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Article



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## FEATURES OF SOCIO-ECONOMIC INDUSTRIAL PROVISIONS CITIES RUSSIAN ARCTIC

**Abstract:** In this article, the authors examine the systemic and emerging challenges, risks, and opportunities for economic development, including sustainable development, in the Russian Arctic. An analysis of the characteristics, trends, and prospects for industrial production in the Russian Arctic is provided, revealing the problems and specific features of its operation. single-industry towns. Installed readiness The Russian Arctic regions are working to overcome current economic instability from a labor market perspective. The problems and prospects for creating conditions for the integrated use of raw materials in Arctic regions are examined and substantiated. The conditions and prospects for shift work transformation as a means of changing migration trends and developing the Arctic labor market are identified.

**Key words:** current issues, investment projects, global recessions, geopolitical processes, problems of increased costs, socio-economic processes, Arctic zones, economy of the Arctic Zone of the Russian Federation regions.

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### Introduction

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These facts confirm significance chosen ones us wide the context of the study of the development of

the Russian Arctic not only from the standpoint of achieving the economic indicators of specific enterprises and target indicators for the development of the Arctic established at the regional and national levels, but it is precisely in the context of movement

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within the framework of a global strategy for the development of the oil and gas, mining, and metallurgical businesses, taking into account risks, possibilities, a also new roles V public stabilization in the context of the COVID-19 pandemic and rising geopolitical tensions. This broad context naturally highlights the scale of new challenges that must be addressed, namely:

- on the one hand, updating the risks and opportunities for greening production and social responsibility for enterprises in the Arctic Zone of the Russian Federation;

- on the other hand, the supporting role of the state as a regulator conditions for development business initiatives private sector V the Arctic is intensifying possibilities development and influence business on socio-economic processes, but simultaneously forms restrictions development business, necessity provision complex measures security — epidemiological and environmental,

- on the third hand, the need to achieve strategic development goals Arctic Zone of the Russian Federation, fixed V complex strategic indicators development of the Arctic Zone of the Russian Federation, including demographic ones, the probability of achieving which we justify as low (the main target indicators are reflected in the Arctic Zone Development Strategy, the Program of the Russian Federation “Socio-Economic Development of the Arctic Zone of the Russian Federation”. With taking into account the above us was ahead to decide first, namely: to find out the conditions for sustainable development of the Russian Arctic:

to identify the problems and specific features of the functioning of single-industry towns in the Russian Arctic.

In the old industrial cities of the Russian Arctic regions — the Komi Republic, Krasnoyarsk Krai and Murmansk Oblast — the historically developed concentration of industrial sectors has determined the corresponding economic, social and spatial structure of single-industry settlements. The city of Vorkuta (Komi Republic), founded in 1943 on the basis of several settlements, developed as a coal mining center: in 1931, the construction of the settlement Rudnik (which later became the city of Vorkuta) began; in 1932 — the construction of two mines; in 1933 — the construction of a narrow-gauge railway between the mines and the pier of the Pechora Shipping Company; in 1934, the first echelon of coal was dispatched; in 1940, four new mines were founded; in 1944, the Vorkuta Mechanical Plant began operating; in 1953, 17 mines were already operating; in 1974 the plant Vorkutaugol was transformed V production Vorkutaugol Association; V 1997 G. unification was transformed V open joint-stock company; in 2003, the merger of OJSC Vorkutaugol took place with JSC Severstal V 2022 G. JSC Vorkutaugol entered V compound OOO Russian

Energy holding AEON, engaged in large infrastructure projects. Enterprises JSC Vorkutaugol are mastering Pechorsky coal basin — large raw materials base for energy, metallurgical and coke-chemical industry: V compound JSC Vorkutaugol are included four mines, one cut and enrichment factory. B coal in general branch of the economy Vorkuta creates about 80% of the volume industrial production and practically 60 % urban gross product. Peak socio-economic development the city of Vorkuta fell on 1988–1989 gg. with a maximum population of 218.5 thousand people (included in the city-forming enterprise in this period was included 13 mines, a also service enterprises, state farm trusts, enterprises socio-cultural and household appointments.

### Main part

Today V compound municipal education "Urban district Vorkuta" includes the city of republican significance Vorkuta, 8 urban-type settlements and 7 rural settlements. The population as of January 1, 2024, was 71,300 people, including 62.3% of the working-age population. Peculiarity national composition population — vital activity of indigenous peoples few in number peoples North Nenets, engaged in reindeer herding and leading nomadic image life. Here located generic community "Tybertya" and the trading posts "Buredan", "Syr-Yaga", "Zapadnaya", "Balbanty" maintained by the PSC "Olenevod".

The city of Vorkuta is included in the list of single-industry municipalities Russian Federation (on city-forming enterprise busy 23.5 % average headcount of employees at city enterprises). The current economic situation of the city is characterized by a single-industry economy, subsidies, low potential diversification economy. One of features Vorkuta consists of V volume, what she located V separation from highway and logistics communications: territory cities limited by iron expensive and non-year-round highway. This feature determines the autonomy of the urban economy - spatial detachment from main markets sales products and the closed nature of sales of the main industries to a specific market. The emergence of the city of Norilsk (Krasnoyarsk Krai) is associated with the development of Taimyr deposits of non-ferrous and precious metals: in 1935, a decision was made to build the Norilsk Nickel Plant, in 1939, the camp settlement Norillag received status worker settlement Norilsk, in 1953 G. — status cities. To 1953 G. V G. Norilsk were built necessary urban infrastructure facilities (hospitals, schools, a stadium, clubs, and a cinema). The population of Norilsk was 77,000 people, of which 68,000 were prisoners. "Norillag". In 1989 G. plant entered V compound state concern for the production of non-ferrous metals Norilsk Nickel (the concern also included the Pechenganikel and Severonikel plants, the

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Olenegorsk Mechanical factory, Krasnoyarsk factory colored metals And Gipronickel Institute ). With 2001 G. enterprise is Polar branch MMC Norilsk Nickel is the largest producer of nickel, palladium and platinum and copper, production units which are located V Russia, Australia, Botswana, Finland and South Africa. Zapolyarny branch PJSC « Mining and metallurgy Norilsk Combine nickel" have to near 70 % urban gross product and about 87% of the industrial output. The products of the city-forming enterprise, providing more than 7% of the metallurgical production Russia, uses sustainable in demand in the domestic and foreign markets. In addition to mining and non-ferrous metallurgy, Norilsk's socio-economic development is determined by the gas industry. And food industry, transport and communication, Housing and communal services, trade and supply activities; the city is completely self-sufficient in energy resources. Today, the municipal formation of the urban district of the city of Norilsk includes the city of Norilsk and the urban settlement of Snezhnogorsk. Closed and remote, Norilsk, accessible by air and water, is the fastest-declining city in the Russian Arctic (as of January 1, 2022). G. number population cities compiled 184.6 thousand person, from them V able-bodied age — 66.8 %). Geographic remoteness from Key transport routes, hubs, and sales markets are the main reasons for complex cargo delivery logistics, high transportation costs, high transport tariffs, rising living costs, and the vulnerability of energy infrastructure. Furthermore, Norilsk is one of the from the most contaminated cities Russian Federation. One of recent environmental disasters G. Norilsk (May 2020 G.) — spill 15 thousand m<sup>3</sup> petroleum products V rivers Daldykan and Barn as a result partial destruction tank with diesel fuel on the territory Thermal Power Plant No. 3 of Norilsk -Taimyr energy companies — subsidiary enterprises MMC Norilsk nickel".

