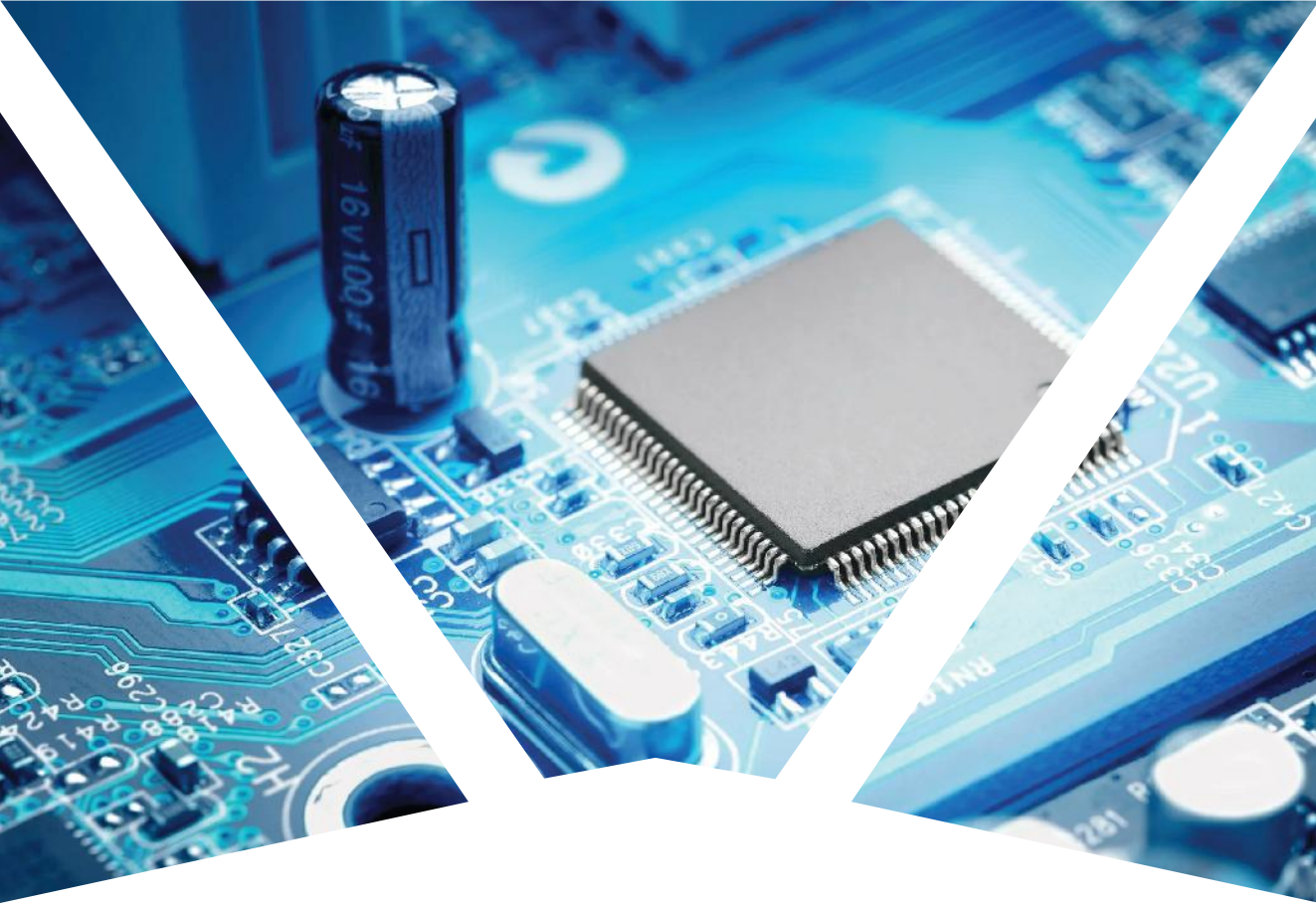


Instrumentation and electronics in the Republic of Belarus

NATIONAL AGENCY OF INVESTMENT AND PRIVATIZATION
REPUBLIC OF BELARUS

1. Current state of the industry

1.1 Key industry indicators

The instrument and electronics industry is a high-tech and capital-intensive sector characterized by high innovation and intellectual potential. It covers the production of computer, electronic and optical equipment, as well as the production of electrical equipment.

Content includes:
• manufacturing of computers, peripheral, electronic and optical equipment, and components for this equipment;
• manufacture of electronic household appliances, devices and instruments for measurement, control, testing, navigation; manufacture of watches, magnetic and optical data carriers;
• production of X-ray, electro-medical and electrotherapy equipment;
• production of components and spare parts for these products.

According to the research of the Instrument Engineering Association, " ... the computer, electronic and optical equipment industry in the Republic of Belarus in 2011-2019 grew 3.3 times faster (by 6.6% per year) than the industrial production industry (2%); the share of innovative products in the industry is twice as high as the average indicators for the economy, and the share of innovative enterprises in the - three times; the total volume of exports of the industry, according to statistics, amounted to about $ 500 million..."

In the Republic of Belarus, the instrument and electronics industry are represented by strong companies that occupy a leading position in the world market in their niches. The results of the activities of Belarusian companies are widely used in the world. For example, the company "Regula" produces devices for verifying the authenticity of passports, which are delivered to more than 130 countries around the world; with the help of equipment created by the company "IZOVAK", spraying is done for the glasses of iPhones and iPads; wires in Boeing and Airbus aircraft are marked with lasers produced by "Solar Laser Systems".

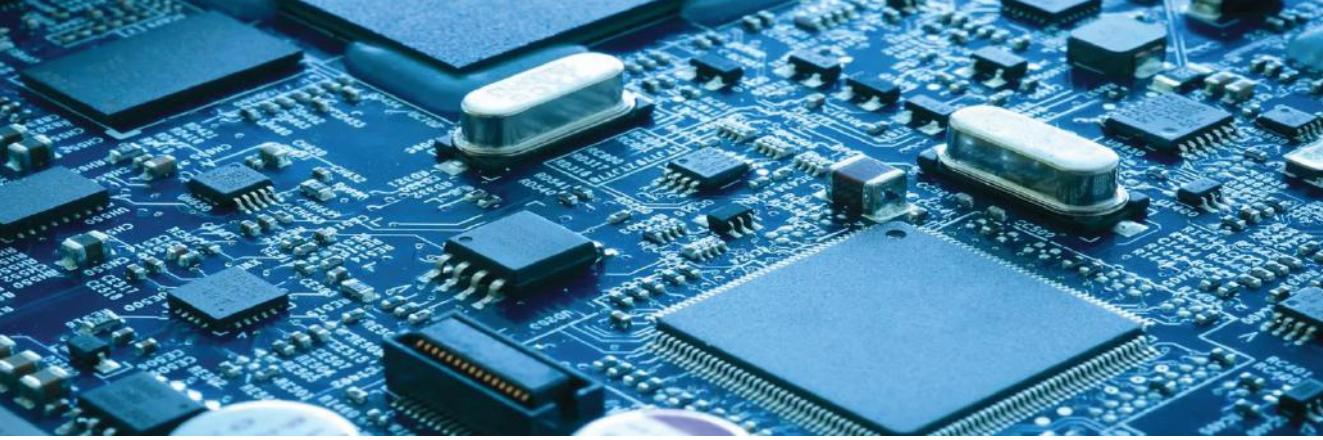
According to the National Statistical Committee, in 2021 there were only 794 enterprises engaged in the field of instrumentation and electronics in Belarus. Of these, 315 companies worked in the computer, electrical and optical equipment manufacturing sector, while 479 companies worked in the electrical equipment manufacturing sector.

