On approval of the Concept of development of the manufacturing industry of the Republic of Kazakhstan for 2023-2029

Unofficial translation

Resolution of the Government of the Republic of Kazakhstan № 846 dated December 20, 2018.

Unofficial translation

Footnote. The title is in the wording of the resolution of the Government of the Republic of Kazakhstan dated 28.03.2023 № 259.

The Government of the Republic of Kazakhstan **DECIDES**:

Footnote. The preamble is in the wording of the resolution of the Government of the Republic of Kazakhstan dated 30.12.2021 № 965.

1. To approve the attached Concept for development of the manufacturing industry of the Republic of Kazakhstan for 2023-2029 (hereinafter – the Concept).

Footnote. Paragraph 1 - as amended by the resolution of the Government of the Republic of Kazakhstan dated 28.03.2023 № 259.

2. Central state and local executive bodies of the Republic of Kazakhstan and organizations (on agreement), which are responsible for the implementation of the Concept:

1) to take measures to implement the Concept;

2) to provide information on the implementation of the Concept in the manner and terms established by the Decree of the Government of the Republic of Kazakhstan dated November 29, 2017 № 790 "On approval of the State Planning System in the Republic of Kazakhstan".

Footnote. Paragraph 2 as amended by the Resolution of the Government of the Republic of Kazakhstan dated 30.12.2021 № 965.

2-1. Control over execution of this Resolution shall be entrusted to the Ministry of Industry and Infrastructural Development of the Republic of Kazakhstan.

Footnote. The Resolution was supplemented by paragraph 2-1 in accordance with the Resolution of the Government dated 30.12.2021 № 965.

3. This Resolution shall enter into force from the date of its signing.

Prime Minister
of the Republic of Kazakhstan *B. Sagintayev*

APPROVED
Government Decree № 846
of the Republic of Kazakhstan
of December 20, 2018

The concept of development of the manufacturing industry of the Republic of Kazakhstan for 2023 -2029

Footnote. The concept is in the wording of the resolution of the Government of the Republic of Kazakhstan dated 28.03.2023 № 259.

Passport

1. Analysis of the current situation of industrial and innovative development in the Republic of Kazakhstan

2. Review of the international experience of state policy in the field of industrial and innovative development

3. Vision of industrial and innovative development

4. Basic principles and approaches of development

5. Target indicators and expected results

6. Action plan for the implementation of the Concept of development of the manufacturing industry of the Republic of Kazakhstan for 2023-2029 The concept was developed in order to fulfill the tasks set by the National Development Plan of the Republic of Kazakhstan until 2025. Thus, in order to solve the problem of creating specialized factors and market conditions in the industrial sectors, it is planned to expand the toolkit of state incentives for manufacturers of the manufacturing industry, including package solutions within the framework of the agreement on improving competitiveness.

The practical implementation of the task of expanding opportunities for the growth and development of small and medium–sized businesses (hereinafter referred to as SMEs) will be carried out through measures aimed at increasing access to business financing through the expansion and targeting of government incentive programs and measures.

Analysis of the current situation of industrial and innovative development in the Republic of Kazakhstan

Kazakhstan is gradually implementing a policy of industrial and innovative development aimed at creating a high-performance and export-oriented manufacturing industry.

According to the Law of the Republic of Kazakhstan, the manufacturing industry is understood as a set of industries that are associated with the processing of raw materials, materials, substances, components for a new product (goods, including food products).

In comparison with 2020, the number of subjects of industrial and innovative activity increased by 18.6% and as of January 1, 2023, 19.9 thousand enterprises are involved in the manufacturing sector, of which 19.2 thousand are small, 501 medium and 250 large.

The income of manufacturers from the sale of products and services demonstrates a positive trend. For 9 months of 2022, income increased by 27.5% compared to the same period in 2021 and amounted to 16.3 trillion tenge. In 2021, income increased by 4 trillion tenge and amounted to 16.1 trillion tenge.

The volume of manufactured products in the manufacturing sector increased by 7.5 trillion tenge compared to 2020 and amounted to 20.7 trillion tenge in the 12 months of 2022. The total volume of manufactured products in the manufacturing sector for three years amounted to 51 trillion tenge.

The IFO of production for the 12 months of 2022 compared to the same period of 2021 amounted to 103.4%. In 2021, the IFO was fixed at 104.7% by 2020.

In January-September 2022, the gross value added (hereinafter – GVA) of the manufacturing industry increased by 3 trillion tenge compared to the same period in 2020 and amounted to 8.9 trillion tenge. In 2021, the volume of GVA amounted to 11.4 trillion tenge, in 2020 - 9.2 trillion tenge.

The IFO of the GVA for 9 months of 2022 compared to the same period of 2021 amounted to 104.6%. For 9 months of 2021, the IFO amounted to 105.7% compared to the same period in 2020.

The production of new types of products not previously produced in Kazakhstan has been mastered: freight and passenger wagons, electric locomotives, trucks, cars and buses, transformers, X-ray equipment, LED lamps, titanium ingots and slabs, medicines and others.

The number of goods produced in Kazakhstan and competitive in foreign markets has increased, including: steam turbines, copper products, radiators, batteries, beverages, confectionery, etc.

By the end of 2021, a high degree of depreciation by type of economic activity falls on such industries as:

- metallurgical industry – 49.2%;
- beverage production – 48.8%;
- production of finished metal products, except machinery and equipment – 45.2%;
- production of rubber and plastic products – 39.9%;
- food production – 38.7%.

In the manufacturing industry, this figure was 40.6%.

