction of rare earth metals. ... In 2016, both parties agreed to transfer a 12.5% stake in the future project to a Chinese company. In August 2018, Greenland Minerals signed a memorandum giving a Chinese company a leadership role in the processing and marketing of materials recovered from a mining project.

In January 2019, steps were taken to further implement the project: Shenghe Resources is going to establish a partnership with another Chinese company, China National Nuclear Corporation, in the separation of rare earth elements from uranium and thorium resources. The partnership involves the creation of a separate subsidiary, China Nuclear Hua Sheng Mining, which will have the right to ship uranium and thorium to China for further processing. Uranium mining became possible in Greenland after the island's parliament lifted a long-term "zero tolerance" policy towards uranium mining in 2013.

In addition to the above project, Chinese and Australian companies have entered into a partnership agreement for the development of zinc ores in the Citronen Fjord project in the far north of Greenland, and a Hong Kong company acquired the rights to develop an iron ore deposit in Isua. In the fuel segment, two Chinese companies, China National Petroleum Corp. (CNPC) and China National Offshore Oil Corp. (CNOOC) expressed interest in bidding for the development of two blocks of offshore fields in western Greenland in 2021. In terms of hydrocarbons, China is actively funding production projects in the Russian Arctic, such as Yamal LNG (liquefied natural gas production).

At the same time, China stresses the importance of environmental protection: in 2017, it published the so-called.

Green Belt and Road, which argues that China is committed to protecting the health of seas and oceans, marine ecosystems and biodiversity, and strengthening international cooperation against climate change.

At present, China is successfully positioning itself as an active initiator of the development of the Arctic. Having received observer status in the Arctic Council in 2013, he was forced to recognize the existing international norms applicable to the region. In return, China expects to receive the rights in the field of freedom of navigation recognized by the Arctic countries.

Russia and China continue to build up their cooperation in the Arctic within the framework of the

EurAsEC and the One Belt - One way". In 2017, a joint statement specifically noted cooperation in the Arctic in the areas of transport, scientific research, energy resources, tourism and environmental protection.

Western sanctions also forced Russia to turn to the East, especially China, for financial support and investment in the development of the Northeast Passage and hydrocarbon production. For example, when Western companies refused to finance the Yamal-CIS liquefied gas project, they were replaced by the China National Oil Company and the China Development Bank. China quickly agreed to assist in this project as it sees the underdeveloped infrastructure in the Russian Arctic region as an attractive economic opportunity for its business. Despite this, Russia remains quite cautious in its interaction with China, since it wants to maintain control over the Northern Sea Route and is wary of China's desire to develop its own icebreaker fleet.

In Europe, several non-Arctic EU member states have long shown a deep, mainly research, interest in the Arctic, making a significant contribution to international polar research and gaining observer status in the Arctic Council. Among these countries is Poland, which has a research status in Svalbard since 1985. The Netherlands also conducts scientific research at its polar station in Svalbard, with an emphasis on climate change and the environmental protection of the Arctic.

The research activity of other EU countries, such as Spain, Italy and especially the United Kingdom - is the most closely related located in the Arctic region, and which ranks fourth among non-Arctic countries in the number of scientific publications devoted to the Arctic. Along with the UK, Germany, France and Spain also recognize the region's economic opportunities and environmental challenges, as well as its potential for geopolitical competition. Accordingly, Paris and Berlin advocate broader international cooperation and the implementation of the highest environmental standards in the development of natural resources. As for Switzerland, this country, which received observer status in the Arctic Council in 2017, also has the main interest in the area of climate research.

In addition to European countries, Japan and India are two observer countries of the Arctic Council. Although Japan believes that under current conditions most of its ships will use the Suez Canal, it is preparing for a possible increase in the importance of the Northeast Passage. In this regard, this country is investing in Arctic liquefied natural gas projects. In particular, Mitsui & Co. and Mitsubishi Corporation acquired 10% of shares in the Yamal-CIS2 project".