On average, 95.3% of the industry's enterprises are private (95% and 95.6%, respectively, by sector). Of these, 36.7% and 29.6%, respectively, in terms of production volume are small and medium-sized enterprises.

In 2021, the industry employed a total of more than 51 thousand people. The average salary of industry employees in 2021 was 600 US dollars. According to research conducted by the Instrument Engineering Association, 42% of employees earn between $ 1,000 and $ 2,000 per month. Employees who are engaged in research and development have the highest income: $ 2000-3000.

Key industry indicators

Indicators	2016	2017	2018	2019	2020	CAGR
Number of organizations, units	721	750	748	752	794	1.95%
Industrial production million USD	1787.94	2102.98	2167.30	2307.45	2168.02	3.93%
Industry share in total industrial production, percentage	4.40	4.30	4.00	4.20	4.50	
Average number of employees, thousand people	53.10	52.60	51.70	51.00	48.40	-1.84%
Revenue from sales of products, goods, works and services, mln USD	1436.91	1692.20	1780.93	1761.98	1733.50	3.82%
Profit from sales, million USD	215.64	239.03	217.55	213.06	259.37	3.76%
Net profit, mln USD	123.67	195.61	101.54	141.48	169.17	6.47%
Sales margin, %	8.61	11.56	5.70	8.03	9.76	



For 2020, the key industry indicators in dollar terms were (with the official average annual exchange rate of the Belarusian ruble to the dollar — 2.4390):
1) industrial production volume: 2168.02 million US dollars;
2) profit from sales of products: 259.37 million US dollars;
3) net profit: 169.17 US $ 169.17 million US dollars;
4) return on sales: 9.76%

Considering the strong scientific school of the sector, a well-developed network of research institutes, conditions for investment and innovation activities, as well as a significant export component, this sector is quite promising for foreign direct investment.

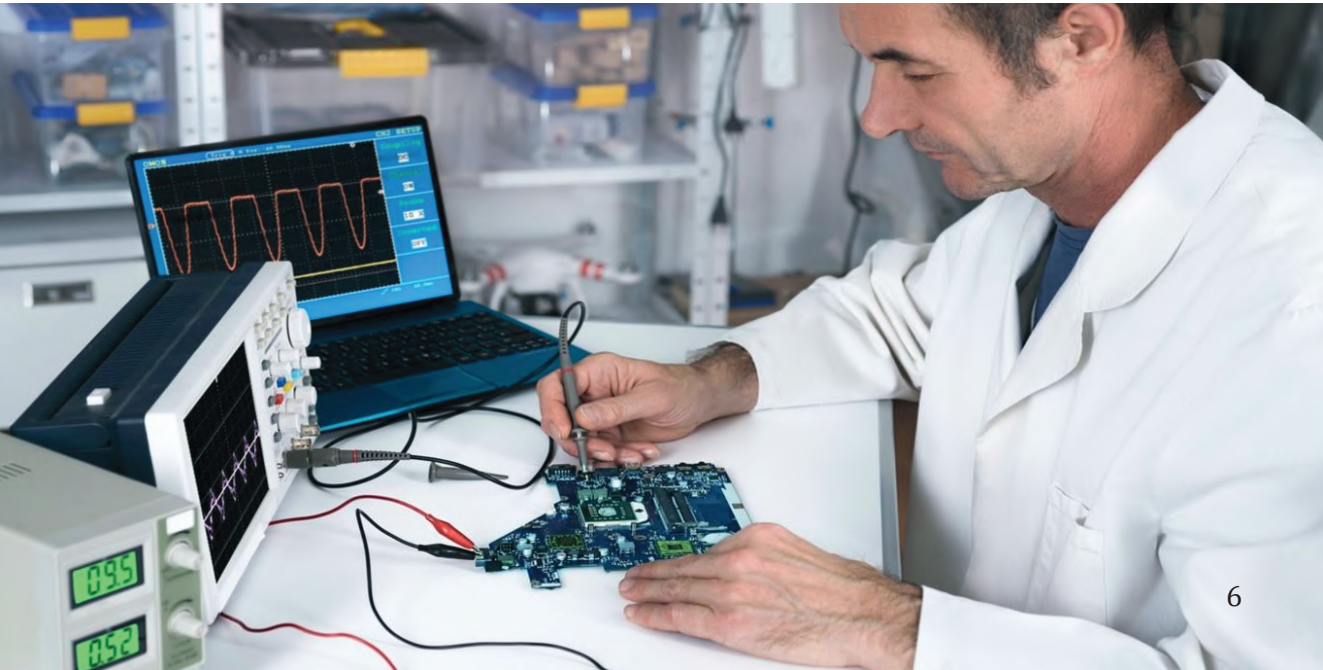
1.2 Legal framework

The industrial development strategy provides for the transformation of domestic production into a competitive complex that responds quickly and flexibly to the global situation and the needs of the domestic market.

According to the Program of Social and Economic Development of the Republic of Belarus for 2021-2025, approved by Decree of the President of the Republic of Belarus No. 292 of July 29, 2021, Belarus relies on the accelerated development of high-tech industries, including in optics and electronics.

In order to increase the competitiveness of radio-electronic products, increase exports, strengthen the position of industry enterprises in the market, create conditions for their technical re-equipment, develop new types of instrument-making products, and reduce the need for importing radio-electronics and instrument-making products, state, regional and sectoral scientific and technical programs for 2021-2025 are being implemented in the republic: "Digital technologies and robotic complexes"; "Intelligent Instrument Engineering", "Innovative Mechanical Engineering and Machine-building Technologies", "Micro - and Nanoelectronics Industry", "National standards and high-tech research equipment", "Innovative Materials and Technologies", "Cybersecurity", etc.