Thus, the main production assets involved in the economy of the manufacturing sector need to be modernized. To solve this problem, it is necessary to stimulate enterprises to invest and innovate, as well as to modernize fixed assets.

The potential of the manufacturing industry is determined by its investment attractiveness. As a result of the annual positive dynamics of investments in fixed assets of the manufacturing industry from 2020 to 2022, the volume of investments in fixed assets amounted to 4.2 trillion tenge, increasing 1.4 times from 1077.8 billion tenge in 2020 to 1,533.61 billion tenge in 2022, while the real growth of investments in fixed assets was 2.3 times (231.3 %) (Pic 1).

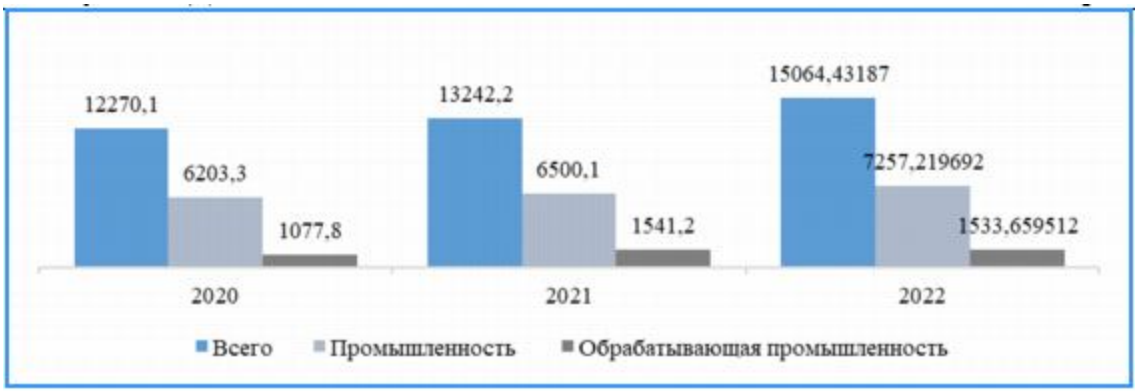
In the 12 months of 2022, the volume of investments in fixed assets of the manufacturing industry amounted to 1,533.7 billion tenge, an increase of 455.9 billion tenge in nominal terms compared to 2020.

The main flow of investments in 2022 was directed to the development of enterprises: the metallurgical industry (606.3 billion tenge or 40% of the total investment in the sector), the

chemical industry (230 billion tenge or 15% of the total investment in the sector), other non-metallic mineral products (162 billion tenge or 11%), food products (140.6 billion tenge or 9%), rubber and plastic products (91 billion tenge or 6%).

1 Data for 12 months of 2022

Pic 1. Dynamics of investments in fixed assets for 2020-2022, billion tenge



Total Industry Manufacturing industry

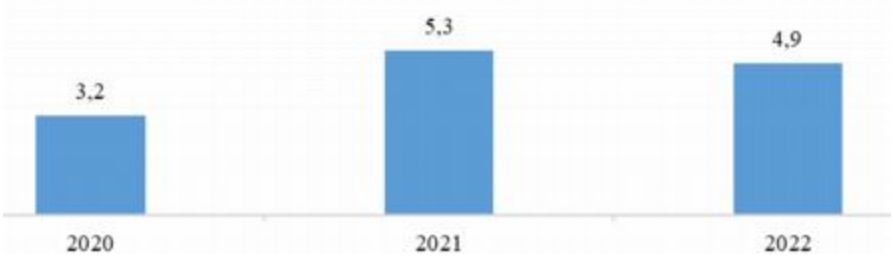
Source: BUREAU OF NATIONAL STATISTICS of the AGENCY FOR STRATEGIC PLANNING AND REFORMS OF THE REPUBLIC OF KAZAKHSTAN

In just 3 years (2020-2022), the gross inflow of foreign direct investment into the manufacturing sector amounted to more than 13.4 billion US dollars, increasing 1.5 times from 3.2 billion US dollars in 2020 to 4.9 billion US dollars in 2022 (Pic 2).

Most of all, foreign investors invest in the metallurgical industry and production of finished metal products, except for machinery and equipment ($3.7 billion or 76.8% of the total amount of foreign investments), in the production of chemical industry products (274.8 million USD or 5.6%), rubber and plastic products, as well as other non-metallic mineral products ($204.6 million or 4.2%), computers, electronic and optical products ($177.4 million or 3.6%) and food, beverages and tobacco products ($161 million or 3.3% of the total amount of foreign investments investments).

In 2022, the inflow of foreign direct investment increased 5 times compared to 2020 in the production of chemical industry products, computers, electronic and optical products - 4 times , coke and refined petroleum products - 2 times, and wooden and paper products, and printing - 1.7 times.

Pic 2. Gross inflow of direct investments to Kazakhstan from foreign direct investors, billion US dollars



Source: National Bank of Kazakhstan

In January-December 2022, the volume of exports of the manufacturing industry increased by 71.5% compared to 2020 and amounted to 26.5 billion US dollars (Pic 3). At the same time, five industries occupy 90% of the export structure of the manufacturing industry: metallurgical production (57%), production of coke and refined petroleum products (9.3%), food (8.7%), chemical industry products (6.2%), computers, electronic and optical equipment (6.2% each).

The total volume of exports of goods and services from Kazakhstan in 12 months of 2022 amounted to 84.4 billion US dollars, which is 36.9 billion US dollars more than in 2020.

