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## Challenges of making the project of mineral resource center in the Kola support zone of the Russian Arctic\*

© **Ludmila V. IVANOVA**, Cand. Sci. (Econ.), senior researcher

E-mail: [Ivanova@iep.kolasc.net.ru](mailto:Ivanova@iep.kolasc.net.ru)

Luzin Institute for Economic Studies — subdivision of the Federal Research Centre “Kola Science Centre of RAS”, Apatity, Russia

© **Vladimir N. PEREIN**, Director general

E-mail: [pereinvn@mgre.ru](mailto:pereinvn@mgre.ru)

Murmansk geological prospecting expedition, Apatity, Russia

© **Galina N. KHARITONOVA**, Cand. Sci. (Econ.), leading researcher

E-mail: [kharitonova@iep.kolasc.net.ru](mailto:kharitonova@iep.kolasc.net.ru)

Luzin Institute for Economic Studies — subdivision of the Federal Research Centre “Kola Science Centre of RAS”, Apatity, Russia

**Abstract.** The article analyzes the managerial innovation of the Russian government on a new type of territorial management of the Arctic macroregion - support zones of development. The authors present an overview of the mineral deposits developed and planned for development within the boundaries of the Kola Peninsula and investment projects of the largest mining companies of the Murmansk region and, above all, the project “Kola Chemical and Technological Cluster” in accordance with the requirements developed by the federal regulator for forming mineral resource centers in support zones of development in the Arctic. Particular attention is paid to the deposits of strategic and scarce minerals attractive for private investors. They will not require significant expenditures from regional authorities and local self-governments for development activities or any other methods of the state support and are socially significant for the region. The authors also discuss methodical approaches to management decisions when selecting the most efficient projects for implementing, the goals of socio-economic development and ensuring the ecological safety in the Arctic region under the global climate changes. Basing on the draft federal law “On the Arctic zone of the Russian Federation”, it was concluded that the mineral resource center of the Murmansk region was not likely to be included in the pilot project in 2018-2020 to form the Kola support zone of development in the Arctic. Proposals on harmonizing the requirements for registering applications of the Russian Arctic regions for forming the mineral resource center of the Kola support zone with the order on inclusion of mineral reserves in the state balance list. The authors justified methodology for developing investment projects and the procedures for their state comprehensive and environmental assessments. Some proposals for enhancing the efficiency of activities of applicants and participants in the support zone are made.

**Keywords:** *the Kola support zone of development, mineral resource center, pilot project.*

### Introduction

The government did not abandon the strategic intent on the social and economic development of the Arctic zone of the Russian Federation. Today it remains a priority national project, despite the unfavorable geopolitical situation, the high uncertainty of the world economy and internal economic and environmental risks. The most significant economic risks are: 1) the need to allocate all state and private resources, incl. financial, for the implementation of the Arctic projects. Many

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international financial institutions refuse to provide Russian business with loans and state reserve funds are reducing;<sup>1</sup> 2) a possible decrease in profitability for investors caused by a legislatively defined transition to the best available technologies in 2019; 3) the new US sanctions of April 6, 2018 prohibited the import of products of resource companies, the freezing of their assets and the ban on any operations with authorized persons in the US and in some other countries.

In recent years, environmental risks have been grown due to the refusal of foreign producers of environmentally friendly technologies and equipment to sell them to Russian companies. The situation is more complicated due to the fast implementation of large-scale investment projects in the Arctic and the Arctic Ocean under the conditions of the state environmental supervision and control system creation.

The priority of the national project on the social and economic development of the Arctic zone of the Russian Federation (AZRF) is actively supported by political acts: numerous statements by senior officials of the country and the Arctic regions, high-ranking officials, resolutions of forums, congresses and conferences. E.g., the decision to form the main development zones was first announced in March 2016 in Murmansk at the meeting of the State Commission for the Development of the Arctic. The Arctic issues are also widely covered by media, incl. specially created websites. In December 2017, on the VII International Forum “The Arctic: the Present and the Future”, the governor of the Murmansk region Marina Kovtun sharply criticized the bill of the federal law “On the development of the Arctic zone of the Russian Federation”, issued in accordance with the Law “On Support Zones of the Arctic”<sup>2</sup>.

According to specialists, the legal regulation of the Russian Arctic development is formed too slowly, that is, it is behind the needs of management. The new (the third) “State Program on the Social and economic development of the Russian Arctic” was again approved before the federal law “On the Arctic Zone” was adopted. It was in the new draft of this law that its initiators elaborated in detail the concept of “supporting development zone in the Arctic”, the organizational and economic mechanisms for its formation, including the requirements for project proposal and application for inclusion in the list of pilot projects for their creation<sup>3</sup>.