The State Program of Innovative Development of the Republic of Belarus for 2021-2025, approved by Decree of the President of the Republic of Belarus No. 348 of September 15, 2021, also operates in the country. According to this program, projects for the formation of a cluster of electric transport industries for various purposes will be implemented in the framework of the direction "Mechanical Engineering, Machine-building Technologies, instrumentation and innovative materials" development of a cluster of innovative instruments making, formation of a cluster of high-tech medical equipment production.



1.3 Research base

Belarus is one of the countries with a high level of scientific and technological development. This status is confirmed by the country's high positions in the Global Innovation Index (Global Innovation Index — 32.6: 62nd place out of 132 countries). Thus, Belarus ranks 38th out of 132 countries in the Human capital and Research sub-index, 37th in the Knowledge and technological output sub – index, and 11th in the world in the training of specialists in science and technology. The overall position of Belarus in this rating remains at an average level due to the lack of data on a number of parameters and a low rating for the Institutions subindex-85.

In 2020, 25.6 thousand people were employed in the research and development (R & D) industry, which is 0.6% of the total number of employees of organizations in the country. Of this number, 16.7 thousand people are directly involved in research work.

Research activities in Belarus are mainly concentrated in large organizations. They account for 89.9% of all developments and 92.9% of all research. Geographically, most of the industry's employees work in Minsk – 18.8 thousand employees, or more than 70% of their total number. Outside of the capital, the largest number of scientists is concentrated in Minsk (3,047 people) and Gomel regions (2,077 people). Other regions account for less than 8.7%.

The majority of researchers in Belarus are engaged in technical and natural sciences – 79%. Least of all – in agricultural (5.6%), medical (4.8%), humanitarian (3.7%) research.

The National Academy of Sciences of the Republic of Belarus is a large research and production corporation that unites more than 110 organizations. Among them are scientific institutions, laboratory facilities, production associations, agricultural enterprises, and social infrastructure facilities.

The Department of Physical and Technical Sciences of the National Academy of Sciences coordinates scientific research and practical use of its results in the most important areas of scientific support for mechanical engineering and energy, agro-industrial complex and construction, radio engineering, electronic, chemical, medical and processing industries, and environmental protection.

Currently, the Department includes the state scientific and production association, three state scientific institutions, two scientific and engineering and one scientific and production republican enterprises.

The department unites 21 academicians and 23 corresponding members. The Department's organizations employ about 1,310 people, including 860 researchers. Among them — 82 doctors of sciences and 212 candidates of sciences.

1.4 Human resources support

Universities. In 2020, the total number of students of higher education institutions in the profile of engineering and technology was 54.9 thousand people (out of 254.4 – the total number of students), of which 12.7 thousand people were accepted in 2020 thousand (58.3-total new students in the country), the graduation of young specialists in 2020 was 10.3 thousand people (total graduates – 54.6).

Postgraduate studies: a total of 5,093 people, 912 of them are in technical sciences, only 1,272 new students in 202, 189 of them are in technical sciences, only 848 graduates, 192 of them are in technical sciences.

Doctoral studies: a total of 705, of which 88 are technical, only 219 are accepted, 27 are technical, 89 are graduated, and 14 are technical.

Engineering specialists are trained both in technical universities of Belarus and in multidisciplinary ones.

Belarusian National Technical University

Brest State Technical University

Out of 50 higher educational institutions in the country, there are 6 universities of technical orientation, 6 more multidisciplinary universities also train specialists in the field of engineering and technology.

Technical universities:
1. Belarusian National Technical University (BNTU)
2. Brest State Technical University (BrSTU)
3. Belarusian State University of Informatics and Radioelectronics (BSUIR)
4. Belarusian State Technological University (BSTU)
5. Vitebsk State Technological University (VSTU)
6. Gomel State Technical University named after P.O.Sukhoi (GSTU)

Multidisciplinary universities:
1.Belarusian State University
2. Gomel State University
3. Grodno State University
4. Polotsk State University
5. Baranovichi State University
6. Polesie State University

The leading technical university in the country is the Belarusian National Technical University, which will celebrate its 100th anniversary in 2020. Over the entire history, almost 230 thousand specialists have become certified graduates.

The Belarusian National Technical University consists of 17 faculties, including instrument engineering; 9 colleges; 6 institutes; 32 research laboratories; a science and technology park; 20 innovative enterprises; a startup school and FABLAB; and a pilot plant. Today, more than 20 thousand students' study at BNTU.

Secondary educational institutions. Of the 223 secondary specialized institutions in Belarus, about 30 train specialists in the field of engineering and technology, and each regional center of the Republic of Belarus has a polytechnic college.
In the 2020/2021 academic year, only 39.7 thousand people were trained in the profile of engineering and technology (out of 110.4 in total in the country), new students were accepted – 12.3 (out of 37.1), graduation – 10.1 out of 33.4.

Belarusian State University

Belarusian State University of Informatics and Radioelectronics

1.5 Technologies

The main technologies of the industry's enterprises are concentrated in the radio engineering, radio-electronic, electrical and opto-mechanical industries. Actively developing such areas as:

1. optical-mechanical, control-measuring and assembly equipment for microelectronics;

2. production of analog and digital integrated circuits and other microelectronic components, discrete semiconductor devices, information display devices, medical devices and industrial electronics in general, special equipment operating in extreme conditions;

3. production of power distribution transformers and various protective devices, solid-state laser systems;

4. integrated information-reference and control systems for various purposes, automatic control systems for robotic complexes;

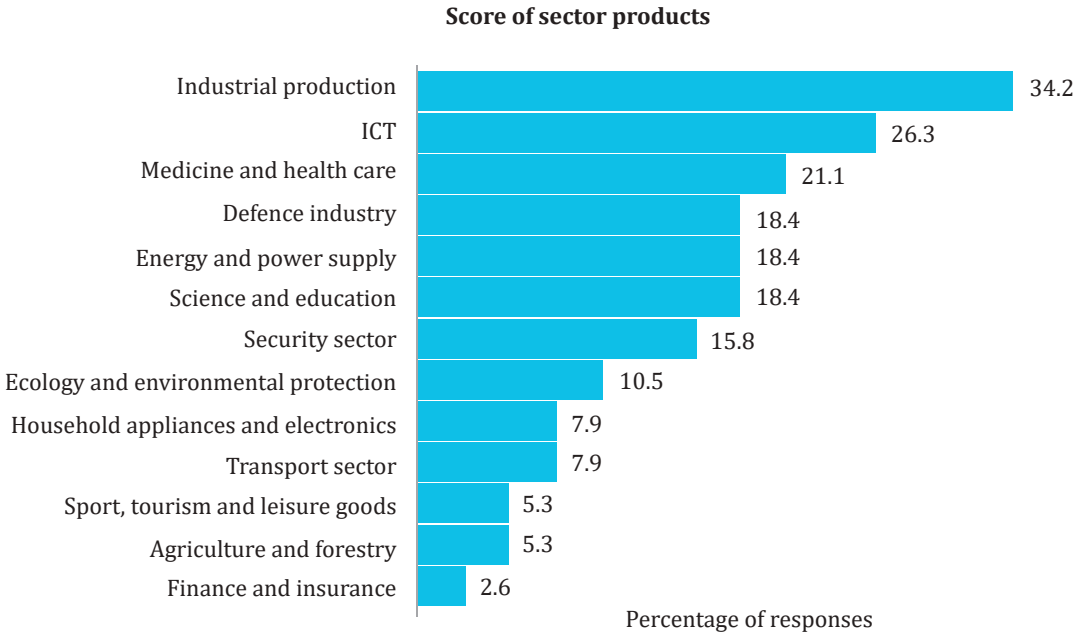
5. hardware and software complexes and technical means of communication and data transmission, electronic control units for complex equipment;