City-forming enterprises of Kirovsk (Murmansk region) - Kirovsky branch JSC "Apatite" And JSC "North-West Phosphoric Company (PJSC Acron). The discovery of apatite-nepheline ore deposits on the Kola Peninsula in 1920 served as an impetus for the development of mining and the creation of a mining and chemical plant "Apatite". Simultaneously with construction the city of Khibinogorsk was built around the mine and the processing plant of the plant. In 1929, the Apatit Trust was established, which in 1938 received the status of a state mining and chemical plant "Apatite". With 1930 G. V under construction worker village special settlers and volunteers began to arrive (mostly from the city of Leningrad, before 1938 G. which was administrative center Murmansk district). In 1931 G. began launch first apatite-nepheline factories ANOF-1. IN 1934 The town of Khibinogorsk was renamed Kirovsk. Further development of the apatite-

nepheline ore deposits of the Khibiny deposit proceeded in record time; the Central and Vostochny mines were commissioned, near which the settlement of Koashva grew. A third apatite-nepheline processing plant was built and commissioned near the settlement of Titan. In the 1980s, the population of the town and surrounding villages remained stable, in part due to major housing construction in the nearby town of Apatity.

The establishment of the plant gave rise to numerous teams to serve it. Thus, in 1953, due to the emergence of cases of pneumoconiosis among the plant's workers, a departmental unit was created at the plant station by struggle with silicosis, today this scientific medical institution federal subordination "Research" a laboratory for complex hygiene problems with an occupational disease clinic," which is respected in Russia and abroad. Since 2017, the enterprise has been the Kirov branch of JSC Apatit, the largest supplier fertilizers vertically integrated PhosAgro Group compound the group also includes mining and processing enterprises in the Vologda, Saratov, and Leningrad regions, its own logistics infrastructure, two port terminals, and a distribution network for mineral fertilizers and feed phosphates. <sup>41</sup> The Kirov branch of JSC Apatit is the core enterprise of the PhosAgro group, providing the company's production complexes with apatite concentrate for the production of fertilizers in demand on the domestic and international markets. The company is developing six Khibiny deposits: Yuksporskoye, Kukisvumchorrskoye, Apatite Circus, Plateau Rasvumchorr, Koashvinskoe and Nyorkpakhkskoye . In 2024, its processing plants produced more than 10.6 million T apatite and 1.1 million T nepheline concentrate. Number of employees Kirovsky branch JSC "Apatite" together with subsidiaries the branch accounts for 37% of the city's employees. The branch has its own training center, providing vocational training and continuing education in required specialties. Kirovsky branch JSC "Apatite" plays big role in the socio-economic development of the city: the share of tax and non-tax revenues in the total volume of the city budget's own revenues is 56 % (receipts from personal income tax, land tax, rental pay for land, payments for negative impact on the environment). History of JSC North-West Phosphorus Company (NWFC) began in 2008 from the construction of infrastructure facilities for a mining enterprise; V 2012 G. was handed over V exploitation career "Deer Ruchey" and the construction of the first stage of the processing plant was completed; since 2013, shipments of apatite concentrate to Russian chemical enterprises of the Acron Group and third-party consumers began; in 2014, at the industrial site Mining and Processing Plant "Deer Stream" were introduced V exploitation main and auxiliary facilities; in 2018, ore mining began from the underground mine And was

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introduced V exploitation new railway branch, connecting the mining and processing plant "Deer Stream" With basic network. On today's day subsidiary PJSC company Akron JSC SZFK fully provides needs Russian enterprises groups Akron V phosphate raw materials. Number of people the number of employees of JSC SZFK is 2.1 thousand people. Kirovsk — administrative center municipal education G. Kirovsk, V compound whom also are included villages Titanium and Koashva. The settlements of the urban district are located 25 km away from the main transport highways of the Murmansk region and occupy a dead-end position in the system of main regional transport links. The population of the municipality education makes up 27.7 thousand person, V volume number 58.1 % — of working age. A special legal regime for entrepreneurial activity has been established in the city of Kirovsk in order to ensure accelerated socio-economic development and the formation of a favorable investment climate And creation comfortable conditions for ensuring life support. Residents of the Kirovsk Priority Social and Economic Development Area include repair and maintenance centers, a workshop for equipment repair for major mining enterprises in the region, and tourist complexes.

The city of Kirovsk has a unique natural landscape: the Khibiny Mountains have an average height, comfortable for mountain skis and others species sports. He has traditions active rest and sports, extreme and adventure tourism, skiing season here is one from most long-term among similar resorts. Popularity uses summer tourism V Khibiny mountains (pedestrian, bicycle, water tours and etc.). Besides this, territory cities covers national Khibiny Park, within the boundaries of which unique geo-, hydro-, zoological, botanical, complex landscape and historical and cultural objects, representing cognitive and aesthetic value. Appearance G. Monchegorsk connected with development copper-nickel deposits. In 1932 G. on state level was accepted decision on complex research Zaimandrovsky district, at trust "Apatite" was created Bureau by development Monche -tundra, approved plan construction of populated areas point. In 1933 G. V composition trust "Apatite" was the directorate was created Severonikel, V 1934 G. — accepted solution O creation Severonikel plant. In 1935, with the issuance of the Resolution of the Bureau of the Leningrad Regional Committee of the All-Union Communist Party (Bolsheviks) on the construction of a nickel-copper plant on the Kola Peninsula in the Monche -tundra, the creation of Severonikel began. Construction was underway three mines, enrichment factories, metallurgical and a smelting plant, a refinery, housing and communal facilities for placements and service 25 thousand workers and general population size V 75 thousand person, broad-

gauge railway branches For connection with Kirov highway. IN 1935 G. from populated point Moncha -Guba was educated worker village Monchegorsk. In 1937 G. organized camp department for the construction of a nickel plant. In the same year, the village of Monchegorsk becomes city. In 1938 G. entered V build first queue Severonikel plant, in 1940 the plant reached the full technological cycle<sup>49</sup>. In 1989 G. was educated state concern Norilsk nickel", V the composition of which entered plant Severonikel V 1994 G. Norilsk Nickel was incorporated; in 1998, Kola Mining and Metallurgical Company OJSC was established, united factories Severonikel and Pechenganikel into a single mining and metallurgical production facility. Today, a subsidiary of PJSC Mining and Metallurgical Plant Norilsk nickel" JSC Kola mining and metallurgy "Company" is the leading enterprise in the city of Monchegorsk. The city-forming enterprise accounts for 89.4% of the total output. Three rural settlements are located within the jurisdiction of the Monchegorsk municipal district. The population of Monchegorsk is 44,100 people, 56% of whom are of working age economy cities the main one share represent organizations — manufacturers of processing production and implementing activity enterprises by production, transportation and distribution electricity, heat and water. The recreational resources of the Monchegorsk district are popular with tourists for outdoor activities. Particularly popular are the Loparstan ski resort and the Lapland State Nature Biosphere Reserve, located in the city's outskirts. In 1985, it became a UNESCO World Network of Biosphere Reserves. Industrial interest V 1929–1932 gg. represented located V ore-bearing strip Zaimandrovsky district Monche tundra deposits, in connection with which a decision was made at the state level to develop the largest promising Olenegorsk iron ore deposit. In 1948 G. V composition trust Kolstroy was the construction department " Rudstroy " was established; V 1949 G. was organized Yono-Zaimandrovskoe the Kolzhelruda mine administration and the beginning of capital mining works at the Olenegorsk iron ore mine deposit. In this same year was founded Olenegorsky mine and populated paragraph Deer, which V 1957 G. was renamed V G. Olenegorsk; in 1960 G. Olenegorsk mine administration was renamed V Olenegorsky mining and processing plant; V 1993 G. plant transformed V JSC "Olcon"; in 2000 G. enterprise entered V compound PJSC Severstal.