Pic 3. Dynamics of exports of goods of the Republic of Kazakhstan, billion US dollars

Total export

Manufacturing industry

The share of the manufacturing industry

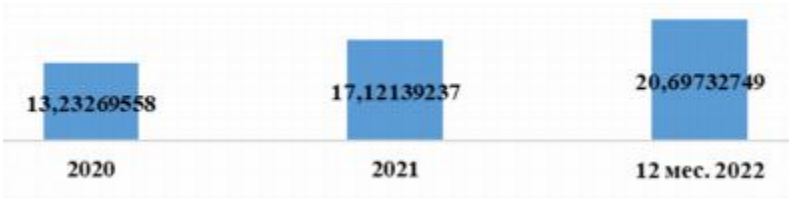
Changes by 2020, %

Source: BUREAU OF NATIONAL STATISTICS of the AGENCY FOR STRATEGIC PLANNING AND REFORMS OF THE REPUBLIC OF KAZAKHSTAN, State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan

Since 2020, there has been a positive trend in the volume of manufacturing industry production – from 13.2 trillion tenge in 2020 to 20.7 trillion tenge in 20221 (Pic 4).

[1] Data for 12 months of 2022.

Pic 4. Dynamics of the volume of production of the manufacturing industry of the Republic of Kazakhstan, trillion tenge



Source: BUREAU OF NATIONAL STATISTICS of the AGENCY FOR STRATEGIC PLANNING AND REFORMS OF THE REPUBLIC OF KAZAKHSTAN

The following industries made the greatest contribution to the development of the manufacturing industry in 2022: metallurgical production (9 trillion tenge or 43.6% of the total production of the manufacturing industry), food production (2.9 trillion tenge or 14.1% of the total production of OP), production of cars, trailers and semi-trailers (1.2 trillion tenge or 5.8%), repair and installation of machinery and equipment (848.2 billion tenge or 4.1%) and beverage production (764.1 billion tenge or 3.7%).

The real level of development of the manufacturing industry of the Republic of Kazakhstan is determined through the parameters of manufacturability, geographical distribution and exports.

The manufacturing industry is the most heterogeneous of all sectors of the economy. It consists of 24 different industries, differing in the level of capital intensity, labor use, manufacturability, choice of location and consumer nature. In the Industrial Development Report 2020 prepared by UNIDO, Kazakhstan is classified as a country with an emerging industrial economy. Most of the value added in the manufacturing industry belongs to low- (14.7%) and medium-tech (23.7%) sectors (Pic 5).

Pic 5. The structure of the manufacturing industry by technological complexity (% of GDP)

Source-oriented
Low-tech
Medium-tech
High-tech

Source: United Nations Industrial Development Organization, 2020. Competitive Industrial Performance Report 2020. Vienna, Austria

In comparison with 2018, Kazakhstan improved its position in the Economic Complexity Index by 14 points in 2020, rising from 95th (the Economic Complexity Index is -0.63 points) to 81st place (the Economic Complexity Index is -0.33 points) in the ranking of 133 countries (Pic 6).

Pic 6. Kazakhstan's place in the ranking of the Economic Complexity Index in 2000-2019

Pic 6. Kazakhstan's place in the ranking of the Economic Complexity Index in 2000-2020

Source: https://atlas.cid.harvard.edu/rankings. Date of application 16.02.2023.

Kazakhstan is ahead of Tajikistan by 13 positions (94th place, – 0.61), while it lags behind Uzbekistan by 3 positions (78th place, with complexity – 0.26), Armenia by 4 positions (77th place, with complexity – 0.24), Kyrgyzstan by 27 positions (54th place, with complexity 0.16), Russia by 30 positions (51st place, with complexity 0.20), Belarus by 50 positions (31st place, with complexity 0.83).

In 2020, the volume of exports of goods from Kazakhstan amounted to 38.7 billion US dollars, a decrease of 19.5% compared to 2018. The main importing countries of Kazakh products have not changed, whose share in total exports has increased with two countries: China – 23.42% (16.69% in 2018), Russia – 13.25% (11.01% in 2018), the share of exports to Germany decreased and amounted to 5.92% (7.65% in 2018)1.

In recent years, the growth rate of Kazakhstan's manufacturing industry has been achieved mainly due to the country's increased participation in world commodity markets (base metals and materials). The international community, in the form of international institutions, representatives of business communities and experts, shares the opinion that the commodity super-cycle is over and the opportunities for economic growth through the sale of low-value goods have been exhausted.

In this regard, the issue of intensive development of the manufacturing industry has matured due to the organization of production of products of the most high-tech complexity, oriented to world trade, not subject to sudden changes in purchase prices for raw materials.

The mining and metallurgical complex is the second largest sector after the oil and gas industry. MMC accounts for 8.7% of GDP, of which 5.8% is accounted for by the metallurgical industry.

Despite the significant contribution of the industry to the domestic economy, the issue of the low level of processing of raw materials in the country is acute – the bulk of the metal produced is exported.

The annual production of aluminum is 262 thousand tons with domestic consumption of 34 thousand tons, 87% is exported (the number of processors is more than 20 enterprises).

Copper production is 459 thousand tons, domestic consumption is 5.3 thousand tons, the remaining 98.8% are exported (the number of processors is more than 20 enterprises).

Lead production is 108 thousand tons, domestic consumption is 24 thousand tons, 77% is exported (only one processor).

Currently, government support for entire industries can no longer bring the significant effect that was required in the early years of industrialization. The support of the basic foundation of the manufacturing industry was a response to the global economic crisis and became a kind of anti-crisis measure for the economy of Kazakhstan.