6. high-tech optoelectronic products for wide and special applications;

7. expert products for verifying the authenticity of documents, banknotes and securities;

8. facilities and devices for radiation monitoring, spectral analysis, nuclear measurements, and radio navigation.

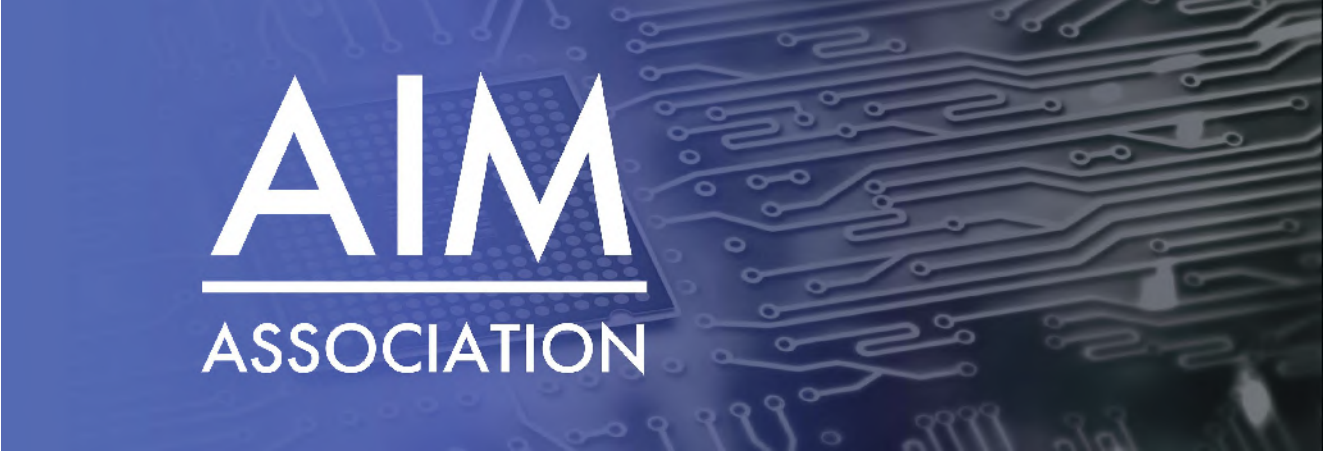
According to research conducted by the Instrument Manufacturing Association in collaboration with the Center for Economic Research BEROC and Cluster Competitiveness Group, the main areas of consumption of instrument and electronics products are shown in the diagram (respondents ' answers to multiple-choice questions.



Most of the products produced are created for the B2B and B2G sectors. For the B2B market, the main demand is for equipment and devices for industrial production, ICT and communications, medicine and healthcare. For consumers directly, products are produced only in the direction of sports, tourism and recreation.

1.6 Industrial and territorial clusters

In January 2014, the Concept of formation and Development of innovative and industrial clusters was approved in the Republic of Belarus.



In 2017, seven commercial organizations engaged in the development and production of innovative high-tech instrument-making products initiated the creation of a specialized association-the Innovative Instrument-Making Association (hereinafter referred to as the Association). **An instrument cluster of the city of Minsk and the Minsk region** has been created on the basis of the Association. The main activity of the Association's members is industrial activity in the field of instrument engineering, related to the commercialization of innovative technologies and the production of high-tech products. Today, the Association actively develops the instrument-making industry in cooperation with the State Committee for Science and Technology, the Ministry of Economy and the Hi-Tech Park, holds public events and start-up competitions.

In order to coordinate the efforts of scientists from Belarusian universities, academic institutes, design centers and enterprises in our country, an innovative industrial **cluster "Micro -, opto-, and MICROWAVE Electronics** was created and actively operates in 2017 at the initiative of the leadership of the National Academy of Sciences. It consists of JSC «INTEGRAL» and JSC «Minsk Research Institute of Radio Materials», aimed at creating an electronic component base, as well as JSC «Planar», working in the field of precision electronic engineering (technological, assembly and control and measurement equipment for the production of ECB).

An innovation and industrial cluster in the electric transport industry has also been formed. Basic organization: State Institution "United Institute of Mechanical Engineering of the National Academy of Sciences of Belarus"; participants: JSC "MAZ", JSC "BELAZ", JSC "MTZ", JSC "Belkommunmash", JSC "Mogilevliftmash", JSC "Izmeritel", State Institution "United Institute of Mechanical Engineering of the National Academy of Sciences of Belarus", UO "BNTU", The First Universal Carrier " ETON-ELTRANS, Keiji Impex LLC, research structures of the National Academy of Sciences and BNTU, as well as a number of small private firms specializing in work in this field. Cluster members ensure the production of electric vehicles and their components, as well as the coordination of effective cooperation in the scientific, technical, educational and industrial spheres.

2. Production infrastructure

2.1 Availability of industrial sites, buildings, structures, offices

In order to accelerate the innovative development of enterprises in the industry and improve the investment climate, industrial sites Veliky Kamen and Minsk City Technopark have been created in Minsk and the Minsk region.

The Great Stone. It provides companies with a unique platform with access to ready-made production, engineering, transport, customs and socio-administrative infrastructure, significant tax preferences, as well as a special business service system. Priority areas are electronics and telecommunications, manufacturing of medical devices.

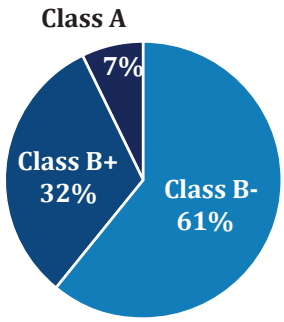
Minsk City Technopark. The main task of the techno park is to systematically support enterprises in implementing innovative projects by providing benefits and preferences provided for by law, creating favorable conditions for doing business in the high-tech sector, and providing support to start-up innovative companies. The main directions are microelectronics, medical equipment and optoelectronic systems.