In our opinion, the fact that the new draft law does not reflect the priorities of the Arctic development declared in the “Strategy for the Development of the Arctic Zone of the Russian Fed-

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<sup>1</sup> K nachalu 2018 goda fond nacional'nogo blagosostoyaniya sokratitsya do 3,7 trln rublej. [By early 2018, the national welfare fund will be reduced to 3.7 trillion rubles]. URL: <https://www.vedomosti.ru/finance/news/2017/12/07/744497-k-nachalu-2018-goda-fond-natsionalnogo-blagosostoyaniya-sokratitsya-do-37-trln-rub> (Accessed: 24 August 2018). [In Russian]

<sup>2</sup> Segodnya otkryvaetsya VII Mezhdunarodnyj forum “Arktika: nastoyashchee i budushchee”. [Today the VII International Forum “The Arctic: Present and Future” is opening]. URL: <http://www.b-port.com/news/item/208682.html> (Accessed: 24 August 2018). [In Russian]

<sup>3</sup> Proekt federal'nogo zakona “O razviti Arkticheskoy zony RF”. [The draft federal law “On the development of the Arctic zone of the Russian Federation”]. URL: <http://docs.cntd.ru/document/555622319> (Accessed: 24 August 2018). [In Russian]

eration and Ensuring National Security for the period up to 2020” is a palliative decision of the government due to the lack of strategic documents of the national level<sup>4</sup>.

Adoption of the federal law on the Arctic macroregion before the approval of the Spatial Development Strategy of the Russian Federation caused a difficult situation. The Spatial Development Strategy is the foundation for the social and economic development programs of all regions of the country, incl. its four macroregions, as well as sectoral strategies. Approval of the federal law on the Arctic macroregion before the Strategy means a need for several dozens of by-laws and harmonization with many applicable federal laws. A quicker and easier way would be to make changes to federal laws on the priority issues of the “Strategy for the Development of the Arctic Zone of the Russian Federation”. E.g., ensuring environmental safety issue in the laws on environmental protection, on environmental impact assessment, on production and consumption waste, on specially protected natural territories, etc., in order to legally establish qualitative and quantitative guidelines for the special regime of environmental management in the Arctic. It should be noted that in the previous versions of the draft law “On the Arctic zone” all the provisions on the special regime of environmental management in the Arctic were excluded.

The leaders of the Arctic territories of the Federation reasonably associate the prospects of their regions with the use of natural resources. Resources have always been the main reason for the territorial expansion to the north since the Novgorod feudal republic. Scientific and technical progress has somewhat changed only the composition of natural resources – the reason why for more than a thousand years (with short intervals) this arduous and costly extraction has been carried out.

Throughout the modern Russia history, most of the strategic intentions of the authorities in the polar regions were limited by development of mineral deposits and this was reflected in strategic documents. The mineral development projects have been rarely implemented for the past 26 years. Therefore, many of them have been just transferred from one social and economic development program of a region or federal district to another one.

The developers of the two previous state programs for the social and economic development of the Russian Arctic chose a beaten track and collected suggestions and drafts from the Arctic regions. Almost 50% of the total number of suggestions and drafts came from mining and processing industry and 7% were geological exploration and offshore projects. Consequently, almost two thirds of all projects were directly related to the development of the mineral resources in the Russian Arctic<sup>5</sup>.

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<sup>4</sup> “Strategiya razvitiya Arkticheskoy zony Rossijskoj Federacii i obespecheniya nacional'noj bezopasnosti na period do 2020 goda”. [“Strategy for the development of the Arctic zone of the Russian Federation and ensuring national security for the period up to 2020”]. URL: <http://government.ru/info/18360/> (Accessed: 24 August 2018). [In Russian]

<sup>5</sup> Postanovlenie Pravitel'stva RF ot 31 avgusta 2017 № 1064. Gosudarstvennaya programma Rossijskoj Federacii “Social'no-ehkonomicheskoe razvitie Arkticheskoy zony Rossijskoj Federacii” [Government Decree of August 31, 2017 No. 1064. State program of the Russian Federation “Social and economic development of the Arctic zone of the Russian Federation”]. URL: <http://government.ru/programs/236/events/> (Accessed: 24 August 2018). [In Russian]

Today, when the progressive project management theory has been borrowed from abroad and finally became available. Its best practices are increasingly used in our country. It is no longer necessary to prove that the mineral development projects for the Arctic (mentioned above) did not meet the relevant requirements (feasibility study of fields, investment projects, etc.)<sup>6,7</sup>.