The economic crisis caused by the spread of the COVID-19 coronavirus infection, including the closure of borders between countries due to the pandemic, has affected the global logistics and led to the disruption of supply chains of raw materials and finished products. Due to the continuing restrictions in order to avoid the spread of the coronavirus and, as a result, the decline in consumer demand and the growth of protectionist rhetoric, there is a decrease in trade and foreign direct investment.

As a result, there are trends in reducing the competitiveness of the raw material model, accelerating the digitalization of all spheres of society and economic sectors, changing the technological paradigm and consumption structure.

As a result of the above, at the stage of economic recovery in the post-COVID period, Kazakhstan needs to diversify its export and consumer basket as soon as possible, move away from the practice of supporting entire industries, and form a critical mass of industrial enterprises producing goods of vital importance.

At the moment, Kazakhstan has not formed a critical mass of enterprises in the manufacturing industry. So, in 2021, the number of operating enterprises in the manufacturing industry amounted to 18,163 units, while the economically active population amounted to 9,256.7 thousand people. There is a high economic concentration in most manufacturing industries. The process of geographical concentration of enterprises is at an early stage. The absence of a critical mass and geographical concentration of enterprises can lead to problems of forming full-fledged industries, creating value chains, weak intersectoral links, lack of agglomeration effects and accompanying positive externalities, weak motivation for technological modernization, improving product quality, increasing its technological complexity due to insufficient competition.

Taking into account the current realities, for the subsequent deepening of industrialization, Kazakhstan faces the tasks of qualitative growth of the manufacturing industry, focused on meeting the primary needs of the population, both in food and non-food products, ensuring uninterrupted operation and development of the domestic production complex, and thereby increasing the self-sufficiency of the country's economy.

These tasks are dictated by both major global challenges and internal processes and problems.

Thus, one of the main problems is the low level of utilization of production capacities of manufacturing enterprises. Thus, in the second quarter of 2021, the capacity utilization of 69.6% of domestic manufacturing enterprises was less than 70%, while 30.5% of enterprises were loaded at a level of more than 70%.

The main reasons for the insufficient workload of domestic manufacturing enterprises are problems with the provision of raw materials, lack of financial resources for working capital and modernization of capacities, lack or insufficient demand for the products of enterprises in the domestic and foreign markets, insufficiency or lack of trained personnel to work on special equipment.

Currently, the manufacturing industry uses imported raw materials and components that are not produced in Kazakhstan and have no further prospects for localization. The share of imports of such intermediate goods in processing industries can take up to 50% or more.

For example, the share of imports in the production structure in the pharmaceutical industry is 63%, the furniture industry – 55%, electronic products – 40%, food products – 21%, in the production of building materials – 18%.

The absence or shortage of raw materials and components is due to the following reasons:

technological underdevelopment of raw materials production (lack of production of high-quality raw materials);

economic inexpediency of production of certain types of raw materials (small internal demand);

the lack of basic raw materials for organization of subsequent processing. Thus, there is an urgent need to facilitate access to raw materials and components not produced in Kazakhstan in order to increase the competitiveness of domestic products, both in domestic and foreign markets.

Innovative indicators in the manufacturing industry are characterized by the complexity of forecasting. Since 2019, the volume of costs for the introduction of innovations in the manufacturing industry has shown an increase from 247.1 to 421.2 billion tenge by the end of 2021. The volume of expenses amounted to 1,197.7 billion tenge. In 2020, an increase in the volume of produced innovative products to 1,489.9 billion tenge was recorded, by 1.8 times compared to 2019, but for the next 2021 it decreased to 1,209.3 billion tenge or by 18.8%. As a result, the share of innovative products in gross domestic product in this period also fluctuates from 1.6% in 2019, 2.4% in 2020 and falling again to 1.7% in 2022 (Pic 7).

Pic 7. Dynamics of indicators of innovative activity in the manufacturing industry

Volume of innovative products (goods, services), billion of tenge

Volume of sold innovative products (goods, services), planned for export, billion of tenge

Costs for innovations in manufacturing industry, billion of tenge

The share of innovative products in GDP, %%

Source: BUREAU OF NATIONAL STATISTICS of the AGENCY FOR STRATEGIC PLANNING AND REFORMS OF THE REPUBLIC OF KAZAKHSTAN

There are systemically important national and private companies that have a certain potential for the development of corporate innovations, invest in research and development (

hereinafter referred to as R&D), which can become a driver of innovative and scientific and technical development.

There are such institutions for the development of innovation support in Kazakhstan as the international technopark of IT startups "AstanaHub", the autonomous cluster fund "Park of Innovative Technologies", the joint-stock company "QazTechVentures", the joint-stock company "Qazinnovations". The World Bank's project "Stimulating Productive Innovation" is being implemented. The innovation cluster of Nazarbayev University NURIS, the Fintechhub of the Astana International Financial Center (hereinafter referred to as the AIFC) and the International Center for Green Technologies and Investment Projects are functioning.

In 2020, based on the experience of the World Bank, the Rules for granting innovative grants for technology commercialization, technological development of existing enterprises and technological development of industries were improved.

In general, innovation indicators show an increase compared to 2010. At the same time, as of 2021, the country's innovative and technological development is characterized by:

a low share of exports of high–tech products in the total volume of exports of the manufacturing industry - 6.9%;

the level of costs for technological innovations was 0.51%;

comparatively low innovation activity of enterprises in the manufacturing industry – 12.9 %;

the share of innovative products in GDP is 1.7%.

The country does not have sufficient in-house competencies for the development or transfer of modern technologies necessary for the production of medium and high-value goods, therefore, raw materials and minerals still prevail in exports, and machinery, equipment, machine tools, high-precision instruments, special equipment, electronics and other key production factors occupy a large part of the import structure, in short, technology.