Great Stone China-Belarus industrial park

Minsk City Technopark

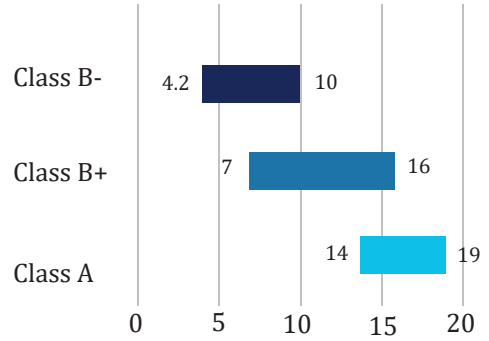
Commercial real estate (offices, buildings, structures)

Supply on the office market, sq.m.



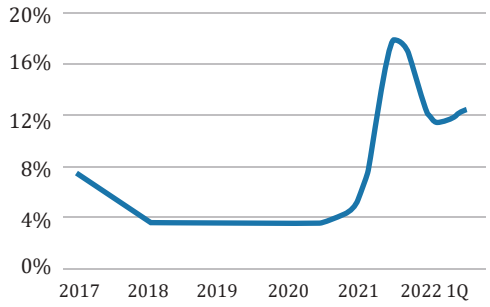
The classified market of commercial offices in Minsk is almost 1015 thousand sq. m. of rental space (GLA). The main volume of the offer, over 615 thousand m2, falls on the class "B-". The class of offices "B+" has about 325 thousand m2 of space. Class A offices are the least represented. It includes only 4 office facilities with a total rental area of 72 thousand sq. m.

Ranges of rates by class at the moment, Euro per sq. m. per month.



Rental rates in terms of euro have a steady downward trend. There is a high probability that the rental rates for offices in euro terms in the market as a whole will be lower by 30-35% to the level of December 2021-January 2022.

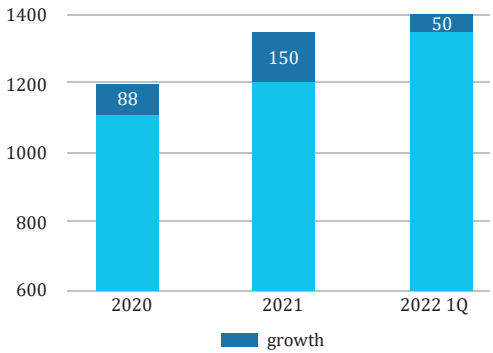
Percentage of vacant spaces in the office segment of commercial real estate



Since the beginning of 2022, there has been a slowdown in the dynamics of vacant space, since during the first quarter, both the release of offices and their absorption were mainly rotational in nature and could not have a significant impact on the current trend.

The supply on the warehouse market increased significantly in 2021, when almost 150 thousand sq. m. of new warehouses were put into operation in Minsk, its suburbs and the territories neighbouring to the capital agglomeration. This is one of the best commissioning volumes in the history of the development of the modern warehouse logistics market, the beginning of which dates back to 2008 (since the implementation of the Logistics System Development Program of the Republic of Belarus for the period 2008-2015).

Dynamics of the growth of the supply of spaces in modern warehouses (logistics complexes), thousand sq. m.



Dynamics of rental rates for high-quality modern warehouses in Minsk and the suburbs, in euros per 1 sq. m.

In a situation of consistently high demand, typical for 2021 and the first quarter of 2022, rental rates, even denominated in euros, remained at the same level. In the warehouse segment, there were significantly fewer appeals to owners with questions of revising rates and/or fixing the exchange rate at a certain level, which was typical for office and retail segments. Therefore, mainly in the market, the rates at the end of the first quarter of 2022 remained at a comparable level with the rates at the end of 2021. There will be no significant reduction in rates in the warehouse segment in the near future. It is predicted that the possible decrease will be a maximum of 8-10%.

3. Market Overview

3.1 Mainstreams

According to Belstat data, the electronics and instrumentation industry accounts for 4-4. 5% of the total industrial output. At the same time, the average annual growth rate over the past 5 years is 3.93%. Analysts of the Innovative Instrument Engineering Association estimate the industry's contribution to GDP at 1.5-2%, linking it to the fact that the High-Tech Park (HTP) indicators are growing, since companies in the industry have been able to become HTP residents since 2018.

The instrument and electronics industry as a whole exceeds the growth rate of the industry. The average annual growth rate of the latter over the past 5 years is 3.36%.

An even more important indicator is innovation. In the instrument industry, their level is significantly higher than in the economy as a whole. According to Belstat data, the share of innovative products in the computer, electronic and optical equipment manufacturing sector exceeded the average economic indicators for the last 5 years from 2 to 3.7 times, and in the electrical equipment manufacturing sector-from 1.8 to 2.4 times.

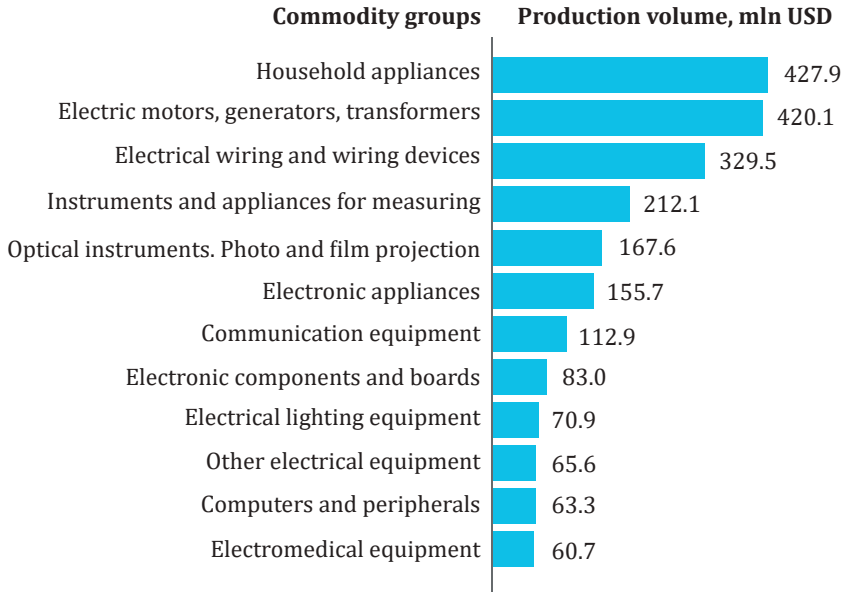
According to a survey conducted by the association "Innovative Instrument Engineering" together with BEROC of about 40 instrument-making companies, more than 76% of them create innovative products based on their own developments, and more than 30% — in interaction with customers.