Usually, the feasibility evidence and the expected benefits of a particular field was reduced to a listing of its technical and economic feasibility study (TES). Most often, it was done earlier, in conditions of a planned economy or it was a feasibility study developed by mining and scientific organizations for the mining companies. It can be argued that in both cases the implementation of the submitted projects could not be done, ignoring other reasons, due to their unsatisfactory quality. E.g., in 1970s-1980s, the feasibility study of all mineral deposits of the Murmansk region included technologies known and used that time but many of them are obsolete now. The feasibility study with more advanced mining or processing technologies, incl. the integrated use of multi-component ores, usually required a proper marketing strategy (distribution channels, demand volumes in different markets, logistics costs). Also, capital investments and current expenditures on environmental activities were underestimated to improve the performance indicators of an investment project.

In addition, the regional authorities of the Federation did not participate in all projects. Now they are participating through the project's offices under the government in each region.

The aim of our study was to analyze the feasibility and validity of the federal requirements for the establishment of a mineral resource center under the Kola support zone and the work for its optimization. Regional authorities are responsible for the applications. So, the objectives of the study also are to work out recommendations to improve the efficiency of their activities.

### ***Realistic definition of the mineral resource center prototype within the Kola support zone of the AZRF***

In accordance with the new "State Program for Social and Economic Development of the Arctic zone of the Russian Federation", the establishment of a support zones should be carried out in two stages: 1) pilot projects in 2018–2020 and 2) establishment and maintenance of support zones in 2019–2025.

Unlike previous programs, the new program has funding: 12 billion rubles for pilot projects, and it is planned to increase funding from the state budget by more than 6 times per year for the establishment and operation of support zones. The government also expects to attract even more funds from non-budgetary sources (public-private partnership).

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<sup>6</sup> Iz chinovnikov sobrali sovet po proektnoj deyatel'nosti. 19 iyunya 2017 g. [Officials established the Council on Project Activities. June 19, 2017]. URL: <http://www.b-port.com/news/item/202379> (Accessed: 24 August 2018). [In Russian]

<sup>7</sup> Rukovodstvo k svodu znaniy po upravleniyu proektami (rukovodstvo RMBOK). 5-e izd. 2013. Korporativnaya sistema upravleniya proektami (KSUP). [A guide to the body of knowledge on project management (the RQMC manual). 5th ed. 2013. Corporate project management system (CPMS).URL: <http://mahamba.com/ru/korporativnaya-sistema-upravleniya-proektami-ksup> (Accessed: 24 August 2018). [In Russian]

As we know, the Federal government has identified 8 main support zones in the Arctic: Kola, Arkhangelsk, Nenets, Vorkuta, Yamalo-Nenets, Taimyr-Turukhanskaya, North Yakutsk and Chukotka. Pilot projects involve three of them: Kola, Arkhangelsk and the North Yakutsk. The chosen areas are intended to become a kind of an “economic development belt” along the Arctic Ocean coast, a network of continental bases to ensure the functioning of navigation along the Northern Sea Route.

A set of pilot projects has not yet been completed. The Federal regulator and the regional authorities explain it by the lack of the necessary calculations to determine national, regional and sectoral optimality of the proposed projects, or unsatisfactory performance of proposed projects from the federal perspective that leads to a number of checks by the federal authorities.

After the Federal bill with a detailed description of the requirements for the projects to be a part of the support zone, the regional authorities began to speak about their excessive rigidity and overstatement. Analysis of the projects accepted as pilot ones leads to the conclusion that first of all, it is planned to focus on infrastructure (railways, seaports, coal and oil terminals, coastal support for offshore projects, incl. ship repair). Most of these projects are in government sectoral programs. On 1 January 2018, the Federal targeted programs integrated into the pilot state programs were terminated ahead of schedule.

Only in Arkhangelsk, it is planned to start the development of the Pavlovsk lead-zinc deposit on the Novaya Zemlya archipelago and construct a mining and processing plant. In Kola, no mineral development and processing projects are planned.

In the new version of the draft federal law “On the development of the Arctic zone of the Russian Federation”, the regional authorities got the right to exercise the authority of the Federal law “On subsoil” and “participate in the development and implementation of state programs on geological study of the subsoil and development of the mineral resources of the Russian Federation”, i.e. on the territories with the federal ownership. In other words, the Supreme Executive body of the subject of the Federation will be the “applicant” for the projects aimed at formation of mineral complexes for their inclusion in the support zone.

The largest industrial projects, proposed by the authorities of the Arctic subjects are new mineral resource development projects and new related industrial production or the development of existing mining and metallurgical enterprises, important of the economy of the polar territories. As it has been already mentioned, all attempts to include the mining and related industrial projects in the Kola support zone were rejected by the Federal regulator. But the government of the Murmansk region has a landmark which corresponds to the idea of the Federal regulator about the mineral resource center as part of the support zone of the Arctic development.