In order to form an effective innovation ecosystem, to enter a high-tech economic structure capable of creating knowledge-intensive products and thereby improve the standard of living of citizens, it is necessary to develop innovations on a systematic basis.

In July 2021, the Government of the Republic of Kazakhstan and the World Economic Forum signed an Agreement on accession and cooperation between the Center of the Fourth Industrial Revolution (hereinafter referred to as the 4IR Center) in Kazakhstan and the World Economic Forum (hereinafter referred to as the Agreement), approved by the resolution of the Government of the Republic of Kazakhstan dated December 25, 2020 № 894. The Affiliated 4IR Center was established on the basis of AIFC. On the basis of the Agreement, the 4IR Affiliated Center was opened.

The main goal of the AIFC is to create a new platform for cooperation aimed at developing management principles, policies and protocols that accelerate the application of

scientific and technological achievements in accordance with global public goals, as well as to scale and localize the achievements of the transformational era, the so-called Fourth Industrial Revolution.

The AIFC is of regional importance and will allow the formation and improvement in Central Asia of mechanisms, policies, procedures and principles for regulating innovation and digital transformation in such areas as the Internet of Things, smart cities, artificial intelligence and machine learning, big data management, blockchain, unmanned vehicles and aerospace technologies.

To build innovation potential and improve competitiveness, the experts from the Global Innovation Index and the World Economic Forum make the following recommendations for developing countries (including taking into account the new reality associated with the pandemic):

focusing the country's leadership on innovation policy and interdepartmental coordination ;

ensuring interaction with all subjects of innovation activity;

coherence of intellectual property and innovation policies;

implementation of a long-term strategy for the development of science, technology and innovation, with the identification of priorities and the consolidation of most resources on them;

increasing public financing and stimulating private investment;

setting specific KPIs and regularly evaluating the measures taken.

At the same time, according to a study by the World Bank experts for developing countries, first of all, the ability to produce should appear, followed by a stage of adaptation (transfer) of existing technologies, and only the third stage is the ability to create innovations themselves.

Thus, today the real situation in Kazakhstan (infrastructure, competencies) involves the creation of only incremental innovations.

The introduction of breakthrough technologies requires large investments. At the same time, domestic large and medium-sized enterprises have a high level of creditworthiness, which leads to a restraint in the process of innovative development. In conditions of insufficient financial resources, attracting foreign direct investment could become a trigger for increasing the innovative potential of domestic enterprises.

The ability to innovate is becoming a central factor of sustainability. The growing competition between China and the United States is intensifying the competition for innovation between them. Increasingly, separate spheres of technological influence are emerging, in which either Chinese or American standards are applied, and technological developments from one of these countries dominate. In the current global conditions, the digital sovereignty of countries, industries, and enterprises is becoming increasingly important.

Investments in digital technologies will be crucial to remain competitive. According to surveys conducted by the Chinese Tencent Institute, most companies plan to increase their digital investments by 10-30% and will focus, in particular, on BigData, the Internet of things, cloud computing and 5G. As a result, by 2025, China plans to fully build the material base for Industry 4.0, as defined by the World Economic Forum.

It is also important to develop infrastructure that supports digitalization, such as 5G networks and high-performance computing power.

In this context, the importance of the digital transformation of industrial production chains – Industry 4.0 - is rapidly increasing. The importance of related technologies during the crisis became apparent when, for example, 3D printing was widely used for the production of visors and parts for artificial ventilation devices (ventilators).

The degree of automation and the use of digital technologies for remote control of equipment had a huge impact on industrial companies during the quarantine period. Companies with a sufficient level of digitalization continued production, while many others stopped completely when the operational staff could not go to work. Companies that have implemented elements of Industry 4.0 have been much better prepared for the crisis. According to the Fraunhofer Institute of Mechanical Engineering and Automation, 70% of companies whose business models are digitized are more resilient to crisis situations. At the same time, the globalization of digital technology has significantly accelerated the digitalization and automation of industrial production. Due to the automation of the enterprise , costs were reduced from 15 to 40%.

Data from the international consulting company McKinsey & Company show that the introduction of new digital technologies is bearing fruit in 2020. For example, digitalization of business processes in industry in the United States generates an average profit of 12% to 14%, compared with 7%-9% for European enterprises and from 5% to 7% for Asian counterparts.

At the same time, enterprises in Kazakhstan have also begun to introduce digital technologies into production processes, but in most cases the entire modernization process is characterized by "patchwork digitalization". In other words, there is a partial digitalization of production that does not cover the entire value chain of products, moreover, it does not allow to fully achieve the full effect of digital technologies that cannot be integrated with existing and new equipment.

At the same time, according to the results of an analysis of more than 605 enterprises in the manufacturing and mining and metallurgical complexes (hereinafter referred to as MMC) conducted jointly with attracted foreign partners (Fraunhofer Institute, Business-Sweden) in 2017 for readiness to transition to digital transformation, it was revealed that most enterprises are characterized by the absence of a digital management system production (84% of

manufacturing enterprises, 56% in the mining sector). On the other hand, about 3% of manufacturing companies and about 21% of MMC enterprises have sufficient technological, organizational and human resources for digital transformation.

Constraints for digital transformation have been identified. Firstly, business does not sufficiently understand the economic benefits of digitalization, secondly, domestic developments and competencies in automation and digitalization are poorly developed, thirdly, there is a shortage of qualified personnel, limited financial resources, as well as infrastructure constraints.