In compound municipal districts G. Olenegorsk today are included the city of Olenegorsk and four settlements; the district is home to 29.6 thousand people, including the working-age population - 59.4%. The largest enterprises and main taxpayers in the city Budget<sup>5</sup>: military units, Olkon OJSC, and Olenegorsk Mechanical Plant OJSC. The district's territory is favorable for tourists: near the

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town of Olenegorsk is the Simbozersky nature Reserve (the purpose of which is to protect rare animals). Kola peninsula), V 10 km from cities on shore Hare's lakes the agrovillage "Oleniy Bereg" is located here. Active development of the Kovdorsky District's muscovite mica reserves began in 1932. In 1933, an iron ore deposit was discovered here, and industrial mining began in 1934. Construction of a mining and processing plant and a workers' settlement began in 1953. In 1956, the village was transformed into an urban-type settlement. In 1962, construction of the Kovdor Mining and Processing Plant was completed, and in 1963, the second phase of the plant was launched. In 1965 G. Kovdor received status cities. In 1975 G. was Apatite was put into operation baddeleyite plant. The largest producer of apatite, iron ore and baddeleyite concentrates, JSC Kovdor Mining and Processing Plant plant" since 2001 g. is structural division of EuroChem MCC JSC. Today, the company's annual production of baddeleyite concentrate accounts for 100% of the world's total, and its share in apatite production concentrate — 18%. Share city-forming enterprises<sup>57</sup> V in general volume shipped goods own production makes up 94%, 38.8% of the working population are employees of JSC.

Territory Kovdorsky municipal districts make up G. Kovdor, as well as the settlements of Yonsky, Rikolatva, Kuropta, Leip and the village of Yona. Modern Kovdor is one of the young industrial centers of the Murmansk region with a population of 17.3 thousand people, including 56.1% of working age city there is developed infrastructure, including sports a complex with a swimming pool, a ski slope, and a lighted ski slope and a sanatorium-preventorium.

Role largest supplier hydrocarbon raw materials on the Yamalo-Nenets Autonomous Okrug has secured its position in both domestic and global markets thanks to its unique hydrocarbon deposits. Gubkinsky, Muravlenko, Novy Urengoy, and Noyabrsk are typical Arctic industrial cities whose economies are tied to production activities in an oil and gas region with dispersed hydrocarbon deposits.

The formation of the city of Gubkinsky is associated with the industrial development of a group of promising by reserves hydrocarbon raw materials oil and gas deposits in Western Siberia. In 1967 G. was open Tarasovskoye a field within which 16 oil, gas condensate, and gas condensate fields were discovered and gas deposits. In connections with remoteness the future city was initially planned to be connected to the newly formed settlement of Purpe on the railway line, but the project was rejected for technological reasons. Then, the decision was made to build a city. V 17 km from stations Purpe. In 1986 G. on deposit was mined first ton industrial oil. Gradually was being settled deposit, and developed production power, were erected children's garden,

school, a community center, a hospital, and a store. In 1988, the village was named after the founder of Soviet oil geology, Gubkinsky. In 1996, the village received the status of a city of district significance, and in 2021, the settlement of Purpe was incorporated into the city. In the 1990s, official development of the Gubkinsky oil and gas condensate field, discovered in 1965, began. deposits. In 1993 G. began exploitation Gazprom Dobycha Noyabrsk LLC of the Komsomolsk gas field, and in 1999, Purgaz CJSC developed the Gubkinskoye gas field.

Today the city's population is 38.3 thousand people, including 66 % — V able-bodied age. Economy cities provided for check activities enterprises fuel and energy complex (on complex have to near 42 % of average numbers workers). The largest projects are implementing an LLC RN-Purneftegaz, OOO SevKomNeftegaz, OOO "Yangpur", LLC "Kharampurneftegaz", OOO Belorusneft-Siberia, OOO Purneftepererabotka, Purpeisky Linear Production Department of Main Gas Pipelines OOO Gazprom transgaz Surgut". Near with city indigenous people live peoples — Nenets, Khanty, Selkups, Mansi — and lead my activities of the clan community " Dyanki -Koy" and the family clan community " Apydyu " ours."

The emergence of the city of Muravlenko is associated with the industrial development of Muravlenkovskaya groups oil deposits V Western Siberia. From drilled V 1975 G. search wells on Sutorminsky the first oil was extracted at the field. The first client for the construction of the town of Muravlenko was the oil and gas production department "Kholmogorneft ": in 1982, the first two-apartment houses (Talitsky wooden houses) were erected. The future town was named in honor of the Soviet organizer of the oil and gas industry, V. I. Muravlenko. In village came specialists from many regions USSR: to 1984 G. V him already lived 1.6 thousand person in 1990 G. settlement Muravlenkovsky came out of composition Purovsky district and became city district subordination Muravlenko. City-forming enterprise cities — branch Muravlenkovskneft JSC Gazpromneft-Noyabrskneftegaz, leading development 13 oil fields that have different stages of production and are located at a distance of 20 up to 150 km from the city. The modern city of Muravlenko is compactly structured (the layout is divided into residential and industrial zone). Number population is 31.3 thousand people, of which 48.6% are of working age (since 2012, it has been registered here decrease numbers population V connections with depletion of reserves old deposits oil and restructuring branch Muravlenkovskneft JSC Gazpromneft-NNG). Novy Urengoy is the industrial center of the Yamalo-Nenets Autonomous Okrug, founded in 1975 in connection with the development of the world's largest Urengoy field. In 1966, an exploratory well was drilled on the

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field's territory, proving the existence of the promising Urengoy field. oil and gas condensate deposits, near with which The construction of a workers' settlement began. In 1975, state registration was completed. settlement New Urengoy, V 1978 G. — handed over first installation comprehensive training gas, began industrial exploitation Urengoy deposits, in result which was mined first billion cubic meters Urengoy gas. In 1980 G. New Urengoy was assigned status cities district values. In 2004, the Pestsovoye deposit was put into commercial operation.

Number of people population New Urengoy Today makes up 118.7 thousand people, of which 65.7% are of working age. The modern economy of Novy Urengoy determine related with prey gas, condensate and oil enterprises included V compound PJSC Gazprom, the share of the fuel sector of the city's economy in total tax revenues is more than 60%. Exploration drilling V Noyabrsky area was started V 1968 G. V connection with opening Vyngapurovsky and Vyngayakhinsky deposits. In 1975 G. The Karamovskoye and Sutorminskoye fields were discovered, and a fountain of anhydrous oil was obtained at the first production well. In 1976, the Novogodnoye field was discovered, and in the same year, the settlement of Noyabrsky was marked on maps, and construction began on the Noyabrskaya railway station, an airfield, and a station settlement. In 1978, the Vyngapurovsky gas field began operations. In 1979, in connection with receiving the status of a workers' settlement, Noyabrsky was renamed Noyabrsk. In 1982, the workers' settlement Noyabrsk Purovsky district was transformed V G. Noyabrsk district subordination. Today number population 109.5 thousand person, from them 67 % of the working-age population. Indigenous peoples of the North—the Nenets, Khanty, and Selkups—live near the Novogodny deposit. The city of Noyabrsk is the central link in the Noyabrsk-Muravlenko agglomeration. — Khanymey, here enough developed transport Infrastructure (road, rail, and air routes). Noyabrsk Airport is the main airport of the Yamalo-Nenets Autonomous Okrug, providing transport accessibility to the region. Historically development arctic territories Russia wears strategic (spot settlement and creation of development bases) and economic (use territories and natural resources) significance. The largest Arctic complexes have their own specific characteristics. Among the main features of the old industrial cities of the Russian Arctic is the cyclical nature of production activities, which determines the prospects for the socio-economic development of such cities. The Arctic subcenters of the Yamalo-Nenets Autonomous Okrug are practically devoid of innovative development potential. Industrial cities Russian Arctic are playing the main one role in the modern vector of the Arctic policy of the Russian Federation, since the implementation of the largest economic projects suggests formation demand for

high-tech And knowledge-intensive products And stimulates production of such products. Among main directions implementation such vector in the Murmansk region - geological study of the mineral resource base, the formation of mineral resource centers specializing in extraction And enrichment useful fossils, development tourist and recreational clusters. In the Komi Republic - economic diversification and comprehensive socio-economic development of the city of Vorkuta, development of coal mineral resource centers on Pechora coal mine base basin, geological study individual territories And development mineral resources bases solid useful mineral resources, reconstruction and modernization of the airport network, including the joint airport in Vorkuta. In the Krasnoyarsk Territory, this includes the comprehensive socio-economic development of Norilsk, the development of the Norilsk Industrial district, construction new mining capacities Zapolyarnaya mines , Creation V Norilsk research center construction technologies and monitoring states buildings and structures on northern and arctic territories, development tourism and recreation cluster in the city. In the Yamalo-Nenets Autonomous Okrug, the main areas of implementation of the Arctic vector of the Russian Federation's state policy include: the development of oil and gas chemical industries in the area of the villages of Sabetta, Yamburg, and Novy Urengoy and the formation of a multidisciplinary industrial and technological complex gas processing and petrochemicals; development technologies for involving low-pressure natural gas into industrial circulation, etc.