According to the definition contained in the draft Federal law, “mineral resource center (MRC) is a set of deposits, both developed and planned for development, and promising areas associated with existing and planned infrastructure and with a single point of shipment for extracted

raw materials or products to the federal or regional transport system (railway, pipeline and sea transport) for delivery to consumers”.

The definition suggests three mandatory MRC features:

- national economic purpose (efficiency), i.e. extracted raw materials or products are intended for shipment outside the support zone;
- overall existing and planned infrastructure (transport and energy);
- existing and planned infrastructure should meet the needs of developed deposits and deposits planned for development.

In 2018, the Murmansk authorities resumed attempts to confirm the priority of the project “Kola chemical and technology cluster (KCTC)”, which was included in the two previous state programs of social and economic development of the Arctic zone of the Russian Federation but excluded from the third one. Such a “return back” happened due to several reasons. First of all, the Kola Scientific Center of the Russian Academy of Sciences is transforming to a new territorial structure – the Federal Research Center (FIC CSC RAS). Its institutes have been the initiators and the developers of the project “Kola chemical and technology cluster” since 2012. The appearance of the FIC CSC RAS will combine all the resources necessary for justification of technologies and new products. E.g., a sorbent for decontamination of liquid radioactive waste (LRW), which is obtained from local raw materials, is now produced in a small, 7.5-liter autoclave at the installation of the Institute of Chemistry and Technology of Rare Earth Metals and Mineral Raw Materials (IHTR-EMC FIC KSC RAS ). This year, the FIC KSC RAS has planned to complete a pilot synthesis plant for obtaining innovative titanium sorbents and to continue the series of their tests at industrial facilities for the disposal of LRW and other wastes. Also, this year, the FIC KSC RAS scientists are planning to complete the development of industrial technology for the production of titanium and titan silicate sorbents from titanite concentrate of the JSC “Apatit” and its processing at the Monchegorsk site of PJSC “Norilsk Nickel” and to prepare a sufficient number of sorbents for large-scale testing.

The progress of the Kola chemical and technological cluster will be facilitated by the agreement on cooperation between the government of the Murmansk region, the CSC RAS, the Kirov branch of JSC “Apatit”, the branch of JSC “Rosenergoatom”, Kola nuclear power plant and JSC “Kola MMC” to create sorbents for decontamination of liquid radioactive waste using local raw materials. The agreement was signed last year, in November, at the VII International Conference “Mining Industry of the Barents Euro-Arctic Region: View to the Future”. This agreement differs from the others: all interested parties not only agreed to join efforts but also decided to provide financing at the expense of industrial and energy companies of the region.

Scientific publications about the project “Kola chemical and technological cluster” let us to conclude that this project is the most scientifically justified and innovation [1, Kalinnikov V.T., Nikolaev A.N.; 2, Masloboev V.A.; 3, Fedoseev S.V.]. Its economic importance is undoubtable, as the cluster's products include import-substituting, strategic and structural materials that ensure national and environmental safety. The development of many of the country's major deposits, as well as the Kola Peninsula deposits, is now constrained by a decline in demand for certain types of



minerals in foreign markets and — due to low demand — in the home market. The production of the Kola chemical and technology cluster is less dependent on the demand, as the production of rare-earth mineral concentrates and metals is relatively low-tonnage (the volume of production in the world is expressed in thousand tons). Due to the existence of import and export quotas in China — the main producer of rare-earth products, the constant changes in the number and content of quotas and increasing demand for rare-earth mineral products in industry, prices for such type of products are constantly growing.

Production of rare-earth mineral concentrates is planned to be organized on the basis of Lowzero deposits of loparite and eudialyte; Kovdor deposits of magnetite, apatite, baddeleyite, phlogopite and olivine; and Khibiny deposits of apatite, nepheline and titanite. They have been already developing by large mining companies of the Murmansk region. So, the production of concentrate won't be started "in the open field" [5, Vinogradov A.N.; 6, Kharitonova G., Ivanova L.V.; 7, Ivanova L.V., Kharitova G.N.; 8, Bjørkan M., Bourmistrov A.]. However, the production of rare-earth mineral concentrates and pure metals still requires new production facilities at existing enterprises and the diversification of their production. In other words, companies should include investment projects for new industries in their strategic plans. By now, companies have been limited only by the agreements on cooperation. It is insufficient for the Kola chemical and technological cluster, even if it will be an accessory project of the Kola support area.

Another issue is the dependence of the Murmansk region's economy on the supply of fuel and energy resources from the outside, since it has no own deposits of coal, oil or natural gas. Only electricity is produced by the Kola nuclear power plant in excess.