As a result of the work carried out within the framework of the State Program "Digital Kazakhstan", a number of systemic measures have been introduced, such as the creation of model digital factories, the implementation of digitalization projects by large companies of the mining and metallurgical complex, the creation of favorable legal conditions for the development of the industrial Internet of Things, the creation of financial, fiscal and other incentives for enterprises to introduce Industry 4.0 technologies, legal regulation of the use of digital technologies in order to improve safety at work, implementation of the project of innovative cooperation in the extractive sector "Mining 4.0".

Within the framework of the project "Creation of model digital factories", a technological audit was conducted to determine the current state of production of JSC "AK Altynalmas", JSC "Himpharm", JSC "Eurasian Foods", JSC "Kentau Transformer Plant", LLP "Bal Textile ", LLP "Karlskrona", LLP "Almaty Fan Factory", according to the results of which the roadmaps for digitalization of companies were approved.

At the same time, work is underway in the regions to digitalize industrial enterprises. In general, at the moment in the regions by 2022, it is planned to introduce digital solutions at 121 enterprises (about 276 digitalization projects, taking into account new enterprises and modernization projects). By the end of 2020, domestic industrial enterprises have implemented more than 171 projects, of which 57 projects fall in 2020.

At the same time, in order to improve the competencies of employees in 2020, together with the Fraunhofer Institute of Industrial Engineering and Automation, industrial specialists were trained on the topic of Industry 4.0. The training is aimed at transferring competencies and knowledge on key technologies and topics of Industry 4.0 to industrial enterprises of the country.

In order to attract investments, advanced technologies for the production of goods and services, create new jobs, and develop competitive production, special economic zones (hereinafter referred to as SEZ) and industrial zones (hereinafter referred to as IZ) have been created in Kazakhstan, which constitute the infrastructure of the country's industrial and innovation system.

To date, there are 13 SEZs and 33 IZs in the country.

In the territories of the SEZ for the entire time of their operation (from 2002 to 2022) 321 (91 extraterritorial) projects have been launched. As a result of the implementation of these

projects, more than 22 thousand jobs were created, tax revenues to the budget amounted to 341.4 billion tenge. Budget expenditures for the construction of infrastructure of all SEZs amounted to 399 billion tenge, while the volume of attracted investments amounted to about 2,610.9 billion tenge. That is, 1 budget tenge invested in the infrastructure of the SEZ allowed to attract 6.6 tenge of private investment (the share of foreign participation was 25.9%).

183 production facilities have been launched at the IZ, with an investment volume of about 559.1 billion tenge. About 8,600 jobs have been created. 80 billion tenge has been invested in the infrastructure of industrial zones. Thus, 7 tenge of investments were attracted for 1 invested budget tenge. The industrial zone of Almaty is the leader in terms of attracted investments.

The difference in investments attracted by 1 tenge is explained by the fact that projects in the SEZ are capital-intensive with increased infrastructure requirements.

In general, thanks to the SEZ regime, whole groups of enterprises have been formed in Kazakhstan for certain types of economic activity.

For example, a logistics center of the latest generation has been created on the basis of the Khorgos – Eastern Gate SEZ. Railway engineering, which was previously absent in Kazakhstan, has been developed at the Astana – New City SEZ. The SEZ "Ontustik" revives the textile industry. The foundation of petrochemical production has been laid at the SEZ " National Industrial Petrochemical Technopark" (hereinafter – "NIPT") and the SEZ "Pavlodar ". New chemical industry facilities are being created at the Taraz Chemical Park SEZ, such as the production of glyphosate (herbicide), sodium cyanide, sodium pyrosulfite, sulfuric acid, etc. According to the same principle, it is planned to increase the localization of small and medium-sized enterprises in all SEZs around the "anchor" industries. Despite the measures taken and the results achieved, the potential for the development of SEZ and IZ has not been fully disclosed, which opens up prospects for their further development.

For further development, promotion and management of SEZs in the Republic of Kazakhstan, it is necessary to eliminate (improve) the following barriers characterizing the low pace of development and weak efficiency of domestic SEZs:

the infrastructure of a number of SEZs and IZs is not completed; insufficient financing and late completion of infrastructure construction. For example, the critical need in the Pavlodar SEZ today is the completion of the construction of treatment facilities, an increase in electricity capacity through the construction of a substation, in the Ontustik SEZ - a high degree of deterioration of the infrastructure of the SEZ, in the Astana SEZ – new city" it is necessary to complete the thermal supply complex, for potential investors in the Taraz Chemical Park SEZ, the construction of infrastructure facilities (2nd stage) is not completed and is necessary, namely, municipal supply facilities (main water pipeline, sewage treatment plants, gas pipeline), the supply of railway tracks, increase of capacity through the construction of integrated transformer substations are not fulfilled;

the mechanism of public-private partnership is practically not used, as well as the potential of private capital in the construction of the basic infrastructure of the SEZ and IZ;

a limited list of permitted activities on the territory of the SEZ, and complex procedures for the inclusion of new types of activities;

there is no possibility of placing small production facilities (there are no ready-made production facilities, both for small industries and for activities that do not require the construction of their own factories, for example, IT);

short terms of operation of the SEZ and unequal periods of benefits (the SEZ is valid for a maximum of 25 years, of which benefits are not provided for the entire period, depending on the period of obtaining the status of a SEZ participant);

absence of maintenance companies to ensure the safety and maintenance, elimination of accidents or other failures of engineering and communication infrastructure facilities;

the lack of regulation of the procedure and criteria for changing the status of an industrial zone of regional and national importance.

To solve these problems, new approaches are being introduced to the functioning and development of SEZs and IZ in the territory of the Republic of Kazakhstan, taking into account the world experience of developed countries.