At the same time, it is obvious that the level of innovation varies from company to company. In hardware, as in the software industry, there are product and outsourcing companies that, due to their specifics, invest in development in different ways: in the product model, up to 30% of revenue is spent on development, in the outsourcing model-from 70 to 95%.

3.2 Production

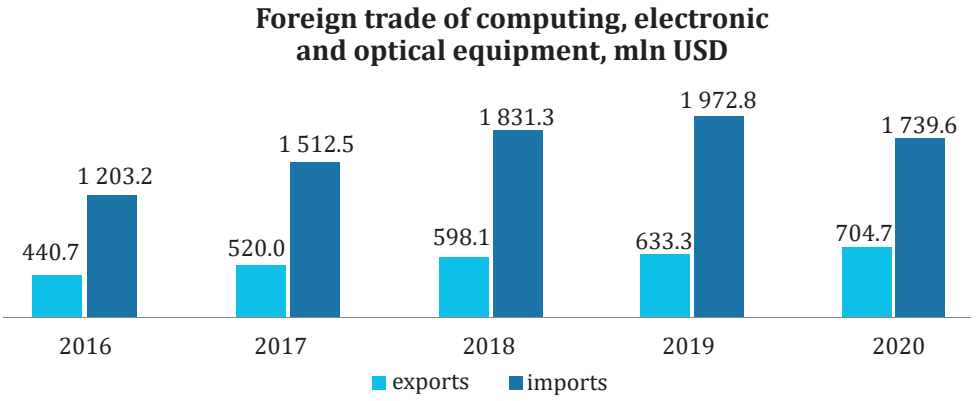
The main regions of production concentration in the instrument and electronics industry are Minsk (54.5%), Brest region (12.5%) and Vitebsk region (11.7%). This structure is explained by the fact that the main industrial enterprises are concentrated in these areas: Integral, Screen, Horizon, MMZ named after S. I. Vavilov, Monolit, Peleng, BelOMO, Planar, Regula, Izovak, Polymaster, Adani and others. These regions are the most promising in terms of placing new production facilities, especially considering that these regions are home to related and supporting instrument and electronics industries: radio engineering, electrical engineering, optical and mechanical engineering, as well as large research centers.

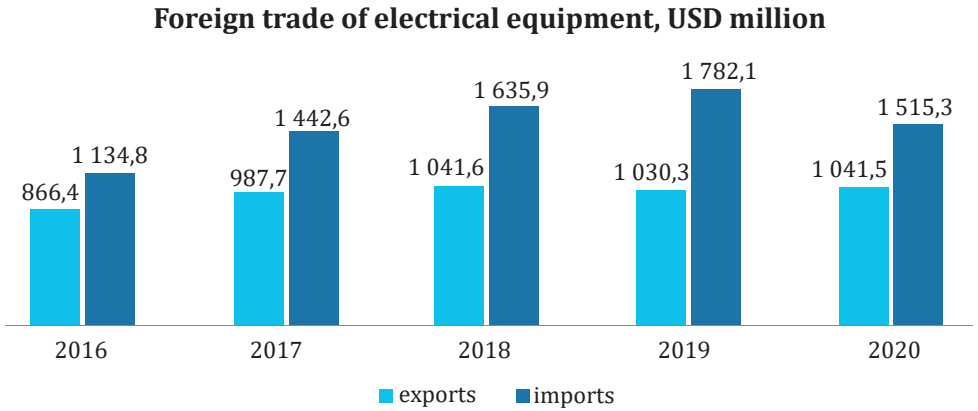
If we consider the production structure of the industry from the point of view of the groups of goods produced, the picture is as follows.



More than 50% of the production volume is occupied by product groups from the CJ "Electrical Equipment Manufacturing" sub-section. The largest segments are household appliances; electric motors, generators, transformers; electrical wiring and wiring devices.

3.3 Foreign trade





The total exports of the computer, electronic and optical equipment manufacturing sector in 2020 amounted to 704 million US dollars (with imports of 1739.6 million US dollars), the electrical equipment manufacturing sector - 1041.5 million US dollars (with imports of 1515.3 million US dollars) - a total of 1745.5 million US dollars (total imports of 3254.9 million US dollars).

The share of industry exports in the total volume of exports of the republic was 6.47% (2.61% and 3.86%, respectively, by sector). The share of exports in total industrial production by sector was 82.35% and 79.37%. In the industry as a whole, the share of exports in total industrial production was 80.54%.

3.4 Key players

Scientific and production holding of precision engineering "Planar" develops and manufactures sophisticated optical-mechanical, control-measuring and assembly equipment for microelectronics. Its parent company is included in the register of high-tech enterprises of the Republic of Belarus.

JSC Integral has 50 years of experience in the development and production of integrated circuits (ICS), discrete semiconductor devices, information display devices, electronic and medical devices. Develops and manufactures the latest microelectronic components for domestic and foreign manufacturers of consumer and industrial electronics, as well as special equipment operating in extreme conditions.

Minsk Electrotechnical Plant named after V. I. Kozlov is one of the world leaders in the production of power distribution transformers and various electrical panel devices.

JSC Agat-System is a company that develops, manufactures, tests and puts into operation integrated information and reference systems and control systems for various purposes, hardware and software complexes and technical means, including communication and data transmission facilities, computer equipment, control and measuring devices, information input and display devices, and production facilities. buses and consumer goods.

Holding BelOMO is a company that manufactures laser, optoelectronic and opto-mechanical devices and systems.

Izovak LLC is a manufacturer in the field of new film technologies, creating unique vacuum equipment, ion sources, spray technology and related software.

JSC Peleng is an enterprise specializing in R & D and manufacturing of high-tech optical and optoelectronic products for various purposes.

Regula LLC is the largest manufacturer of expert products for verifying the authenticity of documents, banknotes and securities.

Polimaster LLC is an enterprise that develops and manufactures radiation monitoring equipment to prevent illegal trafficking of radioactive materials and prevent terrorist threats.

CJSC Solar LS specializes in research, development and production of solid-state laser systems and spectral analysis devices for science, medicine and industry.

JV Technotonis the world's leading manufacturer of fuel consumption monitoring equipment and automotive equipment monitoring (DFM fuel flow, датчики уровня топлива meters, DUT-E fuel level sensorse, Crocodile contactless readers, MasterCAN vehicle data interfacesMasterCAN).

UE Atomtech is a leading research and production center of the Republic of Belarus and one of the world leaders in the development and production of equipment for nuclear measurement and radiation control.

UE Adani is a world leader in the production of low-dose equipment for human scanning, offers effective solutions in the field of digital mammography, radioscopy and radiography.