In other words, the energy infrastructure necessary for the operation of energy-intensive production of rare-earth mineral centers is insufficient, or rather, will require additional costs for the purchase of fuel and energy resources and their delivery to the Murmansk region (coal, fuel oil, and liquefied gas). In 2014, immediately after it had become clear that the development of the Stockman gas field and a gas pipeline through the territory of the Murmansk region were postponed, the government of the Murmansk region tried to convince PJSC "Gazprom" to solve the energy problem by building a main gas pipeline with a length of 1,300 km, connecting the Kola Peninsula with the gas transportation system of the North-West of Russia. This project is of interest to all major mineral companies of the Murmansk region (JSC "Apatit" (JSC "PhosAgro"), JSC "Kola MMC", JSC "North-West Phosphorus company", JSC "Olkon", JSC "Kovdorsky GOK" (JSC "EvroKhim"), who plan to develop their industries.

Thus, it can be concluded that the project "Kola chemical and technology cluster" should be considered as the most realistic prototype of the mineral resource center in the Kola support zone of the Arctic, if the state program of the Russian Federation "Social and Economic Development of the Arctic zone of the Russian Federation" and the state program of the Russian Federation "Development of the transport system" will include an infrastructure project for the construc-

tion of a gas pipeline. After this project, all the necessary conditions for a mineral resource center within the Kola support zone of the Arctic will be available.

However, the draft law “On the Arctic zone of the Russian Federation” contains a list of specific requirements for project proposals for the support zone, implementation of some projects (the proposal should meet all the requirements to be considered) is difficult or simply impossible at the current level of information support, strategic planning, design and interaction of the authorities of the Arctic regions with business structures. Due to the fact that the “State Program for Social and Economic Development of the Arctic zone of the Russian Federation” under the sub-program “Formation and functioning of the support zones of development” provides for “research work aimed at the formation of the support zones of development”, the objectives of our study included the development of methodological proposals for the harmonization of requirements for applications of the Arctic subject of the Federation on the formation of the mineral resource center of the Kola support zone, primarily, in case of the existing regulatory framework of subsoil use, environmental protection and methods of investment project development.

#### ***Justifying the requirements for of the application for the mineral resource center project in the Kola support zone of the Russian Arctic***

The content of the draft federal law “On the Arctic zone of the Russian Federation” shows that it is a law on supporting zones. This was repeatedly indicated by the governor of the Murmansk region and other top officials<sup>8,9</sup>.

In terms of forming support zones and the application requirements, this draft law can be attributed to the “direct action” act, i.e., it does not require the presence of concretized and developing regulations. It should be noted that this contradicts the “State Program for Social and Economic Development of the Arctic zone of the Russian Federation until 2025”, i.e., its sub-program “Formation and operation of support development zones” and its plans to approve regulatory acts for the formation and functioning of the support zones.

The draft law is going to be discussed by the State Duma during the autumn session 2018. Of course, the draft will get changes. This will happen, especially likely if the government creates an “authorized federal body” for the state policy and regulation of integrated social and economic development of the Arctic as well as the “management company”, responsible for analytical support, monitoring and synchronization of the infrastructure construction work and investment projects in the support zones. These executive bodies of the federal government are interested in the law of action no less than the participants of the support zones’ projects, as they, together with the Interdepartmental Working Group on Socio-Economic Development of the Arctic, are responsible for the final result.

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<sup>8</sup> Vlasti Zapolyar'ya predlagayut dorabotat' zakon o razvitiy Arkticheskoy zony. [The Arctic authorities propose to complete the law on the development of the Arctic zone]. URL: <https://www.murman.ru/themes/arctic-05122017.shtml> (Accessed: 24 August 2018). [In Russian]

<sup>9</sup> Pravovoj status Rossijskoj Arktiki ostayotsya razmytym. [The legal status of the Russian Arctic remains unclear]. URL: <https://www.murman.ru/themes/arctic-19062018.shtml> (Accessed: 24 August 2018). [In Russian]



If the adoption of a law is successful, i.e., it will not be rejected, but sent for revision, then its approval can be expected by the end of this year<sup>10</sup>. Meanwhile, the first stage of the pilot projects for support zones ends in 2020. Therefore, the applicants and participants of the three pilot projects defined by the government are concerned about the legislative uncertainty and the deadline for submitting applications. The worst variant for potential applicants is use of the requirements and the submitting procedure contained in the draft law. Such a scenario is the most probable, since the developers of the application requirements used the best management decision-making practices to get a complete set of projects for the support zone to be implemented. Although, it is not entirely clear what such a complicated procedure for approving applications is provided for. Projects in there have already passed through all types of examinations. E.g., meetings of the Interdepartmental Working Group, which decides on the application, “are held as needed, but at least once a year.” In our opinion, the assessment of the rationale for the “feasibility and effectiveness” of creating a base zone for the Arctic development can be performed by an authorized federal agency, since this function meets its intended purpose. It should be noted here that the indicators of the “feasibility and effectiveness” of the base zone are not specified in the draft law, therefore the fulfillment of this requirement may depend on the subjective opinion of the authorized federal agency.