Undoubtedly, the implementation of the Arctic vector of Russia's state policy must take place in parallel with the maintenance and modernization of existing infrastructure and the creation of conditions for a comfortable life for the population. for beyond production zones. In this aspect especially there is a pressing need to identify structural changes in industrial production such cities, consideration problems and opportunities diversification of urban economies and development of entrepreneurial activity. Sustainability of the socio-economic development of industrial cities Russian Arctic is determined natural and climatic conditions, cyclicity production activities, addiction production from external market conditions prices on raw materials and main articles export, global crisis phenomena. World financial crisis 2008 G. produced decrease demand and prices for coal products: decrease prices implementable JSC Vorkutaugol And JSC "Shakhta" Vorgashorskaya 2» (included V compound JSC Vorkutaugol V 2012 d.) coal on 29.5 % led to reduction revenue enterprises on 3385 million rubles (the reduction in sales volumes of coal products amounted to 9%), the volume of tax receipts V budgetary system decreased on 1.5 billion rub. In as a result of mass releases number

|                       |                         |                |                       |                |                     |                |
|-----------------------|-------------------------|----------------|-----------------------|----------------|---------------------|----------------|
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registered V quality the number of unemployed citizens increased in 2008–2009 on 29 % (average the number of employees at JSC Vorkutaugol decreased by 19% in 2009. In the cities of Novy Urengoy and Noyabrsk, the level of industrial production decreased on 40 %, volumes own municipal revenues budgets decreased by 16–18 %. Revenue of PJSC MMC Norilsk Nickel decreased by 49% in 2008–2009. led to fall volumes capital investments V 2 times. The final as a result reductions prices on metals became reduction tax revenues, reduction in the budget revenues of

industrial cities. Significant deficit local budgets V 2008–2009 gg. formed in the cities of Norilsk, Novy Urengoy, Monchegorsk, and the Kovdorsky district (Table 1). low share tax and non-tax income local budgets in in general volume own income (table 2) took shape V cities Muravlenko, Gubkinsky, Noyabrsk, a significant increase in the values of this indicator in 2009–2024 occurred in the cities of Kirovsk and Monchegorsk.

**Table 1. Surplus/deficit budgets industrial cities of the Russian Arctic, million rubles**

| City               | 2007   | 2008   | 2009    | 2013   | 2014   | 2015   | 2019   | 2020   |
|--------------------|--------|--------|---------|--------|--------|--------|--------|--------|
| Vorkuta            | 94.1   | 236.1  | 216.2   | 104.5  | -343.4 | -132.1 | -104.3 | -50.9  |
| Norilsk            | 1552.6 | -977.6 | -2011.0 | -798.7 | 1241.3 | 561.7  | 1377.2 | 1113.2 |
| Kirovsk            | 61.2   | -40.6  | 27.5    | -75.3  | -47.2  | -12.9  | -104.4 | -93.6  |
| Monchegorsk        | 389.9  | -279.3 | -277.8  | -88.8  | -186.9 | -246.9 | -2.8   | -14.3  |
| Olenegorsk         | -8.4   | -60.6  | -74.9   | -8.9   | -137.7 | -151.1 | -4.9   | 22.8   |
| Kovdorsky district | -13.8  | -7.0   | -215.7  | -66.5  | -35.7  | -0.2   | 5.8    | 5.7    |
| Gubkinsky          | 52.9   | -69.1  | 44.3    | 55.6   | -105.3 | -49.4  | 1.2    | 299.3  |
| Muravlenko         | 3.6    | 28.2   | 25.6    | -105.8 | -28.4  | 93.4   | 7.0    | 199.2  |
| New Urengoy        | 928.2  | -278.5 | -593.7  | -799.3 | -648.7 | -171.4 | 681.8  | 1026.5 |
| Noyabrsk           | 103.2  | 131.4  | 286.2   | -250.1 | -90.7  | 23.0   | 68.2   | 86.5   |

**Table 2. Share tax And non-tax income local budget in in general volume own income budgets industrial cities of the Russian Arctic, million rubles**

| City               | 2009 | 2013 | 2014 | 2015 | 2019 | 2020 |
|--------------------|------|------|------|------|------|------|
| Vorkuta            | 37.0 | 48.0 | 57.0 | 53.0 | 42.1 | 37.8 |
| Norilsk            | 79.0 | 75.0 | 72.0 | 55.0 | 68.0 | 85.7 |
| Kirovsk            | 43.9 | 86.0 | 92.2 | 88.7 | 69.0 | 74.0 |
| Monchegorsk        | 38.7 | 60.3 | 86.7 | 85.4 | 67.3 | 62.0 |
| Olenegorsk         | 48.0 | 65.4 | 54.4 | 84.6 | 48.0 | 39.9 |
| Kovdorsky district | 39.8 | 60.9 | 68.8 | 71.8 | 63.9 | 38.0 |
| Gubkinsky          | n.d. | 33.4 | 35.3 | 31.7 | 20.5 | 17.8 |
| Muravlenko         | n.d. | 20.8 | 21.9 | 24.0 | 13.6 | 11.9 |
| New Urengoy        | n.d. | 73.9 | 71.0 | 75.0 | 47.4 | 47.0 |
| Noyabrsk           | n.d. | 36.3 | 49.6 | 42.8 | 28.0 | 24.0 |

Today, in the industrial cities of the Yamalo-Nenets Autonomous Okrug, decrease volumes receipts taxes on income physical persons from city-forming enterprises. In the city of Muravlenko, this trend is due to restructuring JSC Gazpromneft-NNG (V 2024 G. deductions Personal income tax on enterprise V local budget for comparison with 2023 G. decreased on 14 %). Global financial crises have a negative impact on investment activity. city-forming enterprises, dependent from prices on raw materials, depending on the state of hydrocarbon markets. For example, by the volume of investments V basic capital for check funds local budgets (table 3) V In the pre-crisis year of 2007, the cities of Norilsk,

Novy Urengoy and Noyabrsk were in the lead; in 2007–2009 volume investments V basic capital V G. New Urengoy decreased V 33 times, in G. Norilsk - V 6.8 times, V G. Noyabrsk — V 3 times.

An unfavorable price environment in global markets has developed in 2024 for Russian exporters: decrease average annual world prices on nickel relatively 2023 G. amounted to 29.8 %, on copper — 19.8 %; the growth rate of the average annual dollar exchange rate in 2023–2024 was 158.9%. However, less weakening course rubles produced height revenue ZF PJSC "MMC" Norilsk Nickel" (V rubles) and allowed improve financial and economic indicators of the company (in 2024, the

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growth in the volume of metallurgical production and production of finished products amounted to 16.2%).