Rozum Robotics LLC is a private production and engineering company engaged in the design, development and production of robotic solutions and components.

Litoplast Industrial and commercial LLC is a leading enterprise of the Republic of Belarus for the production of plastics, electrical products and heating systems.

Promwad is an independent electronics design center, the largest in Eastern Europe, dedicated to the full cycle of development, implementation and production of electronics.

NTLab develops analog and digital integrated circuits, electronic modules and equipment based on them in the field of radio navigation, digital radio communications, radio frequency identification, and automatic control of robotic complexes.

4. Investment potential and development prospects of the industry

According to the latest Doing Business report, the Republic of Belarus is recognized as one of the leading reformers in the field of doing business, taking 49th place in the list of 190 countries. This indicates consistent and successful actions on the part of the government to maintain business competitiveness, attract foreign investors, and improve the regulatory framework.

4.1 Investments in the industry

Fixed capital investment in the industry in 2020 totaled $ 67.32 million (including 29.89 in computing, electronic and optical equipment and 37.43 in electrical equipment), which is $ 7.54 million less than in 2019. Foreign direct investment in 2020 amounted to 58.2 million US dollars (including 12.0 in computing, electronic and optical equipment and 46.2 in electrical equipment), which is less than in 2019 by 25.9 million US dollars.

In 2020, there were 32 innovation-active enterprises in the computer, electronic and optical equipment sector (the share of innovation-active enterprises was 62.7%) and 29 in the electrical equipment production sector (46.8% of the total number of industrial organizations surveyed, respectively). The volume of innovative products shipped amounted to $ 412.62 million (for sectors $ 275.52 and $ 137.35 million). respectively, which is 48.7% and 13.5% of the total volume of shipped products). At the same time, the share of exports in 2020 by sector was 80.7% and 61.9% of the total volume of shipped innovative products.

4.2 Investment attractiveness

The production of electrical, opto-mechanical, instrument-making products, household appliances and electronics, including information and communication technologies, are promising sectors for investment, which is stipulated in Resolution No. 372 of the Council of Ministers of May 12, 2016. This allows instrument and electronics companies to be residents of the Hi-Tech Park, which, с своюin turn, allows them to use progressive legislation in the field of investment.

A powerful incentive for the development of instrument and electronics companies, especially in the IT-sector, was Decree No. 8 "On the Development of the Digital Economy" (entered into force on March 28, 2018), which improved and extended the special HTP regime until 2049, as well as expanded the list of encouraged activities.

According to the Decree, Belarus is implementing one of the most progressive legal systems in the world in the field of digital economy. Currently, legal conditions have been created for ICOs (a form of attracting investment in the form of selling investors a fixed number of new units of cryptocurrencies obtained by one-time or accelerated generation), the use of cryptocurrencies and the introduction of smart contracts. Belarus becomes the first jurisdiction in the world with comprehensive legal regulation of business based on blockchain technology. It is expected that the number of companies operating in the country and producing intelligent products that are in demand all over the world will grow.

Considering the competitive forces of the industry, it can be noted that the manufacturing industry, which includes the instrument and electronics industry, is an industry with a low concentration of manufacturers, since the CR-3 concentration index is 17.9% (less than 45%). The CR-10 index, i.e., the concentration of the 10 largest producers, is 29.2%. This means that the top 10 companies are closed by a company with a market share of about 1%.

The market is attractive for investment, as the market is low-competitive and companies tend to focus on certain niches. The average annual output of a single company in the instrument and electronics industry is US $ 2.73 million.

4.3 Export potential

It is predicted that the growth potential of the instrument and electronics industry will remain high in the coming years, which opens up good opportunities for national and foreign investors.

Belarus has a high potential for the development of the industry due to the presence of strong scientific school and highly qualified personnel, a favorable investment climate, as well as due to the development and support of specialized innovation and industrial clusters.

Given the high share of innovative products produced (over 60%) and the high level of exports in the industry as a whole (80.5% of the industry's output) over the past 5 years, as well as favorable investment conditions and special preferential treatment, the instrument and electronics industry will maintain and strengthen its export focus.

4.4 Development prospects

According to the program of socio-economic development of the Republic of Belarus for 2021-2025 years of robotics, instrumentation, electric industry and electric transport are designated as breakthrough points of industrial growth. In accordance with this program, the Republic of Belarus plans to develop the production of multifunctional unmanned aerial and robotic complexes, robotic systems using artificial intelligence technologies, software and hardware complexes, electric vehicles and their components, intelligent automotive components and systems of sighting equipment products.

In the industry development trends also include the operation and commercialization of innovative products and technologies in such areas as the Internet of Things, automated robotic systems, artificial intelligence, machine learning, computer vision, augmented reality, blockchain, autonomous vehicles, printed electronics, organic electronics, miniaturized electronics, integrated circuit packaging, and additive manufacturing.

5. Investment climate

5.1. Macro indicators

In general, the main macroeconomic indicators have a positive trend. Thus, GDP for 2021 in current prices amounted to 68.23 billion dollars. In comparable prices, GDP grew by 2.3% compared to 2020 and 6.1% compared to 2015.
Labor productivity, respectively, was 3.2% compared to 2020 and increased by 11.5% from 2015.

Industrial output growth in 2021 compared to 2020 was 6.5%, compared to 2015-19.3%.

The growth of goods exports in 2021 compared to 2020 was 32.5%, compared to 2015-49.9%.

Real wage growth in 2021 compared to 2020 was 4.4%, compared to 2015-40.8%.

In 201.11, foreign investment in the economy of the Republic of Belarus amounted to USD 8.7 billion, of which 75.39% were direct, 0.05% were portfolio, and 24.56% were other foreign investments. Foreign direct investment on a net basis (excluding direct investor debt for goods, works, and services) accounted for 15.26%.

Indicator	2017	2018	2019	2020	2021
Volume of foreign investments received in the real sector of the economy of the Republic of Belarus, million US dollars	9 728.5	10 842.0	10 006.8	8 680.2	8 698.7
including:					
direct	7 634.2	8 537.1	7 233.2	6 006.0	6 558.0
portfolio	8.4	3.9	6.7	4.8	4.3
other	2 085.9	2 301.0	2 766.9	2 669.4	2 136.3
Foreign direct investment on a net basis (excluding debt to a direct investor for goods, works, services), million US dollars	1 246.8	1 634.9	1 327.2	1 414.8	1 327.4

In 2021, 21.1% of investments in fixed assets were directed to the manufacturing industry, which amounted to 1835.43 million US dollars. The main share (45%) was sent to Minsk and the Minsk region.

5.2. Ratings

Belarus belongs to the group of countries with a very high level of human development, while being characterized by a relatively low level of labor costs. It ranks 53rd out of 189 countries.