South Korea expresses dissatisfaction with the Russian practice of charging fees for the passage of the Arctic Ocean route, while Singapore, as a small island state, expresses concern about the possible rise

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in sea level, and the Northeast Route may pose a threat to its status as a global maritime transport hub. Nevertheless, both Japan and Singapore work closely with other Arctic countries, especially the United States.

Finally, India, although its broader geopolitical interests remain unclear, is wary of competition from China and is also involved in Arctic affairs through a twenty-year LNG deal with Gazprom. In addition, India participates in scientific research in Svalbard.

It is clearly clear that all these countries are striving for the Arctic Council to cooperate more closely with non-Arctic countries and more fully take into account their interests. The benefits to the Arctic countries arising from existing international norms are viewed by countries such as India as too disproportionate and at the expense of countries without access to the Arctic coast. Accordingly, India and other countries prefer the Arctic to be governed collectively at the international level and not become an area of geopolitical competition.

Conclusion

In recent years, many countries have adopted strategies on the development of the mining industry in the Arctic (Table 3).

In them, Finland and Sweden focused on the development of transport infrastructure in the Arctic (roads and railways), while Greenland - on a model of public-private partnership in the development of natural and mineral resources. Finland and Sweden view the role of technological innovation and research, as well as life cycle issues, as critical in improving environmental policy. In these two countries, mining strategies are clearly regional in nature. In Greenland, the mining industry is seen as a tool for socio-economic development and local employment growth, as well as professional development and education. Besides,

Sweden actively advocates an active regulatory system with an emphasis on maintaining a sustainable ecological balance and relevant international norms and UN conventions. Finland also prioritizes sustainable development in the region and at the same time emphasizes the importance of good neighborly relations with other Arctic countries, especially Russia. Denmark similarly emphasizes the need for peace and security, sustainable development, environmental protection, biodiversity and international cooperation.

Canada, Norway and Iceland adhere to the same positions. However, at the same time Oslo and Reykjavik emphasize the need to take advantage of the economic advantages of their minerals (energy, mineral, fish and others), as well as potential new shipping opportunities. Norway and Sweden are rapidly developing their national and international infrastructure network in the High North, including airports, roads, railways and harbors. Canada is

committed to upholding its sovereign rights and restraining any claims to them. All five countries emphasize the rights of indigenous peoples and the maintenance of social harmony in the Arctic territories.

Russia's Arctic strategy is focused on expanding its resource base to meet energy needs and socio-economic development. The country is intensively developing its activity in the region in the field of natural resources, transport and defense, and its goal is to bring the share of Arctic oil to 20-30% of total production by 2050. According to experts, about two-thirds of Russia's gas and oil reserves are located in Russian Arctic Exclusive Economic Zone.

However, the development of these resources is associated with overcoming a number of problems. Unilateral exploration and extraction of mineral resources in the Arctic is an expensive and complex undertaking due to technological and logistical constraints and therefore requires increased international cooperation.

Thus, the Russian state-owned companies Rosneft and Gazprom tried to establish interaction with American and European companies (for example, BP and Rosneft completed the creation of the Ermak-Neftegaz JV in 2016 for the development of the Yenisei-Khatanga basin). However, the sanctions imposed on Russia have complicated cooperation with Western companies. For example, ExxonMobil was unable to obtain permission from the US Treasury Department to conduct drilling operations in the Russian Arctic with Rosneft. More broadly, these sanctions make it difficult for Russian companies to access the technology and capital needed to fully exploit Arctic resources.