**Table 3. Investments V basic capital for check funds municipal budgets of industrial cities of the Russian Arctic, million rubles**

| City               | 2007 G. | 2008 G. | 2009 G. | 2013 G. | 2015 d. | 2018 d. | 2020 g. | 2022 d. | 2024 d. |
|--------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Vorkuta            | 8.6     | 40.7    | 68.1    | 122.3   | 251.3   | 43.4    | 26.8    | 18.7    | 10.6    |
| Norilsk            | 1517.5  | 702.7   | 221.8   | 138.7   | 384.2   | 1015.7  | 643.2   | 957.4   | 1082.3  |
| Kirovsk            | 30.1    | 70.0    | 66.7    | 57.8    | 55.8    | 47.3    | 67.6    | 99.5    | 138.4   |
| Monchegorsk        | 76.5    | 123.1   | 254.3   | 52.6    | 35.1    | 106.9   | 24.0    | 56.4    | 77.1    |
| Olenegorsk         | 59.3    | 64.8    | 84.0    | 68.6    | 13.5    | 13.9    | 44.4    | 23.8    | 45.0    |
| Kovdorsky district | 26.6    | 44.4    | 15.3    | 66.6    | 94.0    | 4195.1  | 5.4     | 7.9     | 10.0    |
| Gubkinsky          | 221.8   | 41.5    | 128.6   | 116.6   | 113.7   | 62.5    | 792.0   | 1492.4  | 1145.4  |
| Muravlenko         | 215.8   | 717.8   | n.d.    | 748.9   | 584.7   | 18.4    | 41.6    | 99.5    | 507.0   |
| New Urengoy        | 745.4   | 583.8   | 22.5    | 333.6   | 267.4   | 150.8   | 230.4   | 406.8   | 440.3   |
| Noyabrsk           | 709.2   | 398.5   | 239.5   | 605.4   | 119.4   | 804.3   | 363.3   | 550.7   | 677.4   |

In general, the dynamics of investment in fixed capital in industrial cities Russian Arctic wavy, because significant the share in the structure of this indicator is formed by vertically integrated companies: leading positions by volume investments V basic capital the cities of Norilsk, Novy Urengoy, Noyabrsk, Kirovsk, and the Kovdorsky district occupy the Russian Arctic (Table 4). This situation is due to the varying degrees of intensity of the implementation of large investment projects by enterprises in industrial cities of the Russian Arctic. The main Part investments G. Norilsk — investments V development and modernization of industrial production and

environmental safety. In G. New Urengoy V investments V basic capital share fuel and energy complex makes up 79 %. In the city of Kirovsk, the size and dynamics of investments in fixed capital are determined by the Kirov branch of JSC Apatit and JSC SZFK: in 2024, the total volume of investments city-forming enterprises compiled 79.4 % from general the amount of investment in fixed assets. In the Kovdorsky District, 98% of investments are made up of the equity capital of EuroChem OJSC and Kovdorsky Mining and Processing Plant JSC. In the city of Olenegorsk, 90% of investments are made up of Alkon JSC.

**Table 4. Investments in fixed capital carried out by organizations located on territories industrial cities Russian Arctic (excluding small businesses), million rubles.**

| City               | 2009    | 2013    | 2014    | 2015     | 2020    | 2023    | 2024     |
|--------------------|---------|---------|---------|----------|---------|---------|----------|
| Vorkuta            | 2641.8  | 42749.5 | 22275.8 | 21703.6  | 7105.9  | 9060.8  | 8527.9   |
| Norilsk            | 16911.5 | 43053.9 | 44757.5 | 74394.3  | 57877.3 | 89079.2 | 153200.8 |
| Kirovsk            | 4868.8  | 17343.6 | 12674.6 | 13906.9  | 17682.6 | 20605.4 | 20498.0  |
| Monchegorsk        | 1092.5  | 1699.2  | 2929.9  | 6804.5   | 9511.3  | 8124.3  | 11250.4  |
| Olenegorsk         | 520.7   | 1911.2  | 2117.4  | 1357.1   | 3562.2  | 2062.9  | 3802.9   |
| Kovdorsky district | 854.7   | 4897.7  | 4200.1  | 4195.1   | 9363.0  | 14426.9 | 11718.0  |
| Gubkinsky          | 1991.5  | 2232.0  | 3297.4  | 2579.4   | 5097.2  | 5752.1  | 4840.7   |
| Muravlenko         | 1067.4  | 4017.9  | 1438.0  | 2563.4   | 1656.0  | 1276.7  | 2498.2   |
| New Urengoy        | 17477.3 | 61313.5 | 62780.4 | 100047.3 | 42292.8 | 37589.4 | 54255.8  |
| Noyabrsk           | 8838.4  | 11000.6 | 6280.1  | 7944.7   | 21416.6 | 30608.0 | 12958.2  |

Global crisis phenomena and dependence of production activities city-forming enterprises from external market conditions prices on raw materials and main export items have a negative impact (Table 5) on the situation in the labor markets of industrial cities in the Russian Arctic.

In in particular, V 2015–2016 gg. level registered unemployment V G. Gubkinsky increased on 71 %, G. Olenegorsk — on 53 %, G. Monchegorsk

— by 46%. In 2023–2024, the registered unemployment rate in Noyabrsk increased by 120%, in Kirovsk — by 42%. To prevent a critical unemployment situation during periods of crisis, regional executive authorities implemented additional measures aimed at decrease social tension on territorial markets labor. In among them were leading professional education located under threat of dismissal workers city-forming enterprises, organization

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|-----------------------|-------------------------|----------------|-----------------------|----------------|---------------------|----------------|
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|                       | <b>JIF</b>              | <b>= 1.500</b> | <b>SJIF (Morocco)</b> | <b>= 6.004</b> | <b>OAJI (USA)</b>   | <b>= 0.350</b> |

public works and temporary employment, development entrepreneurial initiatives. Timely implementation such measures allowed hold back

height registered unemployment and ultimately bring this indicator back to pre-crisis levels.

**Table 5. Level registered unemployment V industrial cities of the Russian Arctic, %**

| City               | 2007 | 2008 | 2009 | 2013 | 2014 | 2015 | 2020 | 2023 | 2024 |
|--------------------|------|------|------|------|------|------|------|------|------|
| Vorkuta            | 2.9  | 2.6  | 3.4  | 1.0  | 1.0  | 1.3  | 1.5  | 1.8  | 1.2  |
| Norilsk            | 2.4  | 1.4  | 1.8  | 0.9  | 0.9  | 0.8  | 0.6  | 1.7  | 1.4  |
| Kirovsk            | 5.1  | 3.7  | 4.8  | 2.4  | 3.1  | 4.4  | 2.4  | 2.6  | 1.7  |
| Monchegorsk        | 5.4  | 3.5  | 5.1  | 2.1  | 2.2  | 2.7  | 2.2  | 2.5  | 1.7  |
| Olenegorsk         | 2.7  | 2.8  | 4.3  | 1.4  | 1.6  | 1.9  | 1.7  | 2.3  | 1.9  |
| Kovdorsky district | 5.3  | 4.1  | 5.7  | 3.5  | 3.3  | 3.9  | 2.3  | 2.8  | 1.8  |
| Gubkinsky          | 1.2  | 0.7  | 1.2  | 0.5  | 0.4  | 0.6  | 0.4  | 1.0  | 0.4  |
| Muravlenko         | n.d. | 3.7  | 2.6  | 0.9  | 0.9  | 1.1  | 0.7  | 1.9  | 0.9  |
| New Urengoy        | 1.9  | n.d. | 1.9  | 0.4  | 0.4  | 0.6  | 0.3  | 1.9  | 0.3  |
| Noyabrsk           | 1.8  | 2.4  | 1.9  | 0.3  | 0.5  | 1.1  | 0.7  | 3.3  | 1.3  |