At the same time, clusters are a new effective form of cooperation between production and service enterprises, educational and scientific organizations, authorities and development institutions. The cluster approach as a tool to increase the competitiveness of companies in the regions will become an important direction in the development of the manufacturing industry and the productive services sector.

Since 2017, a methodological framework has been developed for the implementation of cluster policy, which includes a methodology for the development of territorial clusters, the organization and conduct of competitive procedures for the selection of territorial clusters, and a methodology for expert evaluation of competitive applications from cluster initiatives.

As a result of the diagnosis of cluster infrastructure in the regions of Kazakhstan, six pilot territorial clusters were selected on a competitive basis: in Karaganda region (construction), Shymkent (pharmaceutical production), Almaty (furniture production), Kostanay region (flour milling), Akmola region (milk processing), Almaty region and Almaty (for the development of tourism).

At the present stage of the development of these territorial clusters, the participants of the pharmaceutical, tourism, and milk processing clusters have united into cluster organizations and formalized their activities to solve common problems of increasing the competitiveness of products and entering foreign markets.

Such collaboration directly affects the efficiency of the production activities of cluster participants and affects the state of the industry as a whole.

Competence centers have been established on the basis of the enterprises participating in the clusters (JSC Himpharm, LLP Gormolzavod), each cluster has developed its own

development strategy, and work has begun on the implementation of cluster projects. The participants of the furniture cluster have developed certificates providing discounts of up to 20% for developers in order to provide apartment buyers with comprehensive furniture solutions. The participants of the construction cluster signed a memorandum with the research centers of Karaganda to conduct survey studies on the prospects for the production of environmentally friendly building materials from domestic raw materials and industrial waste.

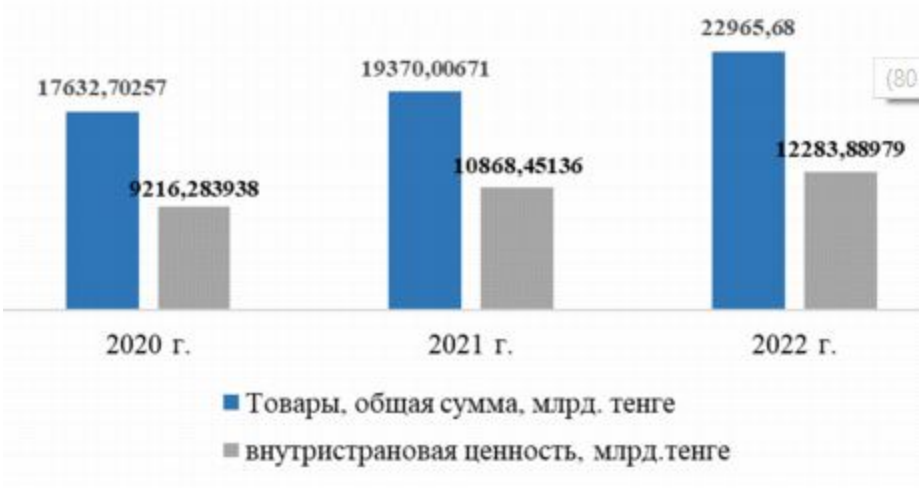
The main specificity of the cluster is to obtain a synergistic effect by the enterprises included in it, which is expressed in increasing the competitiveness of all cluster participants in comparison with individual business entities. Joint projects of the cluster participants make it possible to expand the range of manufactured product groups in accordance with modern global trends in the development of industries, the transition to the production of environmentally friendly building materials and other products.

The development of the manufacturing industry also depends on the development and complexity of the domestic market. To meet the needs of the domestic market, it is necessary to prioritize the development of industries whose products must meet the quality level of products imported by large enterprises, that is, comply with international quality and management standards. Domestic manufacturers cannot compete with foreign factories, and are not ready to occupy a niche in supplying their own products to the service market. There is a significant technological lag of domestic enterprises producing products in terms of renovation, modernization, and expansion of production.

Regulated purchases play a fundamental strategic role in the modern economy. The period when purchases were considered as the rules for supplying customers is a thing of the past. Now the system-forming potential of procurement has come to the fore, the economic essence of which is the transformation of demand into factors of economic development.

An analysis of regulated purchases of goods, works and services (public procurement, purchases of national companies and holdings, purchases of subsurface users) showed that in the republic from 2020 to 2022, with a total increase in procurement volumes by 1.3 times from 17,632.7 to 22,965.7 billion tenge, the share of domestic value increased from 52.1% to 53.5%, in between, showing an indicator of 56.1% in 2021. (Pic 8).

Pic 8. Dynamics of indicators of regulated purchases and local content therein for 2020 – 2022



Goods, total amount, billion of tenge

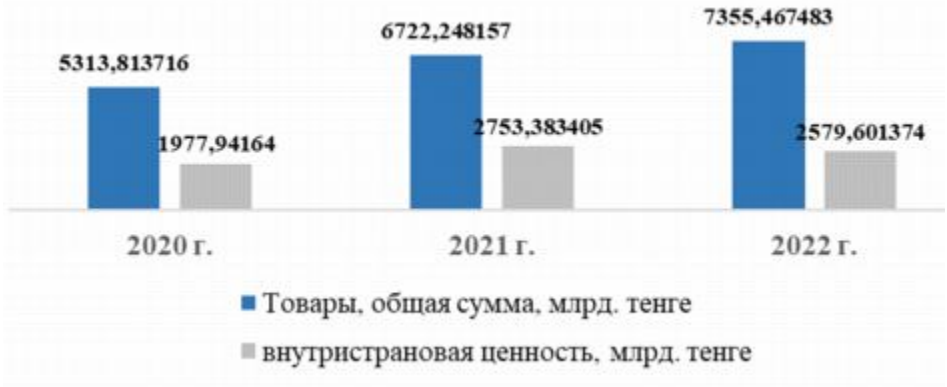
Domestic value, billion of tenge

Source: Data from the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan

As part of Kazakhstan's accession and participation in the World Trade Organization and the Eurasian Economic Union, in accordance with the obligations assumed at the legislative level, norms providing preferences for domestic suppliers in public procurement were eliminated, and the requirements for domestic value in the procurement of subsurface users were partially preserved.