This is especially important for projects of mineral resource centers, since the procedure for the examination of feasibility studies for developing fields or building new and expanding existing mining industries takes 2–3 years. Moreover, the expiration date of the examination is not defined, i.e., it is unclear when it should be repeated. Due to the fact that the use of the best available technologies is an economically and environmentally sound requirement for Arctic field development projects and the creation of new industries on their basis, chances to be included in the list of pilot projects decreases sharply. This problem can be solved only after the legislatively established transition of enterprises to new technological standards will be completed (in 2019–2021), i.e., at the second stage of the support zones formation.

The Government of the Murmansk region, as the applicant of pilot projects, does not agree with the total cost of the anchor project proposed by lawmakers, which should not be less than 100 billion rubles, and if it is less, then the project is not even accepted for consideration<sup>11</sup>. In our opinion, in case of pilot projects for support zones, the cost of the main part of the project is not reasonable to be indicated at all, especially since the government, when deciding on the area for a pilot project is guided by their national economic and regional importance — economic development of the country and the Arctic.

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<sup>10</sup> Закон об опорных зонах в Арктике отложен до конца года. [The law on support zones in the Arctic has been postponed until the end of the year]. URL: <https://www.murman.ru/themes/arctic-06072018.shtml> (Accessed: 24 August 2018). [In Russian]

<sup>11</sup> Власти Заполяр'я предлагают доработать закон о развитии Арктической зоны. [The authorities of the Arctic areas offer to refine the law on the development of the Arctic zone]. URL: <https://www.murman.ru/themes/arctic-05122017.shtml> (Accessed: 24 August 2018). [In Russian]

On the other hand, the participants of the support zones will receive preferences if the territory of the support zone or a part of it will be recognized as “territories with preferential conditions for doing business”. In this regard, it is logical to consider only large investment projects that will make a significant contribution to the accelerated social and economic development of the of a particular area of the Russian Federation and the creation of comfortable living conditions for the population. It should be noted that the preferential conditions for doing business in the support zones have not yet been established. It is only assumed that they will be the same as for the zones of projected economic development.

Mineral resource center development projects differ from the other projects by the fact that the other projects (planned or implemented) in the support zones do not depend on their implementation.

The set of documents included in the application for most of the mineral resource center projects is exactly the same as for the other projects. Also, a limit on the number for such projects has been set: at least three of them. In this regard, there is unjustified competition between the projects related to various sectors of the national economy or social infrastructure and equally reasonable and socially significant.

For mining projects, there is one more condition: the consideration of their applications by the Interdepartmental Working Group takes place “when such applications accumulate”. Among other things, the refinement of applications is impossible.

In case of the mineral resource center of the Kola support zone, the project “Kola Chemical and Technology Cluster” could become major, but this is only possible at the second stage of the support zone formation. The main condition for this will be the agreement of the mining and metallurgical companies of the Murmansk region to become investors and developers of the project.

In the draft law, the main idea is that the presence of an investor is important for the application for a support zone formation. Only 3 of the 14 mandatory application requirements could be independently fulfilled by the applicant, i.e., the authority of the Arctic territory of the Federation. The remaining 11 requirements of the application are impossible without a defined investor. E.g., par. 11 of the application: “provide a business plan for each project that is planned to be included in the support zone, incl. information on the planned investments, implementation dates and basic financial, economic and environmental indicators of the project, project investors info and (if similar projects have been previously implemented) their experience in implementing similar projects with comparable expenditures, prepared in accordance with the guidelines of an authorized federal agency. The business plan of the project should be accompanied by the financial statements of the project investors for the last three reporting years”<sup>12</sup>. In our opinion, the financial statements of a potential investor for the past three years and notarized copies of the constit-

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<sup>12</sup> Proekt federal'nogo zakona “O razvitií Arkticheskoy zony RF” [The draft federal law “On the development of the Arctic zone of the Russian Federation”]. URL: <http://docs.cntd.ru/document/555622319> (Accessed: 24 August 2018). [In Russian]

uent documents of potential participants of the support zone are redundant, especially for those investors who intend to create diversified productions.