The unemployment situation in industrial cities of the Russian Arctic has been negatively impacted by the spread of the COVID-19 coronavirus infection: in connection with the introduction of restrictive measures aimed at to ensure the sanitary and epidemiological well-being of the population, and rules of conduct, mandatory for execution by the population and enterprises in connection with threat distribution infections, dynamics unemployment worsened. In all the cities under consideration, there was a significant increase in the level of registered unemployment (peaks growth came in handy on May, June 2024 g.). Nevertheless, under these conditions, the situation in the labor markets of industrial cities in the Russian Arctic in 2023 remained manageable due to the implementation of measures to create temporary jobs. In 2024, industrial cities in the Russian Arctic returned to pre-pandemic levels in terms of registered unemployment. Modern state majority objects industrial infrastructure cities Russian Arctic not allows create conditions for sustainable territorial socio-economic development, V including for comfortable life activity. The most important factor ensuring stability work enterprises and, hence, sustainable socio-economic development industrial cities Russian Arctic - infrastructure security, including transport availability and housing and communal services economy. So, typical for Russian Arctic shortage transport paths messages narrows choice profitable ways transportation cargo: limitations and low quality objects transport infrastructure actually stop the extensions production volumes because of colossal transportation costs. Length of automobile roads arctic regions of Russia is 0.6 % in total length highway networks Arctic zones Russian Federation (solid the coating has only 79.5 %), more half automobile roads general the use does not meet the technical and operational standards. By data Federal services state

statistics, share length automobile roads general use local values that do not meet the relevant standards, in cities such as: Kirovsk, makes up 43 % V general length such roads, V G. Olenegorsk - 54.3%, Monchegorsk - 78.6%, Vorkuta - 63.1 %, Norilsk - 30.1%, Novy Urengoy—0.6 %, Muravlenko—11 %, Gubkinsky—22.6 %, Noyabrsk—44.4 %. The most acute problem industrial cities Russian Arctic — provision of modern housing and communal infrastructure facilities. About lack of comfort urban spaces testify availability dilapidated and emergency housing, low level of social and engineering infrastructure, high wear municipal systems water supply and high the share of inefficient heat supply with low loads and remote fuel delivery. So, V connections with closing mines on territories G. Vorkuta share of empty housing compiled 40 % from general quantities municipal residential fund; at this annual expenses by payment for heating and content of empty housing fund make up 580 million rub. Wear engineering infrastructure (Usinsky water pipeline Vorkuta) makes up 95 %. In G. Physical deterioration in Norilsk housing accounts for 50%, under special control (according to the condition of load-bearing designs and soil) located 33 % residential houses. In G. Gubkinsky 43 % housing fund located V emergency condition.

The current state poses a threat to epidemiological security V conditions eternal permafrost systems — heat supplying, water supply and sewerage. In the city of Gubkinsky only 10% street and road networks provided downpour sewerage; more 30 % of the total length of main collectors in Norilsk are in dilapidated or emergency condition. In 2014–2024, the length of heating networks, those in need V replacement, V G. Kirovsk increased V 8.2 times (Table 6), in the city of Gubkinsky - 6, in the city of Novy Urengoy - 3, in the city of Olenegorsk - 1.7 times. Length needy V

|                       |                         |                |                       |                |                     |                |
|-----------------------|-------------------------|----------------|-----------------------|----------------|---------------------|----------------|
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replacement street plumbing networks V G. In Vorkuta it increased by 4 times, in Norilsk – by 2.3 times; the length of the area in need replacement street sewer

networks V G. Norilsk grew up V 6.4 times, in Novy Urengoy - 4.7 times.

**Table 6. Main indicators infrastructure provision of industrial cities Russian Arctic, 2018 and 2024 gg.**

| Single-industry town | Thermal And steam networks in two-pipe calculation, requiring replacement, km |         | Street water supply network in need replacement, km |         | Single extension street sewer network in need of replacement, km |         |
|----------------------|-------------------------------------------------------------------------------|---------|-----------------------------------------------------|---------|------------------------------------------------------------------|---------|
|                      | 2018                                                                          | 2024 g. | 2018 g.                                             | 2024 g. | 2018 g.                                                          | 2024 g. |
| Vorkuta              | 142.5                                                                         | 32.8    | 6.0                                                 | 23.7    | 20.0                                                             | 14.8    |
| Norilsk              | 40.2                                                                          | 53.9    | 11.2                                                | 4.1     | 6.5                                                              | 42.1    |
| Kirovsk              | 2.0                                                                           | 47.7    | 0.3                                                 | 0.0     | 0.1                                                              | 0.0     |
| Monchegorsk          | 54.0                                                                          | 44.5    | 9.4                                                 | 20.9    | 0.2                                                              | 6.8     |
| Olenegorsk           | 9.7                                                                           | 15.0    | 5.4                                                 | 3.7     | n.d.                                                             | 0.8     |
| Kovdorsky district   | 20.9                                                                          | 21.7    | 4.8                                                 | 0.8     | 0.9                                                              | 1.5     |
| Gubkinsky            | 2.3                                                                           | 24.4    | 0.5                                                 | 4.2     | 0.5                                                              | 0.6     |
| Muravlenko           | 58.4                                                                          | 22.9    | 27.5                                                | 3.0     | 10.5                                                             | 7.0     |
| New Urengoy          | 29.0                                                                          | 94.9    | 2.6                                                 | 1.1     | 1.0                                                              | 0.7     |
| Noyabrsk             | 148.0                                                                         | 178.4   | 36.3                                                | 7.8     | n. d.                                                            | 12.5    |

In G. Monchegorsk wear to 100 % have 72 % water supply networks (there is a high rate of wear and tear of water supply inlets to residential buildings and educational facilities and health care); is relevant problem uninterruptible providing consumers with thermal energy (the heat supply system is characterized by high degree wear and tear main funds, large losses energy and water). Scheme power supply cities initially was built without taking into account future development and has a low degree of reliability (capacity of transformer substations and network throughput built between 1938 and 1965 (These are designed only for housing stock not equipped with electric stoves.) Another problem in the socio-economic development of industrial cities in the Russian Arctic is related to the environmental threat to public health and the need to eliminate accumulated environmental damage. and environmental restrictions in the development of industrial activities. Significant influence on ecosystems mechanical violations vegetation, soils, permafrost soils, emissions V atmosphere toxic the mining industry produces compounds. Surface waters are polluted: the main reservoirs of pollutants are small lakes (in areas near mines, water bodies are characterized by high values of total mineralization, content organic substances). So, analysis The peculiarities of accumulation of heavy metals in fish of small lakes in the Murmansk region show the negative consequences of aerotechnogenic pollution of water bodies of JSC Kola MMC (natural fish populations are susceptible to the toxic effects of heavy metals), associated with the danger of reducing biological diversity ichthyophase. Significant

seasonal fluctuations contents nickel V water caused by the fact that, concentrating V snowy cover V flow long-term winter period, polymetallic dust gets into the atmosphere in increased quantities with the onset of snowmelt V reservoirs G. Monchegorsk. In result dust and gas emissions and discharges with wastewater waters plant Severonikel polluting substances enter the lakes Monche (object of category I for domestic and drinking water use) and Imandra (object of category II for cultural and domestic water use).