In addition to resource activity, Russia views the Northeast Passage as an instrument of national and regional development as an international sea route under Russian jurisdiction. But this requires large logistics investments in the development of infrastructure, ports, communication lines, search and rescue services, effective coastal control systems. In this regard, foreign ships are charged for providing weather and ice reports, Russian pilots and icebreaking services, and are prohibited from transporting oil and gas produced in the Russian Arctic as Russia is building up its nuclear icebreaker fleet. To ensure national interests, restrictions have been introduced for the passage of foreign military ships along the Northeast Passage, and military bases are being built. As a result of these events, some Western commentators announced a "new Cold War" and Russia's attempts to "conquer" the Arctic. However, even foreign experts consider these fears to be greatly exaggerated. First, Russian military development must be viewed in the context of the general rearmament of the army, which is defensive, not offensive, and aimed at protecting national borders and national interests in the Arctic. Secondly, since

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most of the Russian Arctic oil and gas is located within the uncontested exclusive economic zone, and the existing international legislation encourages the activities of countries in such regions, it is in the Russian interests to maintain the existing international order, especially the UN Convention on the Law of the Sea.

Thus, the Russian strategy in the Arctic is multifactorial, containing elements of geopolitical competition and practical cooperation.

The previous US administration under President Barack Obama viewed the Arctic mainly as an

illustration of the need to fight global warming more aggressively. In this regard, new structures have been established, such as the Special Representative for the Arctic, to protect the American Arctic and its ecology from potential negative impacts. The Trump administration has begun a gradual dismantling of previous Arctic administrative structures, focusing on the region's economic development and ignoring climate change. The new administration opened up the interior and offshore regions of the American Arctic for the development of oil and gas drilling.

Table 3. Strategies for the development of the Arctic mining industry

Name	Finland	Sweden	Greenland	Russia
Share of the mountain industry in GDP (%)	0.6	1.0	0	4.5
Strategy mining	Adopted 2010 Revised 2013	Adopted in 2013g.	National Petroleum and Mineral Strategy 2014	Strategy for the development of the mineral resource base of the Russian Federation until 2035
The main objectives of the mining strategy	Economic growth, regional development, attracting foreign investment, mountain clusters, environmental innovations, public recognition	Economic growth, national companies and investors, mountain clusters, environmental innovation, public recognition	Economic growth, localemployment and education, national sovereignty, social recognition	Economic growth, support for the national economics, national control over resources, coordination of common goals, improvement of legislation
Perceptions of the mining industry	Lapland is good confession; in	Overall high recognition; some emerging conflicts	An important part of political life; criticism of public policies and the role of local governments	Overall a positive outlook; some conflicts with the indigenous population, civic engagement is poorly developed
Environmental regulation	Talvivaara attitude is negative; improvement policy	Standards at high level	Recent revision legislation	Recent revision of legislation; some implementation problems

The issuance of licenses for operations on the shelf of the Chukchi Sea and on the coast of the Beaufort Sea was allowed, where the largest undisturbed mainland oil fields in North America are assumed. In 2017, the Governor of Alaska signed a \$ 43 billion joint agreement with China. on the production and supply of liquefied gas to China.

This will be the decision of newly elected President Joseph Robineette Biden Jr. Despite the great desire for economic development in the Arctic, its infrastructure in the United States is very limited. The nearest deep-water port, Dutch Harbor, is located in the southern part of the Barents Sea, more than 800

km from the Bering Strait. The lack of its own icebreaker fleet is one of the obvious problems of the US lagging behind, although the US Coast Guard recently ordered the construction of one icebreaker, which will be built in 2024. Since sea transit through the Bering Strait has more than doubled over the past decade, there is an urgent need to expand communication facilities in this zone. Thus, the Arctic is increasingly becoming a priority for the United States, especially in light of the growing rapprochement between Russia and China. The recent US Department of Defense Arctic Strategy emphasizes that regional security is becoming more

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complex and is entering a period of strategic competition. In his speech in May 2019

Mountain industry is an important and at the same time controversial branch of the Arctic. It ensures the local and regional development of the Arctic territories and at the same time has a long-term impact on the environment. The balance of benefits and costs in a region depends on the scale of extractive activities, market conditions and the quality of

management and planning. The interests of the Arctic and other interested countries are often different, which affects the nature of the Arctic policy. A common feature of such a policy is the emphasis on the use of mineral wealth for economic growth, taking into account the sustainable development of the Arctic territories and the social acceptability of the mining industry.

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