In addition, the highest executive body of a subject of the Russian Federation must not only find a potential participant in the supporting zone, but also sign an “Agreement on the preparation of an application for the creation of a supporting zone”. In this document, the applicant is obliged to indicate the procedure for providing information to the potential participant to evaluate their participation in the investment project, and it should also determine the procedure for the allocation of costs between the parties for the preparation of the application. Additional documents are attached to investment agreements, which will specify the mutual relations of the parties, define their responsibilities for non-fulfillment of the specified conditions, and they also establish a schedule for the projects planned to be included in the support zone. By signing an additional agreement, the member of the support zone must also commit to contributing to the Project Support Fund of the Arctic in the amount of at least 20%, depending on the cost of the infrastructure created in the manner prescribed by the investment agreement. In fact, it turns out that the participants of the support zone, who have not yet received income from their activities, must pay for the infrastructure facilities constructed with the use of the federal and regional budgets.

Numerous requirements for a member of the support zone, incl. financial obligations, of course, do not contribute to attracting investors.

Search for investors remains the main problem for applicants. It is also due to other reasons. Particularly acute is the problem of finding an investor. Potential investors in areas with extreme climatic conditions and increased costs of all resources can only be a successful (profitable) and large private company interested in large deposits and raw materials or products that are in demand on world markets or have a steady upward trend of demand in the home market [9, Perein V.N.; 10, Goncharova L.I.].

In the Kola support zone, examples of large fields are: the Khabozersk olivine field for magnesia refractories and the quartz-feldspathic ores of Kuru-Vahar, i.e., the fields that have a developed dressing technology worked out by the scientists of the FITS KSC RAS Mining Institute.

The list of promising and studies fields of the Murmansk region is presented in Table 1. It does not include deposits of non-conventional types of resources, since they are relatively low studied and are under the “search-and-estimate work”.

Table 1

*Perspective fields and deposits of the Murmansk region*

Deposit	Ore/mineral	Location	Reserves	Exploration degree
Kurkenpachk	<i>Iron ore</i>	Monchegorsk district, Olenegorsky GOK district	$C_1+C_2$	Pre-explored
Kolmozero	<i>Rare earth pegmatites (lithium, beryllium, tantalum, niobium)</i>	Lovozerskiy district	$B+C_1+C_2$	Detailed exploration
Palmostundrovskoe			$B+C_1+C_2$	Detailed exploration
Vasin-Mylk			$C_1+C_2$	Pre-explored
Ohmylk				
Oleniy Ridge				

Deposit	Ore/mineral	Location	Reserves	Exploration degree
Neske-Vara	<i>Carbonatites (niobium, tantalum)</i>	Kandalaksha district Vuorijarvi massif	C <sub>1</sub> +C <sub>2</sub>	Pre-explored
Tuhta-Vara	<i>Apatite-magnetite ores (phosphorus, iron, niobium, tantalum)</i>		259 mln tons of ore C <sub>1</sub> +C <sub>2</sub>	Pre-explored
Sallanlatva	<i>Baritriderite carbonatites</i>	Kandalakshskij rajon	85 mln tons of ore C <sub>2</sub> +P	Pre-explored
Afrikanda	<i>Perovskititanomagnetite ore</i>	Polyarnozorinskij rajon	A+B+ C <sub>1</sub>	Explored
Kejvy (5 mes-torozhdenij)	<i>Kyanite shales</i>	Lovozerskiy District, Kejvy	868 mln tons of ore B+C <sub>1</sub> +C <sub>2</sub>	Pre-explored
Caginskoe	<i>Titanium, iron</i>	Lovozerskiy District	B+C <sub>1</sub>	Pre-explored
Alluajv (r.t. №1)	<i>Eudialytic ores (rare earths)</i>	Lovozerskie tundry	C <sub>1</sub> +C <sub>2</sub>	Pre-explored
Saharjok	<i>Yttrium-zirconium ore</i>	Lovozerskiy District, zapadnye Kejvy	C <sub>2</sub> +P	Pre-explored
Ploskogorskoe	<i>Amazonite</i>		120,357 t of vein mass C <sub>1</sub> +C <sub>2</sub>	Pre-explored
Yauriyokskoe	<i>Molybdenum</i>	Kolskiy District	1,386 t Mo B+C <sub>1</sub> +C <sub>2</sub>	Pre-explored

One could also find an investor for the development of groundwater deposits, which fits into the idea of the mineral resource center and the support zone, since the development of groundwater deposits serves as an infrastructure and also contributes to the interconnection of projects that are implemented in the support zone.

Due to the fact that most of the technologies used today are reservoirs and the sources of water intake for industrial purposes of mining companies are quickly polluted by discharges and become unsuitable for both industrial and drinking water supply, the development of groundwater deposits remains important for all industrial areas of the region.

On January 1, 2015, 51 fields of drinking and industrial groundwater with reserves of 403.20724 thousand m<sup>3</sup>/day were included in the state registration list in the Murmansk region. 32 deposits are exploited. Surface water dominates in the drinking water supply in the area. Groundwater accounts for only 4%.