A problematic issue in the field of environmental protection — appeal waste management: virtually all types of industrial activity in tundra conditions and forest-tundra produce education not capable to self-restoration of vast areas. Before 25% formative health human factors have to on environmental issues, while their contribution to the formation of public health problems becomes more weighty, When speech is coming O the population of single-industry towns in the Russian Arctic living in extreme natural conditions. Murmansk region — one from main hotbeds of environmental tension in the Russian Arctic: a critical environmental situation not only in single-industry towns, but also in adjacent territories (agglomerations) produces high rates of 95 classes of environmentally dependent diseases (diseases organs breathing, skin and subcutaneous fiber, congenital anomalies, malignant neoplasms, diseases of the blood and hematopoietic organs). Among polluting atmosphere substances — oxide nitrogen, formaldehyde, phenol, lead, nickel, dioxide sulfur, benzene, benzopyrene, fluorides, inorganic dust, etc. The largest volume of polluting emissions into the

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atmosphere occurs in the Pechenga region (JSC Kola MMC). Industrial specialization Apatity -Kirov agglomeration (KF JSC Apatit) produces the prevalence of diseases of the circulatory system (here level morbidity By such class reasons V 1.6 times higher, than in the central zone), diseases of the musculoskeletal and genitourinary systems (2.6 times), diseases of the eyes and adnexa (2.7 times). In the city of Monchegorsk (JSC Kola MMC), the mortality rate of the male population from diseases of the circulatory system is 35% higher than the average by region And V 1.5 times above the Russian average level.

In conclusion, we note the current context of the dynamics and prospects for the development of the Russian Arctic in the context of achieving strategic development goals Arctic zones Russian Federation means scale tasks, the solution of which consists of, Firstly, V updating risks and opportunities greening and social responsibility of vertically integrated companies, production branches which lead my activity V in the Arctic, secondly, V supporting roles states how regulator conditions for the development of business initiatives. In this regard, promising development opportunities industrial cities Russian Arctic determine involvement of vertically integrated companies in socio-economic development planning cities presence their own production divisions and increasing the effectiveness of government instruments to support the development of such cities.

How it was noted us V previously V this chapter, For Murmansk In the Murmansk region, which has seven single-industry municipalities within its territory, the development of single-industry towns is a pressing issue. As Arctic territories, single-industry towns in the Murmansk region, in addition to the risks inherent in all single-industry municipalities in the country, are characterized by complex situation V sphere life activities, related to climatic conditions, infrastructure and transport and logistics

specifics, what causes special interest for analysis socio-economic environment their development, in in many ways dependent from functioning city-forming enterprises.

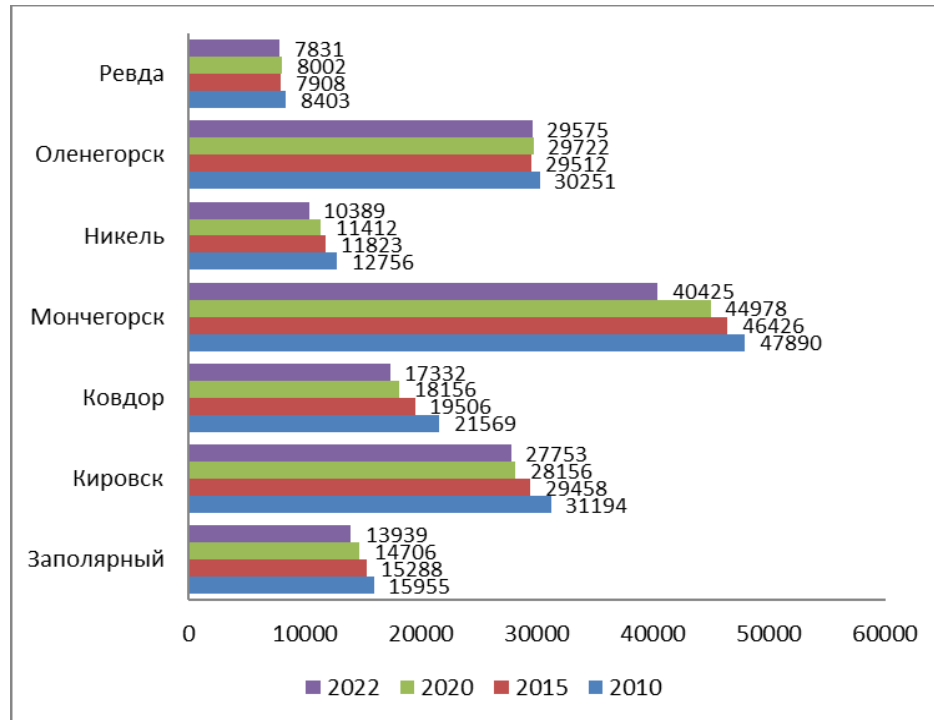
Single-industry towns in the Murmansk region have a certain influence on the overall situation that is developing V region. In them lives 133 228 people (on 1 January 2024 G.), or 20 % of the region's total population. City-forming enterprises single-industry towns provide over 75% of industrial production, and about 15% of the consolidated revenue regional budget also is being formed in single-industry towns. Single-industry towns of the Murmansk region attributed to first and second categories of the list of single-industry municipalities. In first list category with most complex socio-economic position are included Kirovsk, Kovdor And Revda, ko second attributed cities Monchegorsk, Nickel, Zapolyarny, Olenegorsk, where there are risks of deterioration of the socio-economic situation.

To identify problems and opportunities for the development of municipalities, we will conduct an analysis of their provision with investment and budgetary funds and human resources.

Single-industry towns Murmansk region — this by advantage small cities with number to 40 thousand person Demographic situation in them fundamentally not changes, that there is remains complex and in some places critical, for example, V Revda has a population of less than 10 thousand people.

During the study period (from 2014 to 2024), the permanent population decreased in all municipalities (Figure 1). The maximum decrease numbers V latest two years recorded in Revda (with 8002 person V 2022 G. to 7831 person V 2024 G.) and Nikel (with 11 412 person V 2022 year before 9858 people in 2024 G.).

|                       |                         |                |                       |                |                     |                |
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|                       |                         |                |                       |                |                     |                |



**Figure 1. Dynamics numbers population single-industry towns Murmansk region**  
**Source: Single-profile education Russian Federation (monotowns).**

Reasons abbreviations population are natural Population decline and outflow (Table 7). Natural population decline in single-industry towns averages approximately 130 people annually, while migration rates range from -325 to +181 people.

It can be assumed that an additional circumstance causing decrease numbers population, is resettlement permanent residents upon reaching retirement age in regions with more favorable conditions conditions accommodation. In 2023 G. essential the introduction of restrictive measures aimed at preventing the spread of the new coronavirus infection, for example, had an impact on migration

flows. V Kirovsk was recorded uncharacteristic for him migration population growth.

It should be noted that Kirovsk, although by the end of 2024 it was included in the top ten of the TOP-10 best single-industry towns that demonstrated a high level of socio-economic development, is also characterized by a long-term trend reductions residents. With 2014 G. his number population decreased by 14%. This example shows that the socio-economic development of a city does not always have a significant impact on population dynamics.

**Table 7. Indicators migrations and natural growth (loss) in single-industry towns of the Murmansk region.**

| Single-industry town | Level migrations, person. |      |      |       | Natural increase (decrease) in population, people |      |      |       |
|----------------------|---------------------------|------|------|-------|---------------------------------------------------|------|------|-------|
|                      | 2015                      | 2020 | 2023 | 2024  | 2015                                              | 2020 | 2023 | 2024  |
| Zapolyarny           | -142                      | -108 | -328 | n. d. | 8                                                 | 31   | -43  | n. d. |
| Kirovsk              | -183                      | -183 | 181  | -45   | -82                                               | -100 | -238 | -288  |
| Cowdor               | -321                      | -271 | -285 | -179  | -54                                               | -73  | -149 | -206  |
| Monchegorsk          | 116                       | -67  | -273 | 139   | -98                                               | -154 | -293 | -447  |
| Nickel               | n. e.                     | -178 | -203 | n. e. | n. e.                                             | -38  | -55  | n. e. |
| Olenegorsk           | -266                      | 185  | -60  | 214   | 7                                                 | 12   | -104 | -186  |
| Revda                | -15                       | -75  | -40  | -3    | 10                                                | -11  | -37  | -91   |