The HDI, published by the United Nations Development Program, evaluates 3 key indicators: life expectancy, expected and actual duration of education, and the value of gross national income at purchasing power parity per capita.

The average life expectancy of Belarusians is 74.8 years, the average duration of their education is 12 years, and the gross income per capita at purchasing power parity is 18.55 thousand USD. At the same time, the nominally accrued average monthly salary in the Republic of Belarus remains one of the lowest in the region – 565 USD in 2021.

Place of Belarus in the Doing Business 2020 ranking is **49** out of 190	Lithuania **11**	Kazakhstan **25**	Russia **28**	Poland **40**
Registering property - **14**	4	24	12	92
Getting electricity - **20**	15	67	7	60
International trade - **24**	19	105	99	1
Starting a business - **30**	34	22	40	128
Enforcing contracts - **40**	7	4	21	55
Dealing with construction permits - **48**	10	37	26	39
Resolving insolvency - **74**	89	42	57	25
Protecting minority investors - **79**	37	7	72	51
Taxation - **99**	18	64	58	77
Receiving a loan - **104**	48	25	25	37

The rating indicates sufficient ease of registering property, trading across borders, starting a business.

Belarus in the World Bank's WGI 2020 ranking

Indicator	Score (min=0, max = 100)
Political stability and absence of violence	56.67
Control of corruption	53.85
Government effectiveness	44.23
Regulatory quality	32.21
Rule of law	21.63
Voice of the population and accountability of government authorities	11.33

Positions of Belarus in various ratings

Rating	Place
Global Innovation Index, 2020	64 out of 131
Prosperity Index, 2020	69 out of 167
Economic Freedom (The Fraser Institute), 2020	114 out of 162
Index of Economic Freedom, 2020	95 out of 178

Belarus ranks 95th out of 178 in the Index of Economic Freedom, while the Fraser Institute ranks Belarus 114th out of 162 in the competing rating "Economic Freedom".

In 2021, Belarus ranked 2nd in terms of fabric produced among the CIS countries, and 3rd in terms of shoe production.

Fabric production in the CIS countries in 2021

Country	million sq. m.
Russia	7877.5
Belarus	148.1
Kazakhstan	124.2
Kyrgyzstan	41.6
Azerbaijan	33.8
Tajikistan	10.5
Armeniav	0.02

Footwear production in the CIS countries in 2021

Country	million pairs
Russia	100.4
Ukraine	13.6
Belarus	6.9
Kyrgyzstan	4.7
Kazakhstan	1.4
Moldova	1.3
Azerbaijan	1.2
Tajikistan	1.2
Armenia	0.2

5.3 Investor Roadmap

Investment projects and PPP
>1000

Investment ideas
>700

Concessions
9

Manufacturing sites and real estate
>900

Land plots
>1000

map.investinbelarus.by

More investment projects and ideas, as well as land plots and real estate objects for the implementation of investment projects can be found on the interactive portal "Investor's Roadmap"

6.4 The main preferential regimes for the implementation of investment projects in light industry

Small and medium-size cities, rural territories

- tax on profits– 0%*
- property tax – 0%*
- exemption from import duties and VAT in respect of goods made to the statutory fund
- personal income tax – 0%*
- exemption from state duty for the issuance of licenses

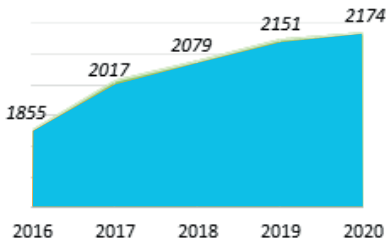
* - within 7 years

Southeastern region of the Mogilev region

- personal income tax – 10% (for 7 years)
- pension insurance for entities – 24%
- state financial support for the construction of engineering and transport infrastructure
- reimbursement to investors of up to 35% of the capital costs of investment projects in 2021 - 2025

Investment agreement

- VAT deduction in full amount
- import customs duties on technological equipment, raw materials, materials – 0%
- land plot provision for lease without an auctio



Number of concluded investment agreements

Orsha district of Vitebsk region

- simplified taxation system rate – 1% or 2%**;
- pension insurance – 24%;
- exemption from payment of duty for issuance of special permits for the right to engage in labor activity to foreigners;
- exemption from VAT on the import of foreign technological equipment and spare parts for it, for which the rate of import customs duty is set to 0.

** - 1% in relation to revenue from goods of own production, 2% in relation to revenue from works (services) of own production

National Agency of Investment and Privatization

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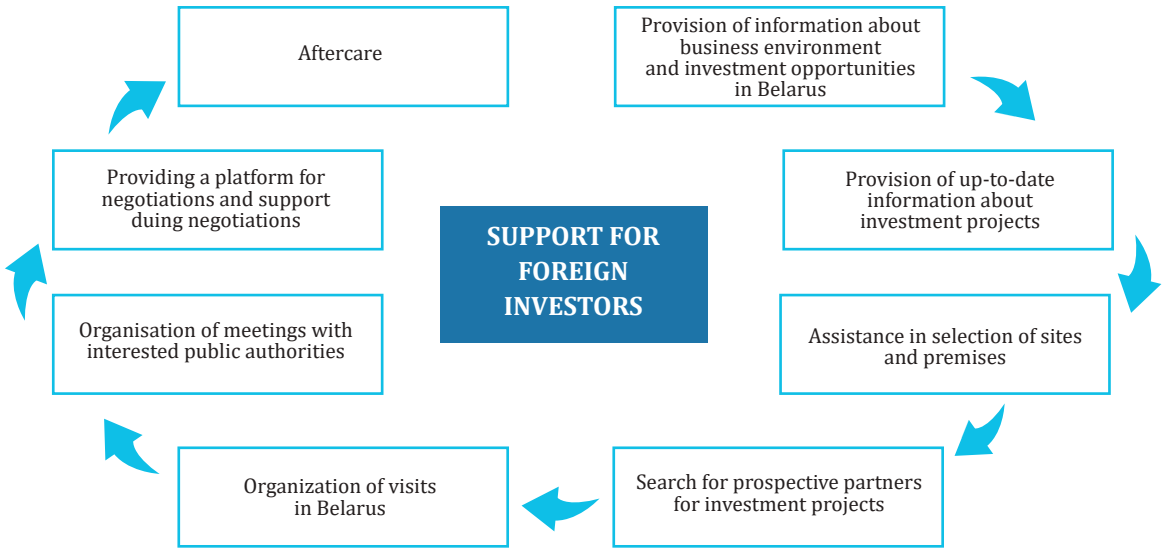
+375 17 200 81 75
+375 17 226 41 66

+375 17 226 47 98

mail@investinbelarus.by
www.investinbelarus.by



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