Perspective and prepared for the industrial development of groundwater deposits in the Murmansk region are: the Nizhnetulomskoye field (the Kola district, the lower part of the Tulomy river basin, 10 km from Murmansk); the field of drinking groundwater "Malaya Belaya" (Apatity municipality, reserves — 30 thousand m<sup>3</sup>/day); the Yenskoye groundwater field (the valley of the Yona river, Kovdor district; household and drinking water supply of the Kovdor and the Kovdorsky GOK); Nivskoye groundwater field (Kanda-Laksha district, valley of the Niva river, reserves — 20.6 thousand m<sup>3</sup>/day for household water supply of Kandalaksha residents); groundwater deposit "Klyuchevoye" (Kirovsk municipality, household water supply of industrial facilities of JSC "Apatit",

reserves — 16.5 thousand m<sup>3</sup>/day); the underground water deposits “Vudyavrskoe” (Kirovsk, for household water supply of the Kirovsk and industrial facilities of JSC “Apatit”).

In our opinion, it is advisable to make the application requirements more flexible for both applicants and potential participants of projects, incl. the development of mineral resources. The main goal is to increase the number of potential investors.

Currently, the value of one-time payments for the use of subsoil is a significant obstacle for the investor to decide on the development of the field and the creation of a new or expansion of the existing production. E.g., the size of the start-up payment for an investor who wants to start developing the Khabozersk olivine deposit amounts to 360 million rubles.

In our opinion, it is advisable to draw up licenses for the use of subsoil without tenders and auctions for exploration and extraction of mineral resources or for geological exploration of the subsoil, exploration and extraction of mineral resources carried out under a combined license. This will significantly reduce the starting (one-time) payments.

An effective measure for all mining companies operating in the polar regions could become a temporary reduction in the starting payment rate from “at least 10%” of the mineral extraction tax amount calculated on the average annual design capacity of the mining company up to 5% (for example), as it is secured by regulatory acts for oil and gas industries.<sup>13</sup>

Drastic measures to reduce the start-up payments for subsoil, with the obligatory condition that the investor confirms the financial possibilities, could be: 1) delaying the start of payments in the third year after the development of the field; 2) payment of start-up payments in parts, starting from the third year of development of the field.

Interesting is the proposal of the draft law developers on granting the management company a support zone with the function of searching for investors (incl. foreign ones). However, the mechanism for this important function, especially for project applicants, is not defined. In our opinion, the management company should have the authority to guarantee specific measures of state support to potential investors. This will be a more effective for attracting investors than, for example, the fulfillment of such indicators of Subprogram: 1 “Formation of supporting development zones and ensuring their functioning”, 1.4. “The number of news reports on various topics related to the development of the Arctic zone of the Russian Federation” and 1.5. “The number of socially significant events held, incl. international, dedicated to the development of the Arctic” (cumulative).

### **Conclusion**

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<sup>13</sup> Закон Российской Федерации от 21.02.1992 N 2395-1 (ред. от 30.09.2017) “О недрах”. Ст.40; Metodika rascheta minimal'nogo (startovogo) razmera razovogo platezha za pol'zovanie nedrami, utv. prika-zom Minprirody ot 30.09.2008 N 232 (v red. Prikazov Minprirody Rossii ot 14.05.2009 N 128, ot 27.04.2011 N 240, ot 22.06.2011 N 553, ot 03.02.2012 N 20, ot 30.12.2014 N 577, ot 17.03.2015 N 106).[ The law of the Russian Federation of 21.02.1992 N 2395-1 (ed.of 30.09.2017) “On subsoil”. Art.40; Method of calculation of the minimum (starting) size of the one-time payment for subsoil use, approved. Order of the Ministry of Natural Resources 30.09.2008 No. 232 (as amended by Orders of the Ministry Natural Resources of Russia 14.05.2009 No 128; 27.04.2011 No 240, 22.06.2011 No. 553, 03.02.2012 No 20, 30.12.2014 No 577, 17.03.2015 No 106). [In Russian]

We believe that the formation of mineral resource centers in the support zones of the Arctic on the principles proposed by the Ministry of Economic Development of the Russian Federation will contribute to the achievement of the objectives of the “Strategy for the Development of the Arctic Zone of the Russian Federation and Ensuring National Security until 2020”.

During the formation of the mineral resource centers in the Arctic, an effective measure of the federal regulator may be a temporary reduction in the starting payment rate from at least 10% of the mineral extraction tax amount calculated on the average annual design capacity of the mining company to 5%.

Successful applications for the mineral development for the support zone, investment projects for the development of fields and new mining industries should correspond to a project management standard. When choosing the investor, regional authorities should evaluate the experience of a company in such projects and use the approach method.

It is also advisable to review the application requirements and to make them more flexible for both the applicant and potential participants of projects, especially, mining and resource development ones.

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