Despite the government measures taken (for example, in Kirovsk, the Strategy for the Development of the City until 2035 was adopted, which is an integral part of the Development Strategy of the Murmansk Region and the “Living in the

North” plan), aimed at “retaining” the population in the North, the migration balance remains negative, which is a negative factor for socio-economic development and, above all, the formation of labor potential in single-industry towns. More Togo, pace

## Impact Factor:

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reductions numbers population younger of working age and able-bodied age V studied cities exceeds The average figure for the Murmansk region. Migration flows mostly involve people of working age, which affects the age and gender structure of the population of single-industry towns. How it was noted us higher, single-industry towns Murmansk region very heterogeneous with points vision their investment opportunities. Volumes investments in single-industry towns of the Murmansk region region in 2024 fluctuated from 47 million rubles in Revda Up to 20 billion rubles in Kirovsk. The largest per capita investment volume is in Monchegorsk and Nikel, and

Olenegorsk. Maximum volume investments on soul population V 2024 G., how and V more early years, was achieved V Monchegorsk — 263 thousand rubles, the lowest level of investment per capita, which is several times lower than in the rest single-industry towns, observed V Kovdor on level 2 thousand rub. At In this regard, one of the highest and sharpest rates of investment growth (83%) in 2024 was registered in Olenegorsk, where JSC Olkon invested more than in 2024 3 billion rub. By directions support natural raw materials bases and updates parka equipment mining and transport and factory complex.

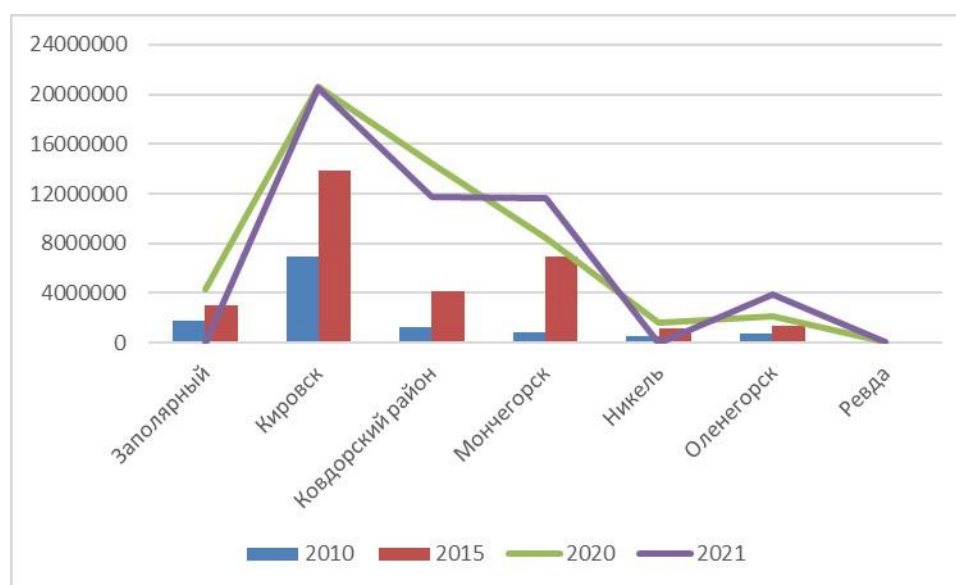


Figure 2. Level investments V single-industry towns in total, thousand rub.

An analysis of investment resources from the perspective of sources of income showed a sharp change in the situation in 2024, when the pandemic began and various anti-epidemic measures and government support measures were adopted.

If by 2024 the level of investment in fixed capital in all municipalities for check funds municipal budget had descending trend with fluctuations V separate years, that starting with 2024 G. observed significant increase, although share this source V in general volume investments remain insignificant — less 1 %. The largest specific weight occupy investment resources, received from located on territories single-industry towns of organizations. Their level V single-industry towns Murmansk region reaches over 90 %.

One of the key indicators reflecting the well-being of residents of a particular territories, is the level of budgetary provision on per capita. In terms of budgetary security, three single-industry towns in the Murmansk region (Kirovsk, Monchegorsk, Revda) are subsidized practically every year researched period (exception Revda V 2019 G., when surplus budget amounted to 991 thousand rub.) and four

(Zapolyarny, Kovdor, Nickel, Olenegorsk) will have a budget surplus from 2024 and, accordingly, the potential to invest additional funds in development. All single-industry towns are clearly showing a trend toward a declining share of tax revenues and increasing dependence on federal financial assistance. Decrease tax budget income this is primarily due to a reduction in the most profitable tax for single-industry towns—the personal income tax. The share of gratuitous receipts in municipal budgets is steadily increasing practically V each single-industry town and varies from 46 to 65%. The highest height gratuitous receipts celebrated V Olenegorsk - in 2024 by 300 million rubles. The noticeable increase in gratuitous receipts during the coronavirus crisis year was due to the adoption of a number of measures that allowed them to quickly react on established situation and accept economic support measures. In summary, we can note that single-industry towns in the Murmansk Region are territories with signs of social and economic contradictions, which can have a significant destructive impact on their development and require a special, differentiated approach to management. The analyzed statistical indicators

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highlight the existing development challenges facing single-industry towns in the Murmansk Region, the most pressing of which is the limited economic base of municipalities. And decrease human potential, complicating comprehensive balanced development of cities.

The current socioeconomic development of single-industry towns in the North continues to exhibit the negative trends that emerged in the early 2000s: population outflow; declining living standards and quality of life; rising unemployment; low economic diversification and worsening social problems; and deteriorating environmental conditions. However, the expanded scope for government influence on single-industry town development, the operation of specialized funds and development programs, is being utilized far from evenly, exacerbating the disparities between relatively prosperous and disadvantaged areas.

In such conditions, it becomes important to conduct a “primary” comprehensive assessment of the

development of a single-industry town, which allows identifying problem areas, determine the position cities among others cities and designate the main direction for development (Fig. 3.4), and then develop individual approaches with taking into account socio-economic and geographical features to management and development single-profile education. In framework proposed conceptual models assessments development single-industry towns supposed determine development options based on four main parameters - socio- economic status, population size, geographic location (remoteness), transport accessibility (road, rail, air, water, etc.). The three alternative development options presented are based on the assumptions of varying degrees of functioning of the city-forming enterprises. Correct choice Togo or other this option will help determine future prospects and reduce the risks of reaching the point of no return, when a decision is required to support the development of a single-industry education or its liquidation.



Figure 3. Conceptual model assessments development single-industry towns.

### Conclusion

In quality general goals development single-industry towns Murmansk region on perspective Can name diversification economic a base,

the achievement of which will require the implementation of investment programs for the introduction of new technologies, the development of small and medium-sized innovative businesses, the

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relief of social tensions, and the creation of a unified recreational network.

For preservation stable socio-economic situations In single-industry towns, it is necessary to continue the process of signing agreements between regional authorities and city-forming enterprises, that is, it is necessary to achieve a balance in the triad "population - city-forming enterprise - government", which implies ensuring the principles of fair social provision, economic efficiency and environmental safety in the territory of all single-industry towns in the Murmansk region without exception.

For solutions demographic problems necessary strengthen work on attraction young specialists, continue development everyone levels of education taking into account professional orientation students on the activities of the city-forming enterprises, raise comfort accommodation V cities. Important task

everyone single-industry towns Murmansk region is development of social infrastructure and formation comfortable urban environment (construction children's gardens, sports facilities, capital school renovation, modernization urban places rest and etc.).

It is also necessary to increase support for small and medium-sized businesses that provide additional workers places V single-industry towns, V volume including within the framework of the preferential regime of the AZ, and to expand the range of needs of residents met.

It can be assumed that during the current crisis the differentiation of socio-economic provisions single-industry towns will continue to intensify and will require new "recipes" regional politicians for complex development of territories in line with complex changing conditions, taking into account the activities of city-forming enterprises.

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