At the same time, it is possible to establish exemptions from the national regime in order to provide support for domestic suppliers and restrict access to certain purchases of goods, services, works and their suppliers originating from the territory of foreign states. At the same time, after certain measures have been taken, indicators for domestic value show a positive trend for the period from 2020 to 2021, with a decrease in 2022. This is due to the fact that the annual indicator has not been fully formed for the absolute value (Pic 9).

Pic 9. Dynamics of indicators of procurement volumes and local content in public procurement for 2020-2022



Goods, total amount, billion of tenge
Domestic value, billion of tenge

Source: Ministry of Finance of the Republic of Kazakhstan

Currently, the requirements for local content are partially provided only in the procurement of subsurface users.

Major project operators – Tengizchevroil Limited Liability Partnership (hereinafter – TCO), Karachaganak Petroleum Operating B.V. Limited Liability Partnership (hereinafter – KPO), North Caspian Operating Company (hereinafter – NCOC) are working with domestic producers and suppliers of works and services within the framework of memoranda with the Government of the Republic Kazakhstan on cooperation. Operators strive to cooperate with suppliers who have a stable customer orientation, and high demands are placed on suppliers. But the difficulty of competing with these manufacturers is the absence of import customs duties on foreign products when delivered to customers.

Major companies in Kazakhstan often face the problems of finding small and medium–sized enterprises (hereinafter referred to as SMEs) offering relevant products and services, as well as evaluating their qualifications, obtaining information that is necessary to reduce the risk when conducting transactions with them.

The share of the SME sector in exports remains at an insufficient level. One of the reasons for the low level of exports of goods by Kazakhstani SMEs is the high cost of certification for compliance with international standards and norms, quality guarantees (API, ASMI, ISO, HACCP, CEN, etc.) used in foreign countries.

It is necessary to strengthen measures to assist enterprises in developing the technical documentation necessary for certification of products and services, which will allow SMEs to overcome technical barriers and increase the competitiveness of domestic enterprises and goods.

Further implementation of industrial and innovation policy will be considered in the light of several initiative groups. The first is the implementation of existing opportunities using existing strengths. Second, investing in weaknesses to exploit existing opportunities. The third is the implementation of preventive measures using strengths to compensate for risks and threats.

1) Opportunities for industrial and innovative development of the Republic of Kazakhstan

Kazakhstan's location between the second (People's Republic of China) and the twelfth (Russian Federation) economies of the world and participation in integration projects with them create opportunities for the manufacturing industry.

An analysis of international trade and global flows of foreign investment shows the predominant role of cross-border trade and investment. According to the results of the

analysis, 3 categories of countries were identified according to the level of priority as sales markets for potential exports of the manufacturing industry. China and Russia became the most priority countries. Uzbekistan and Iran were next in priority. The more distant Japan, South Korea, India, Pakistan, Turkey, Saudi Arabia and the United Arab Emirates became the third priority.

How to improve the positions of domestic companies to achieve the necessary economies of scale and reduce the adverse impact of transportation costs.

Kazakhstan, together with the countries of the Eurasian Economic Union (hereinafter referred to as the EAEU), will actively use the opportunities within the framework of the Agreement on Trade and Economic Cooperation between the EAEU and China in order to create conditions for improving mutual trade, in particular, to focus on simplifying trade procedures and implementing joint investment projects.

Kazakhstan potentially remains an attractive investment platform for companies from China and Russia to create production facilities in order to enter each other's markets. In addition, the "sanctions struggle" between Russia and Western countries may create conditions for attracting European companies to serve its market.

Due to the peripheral location of the Republic of Kazakhstan in relation to the countries of the "world center, the process of diffusion of innovations is slow". However, the formation of a new technology center in China can significantly accelerate the process of technology transfer, penetration and absorption of technological innovations.

The accelerating urbanization in Kazakhstan creates a concentration of capital, labor, knowledge and consumers in spatial growth points.

The global trend of people moving to urbanized territories, which is changing the landscape of country competition, is found in Kazakhstan. The emersion of the second and third million-plus cities on the territory of the Republic of Kazakhstan begins to create local spatial "centers of gravity" attractive for the production of end-use goods, the development of established and the formation of new innovative systems, specialized factors of production necessary to attract investment in medium- and high-tech sectors.

The development of large urban agglomerations generates constant demand for the products of local clusters of the food industry, clothing and footwear production, household goods, building materials, metal and chemical products.

As the economy grows and large infrastructure projects are implemented, the regulated procurement market generates constant and concentrated demand for industrial goods.

There is still a significant potential for regulated procurement to localize the production of goods and services in Kazakhstan.

The development of new production technologies and the digitalization of the manufacturing industry (Industry 4.0) creates opportunities for a breakthrough in productivity and reduction of distance and barriers to trade.

Industry 4.0 is transforming production and business models, opening up opportunities for the formation of high-tech industries in developing countries. The relative availability of key Industry 4.0 technologies makes it possible to reduce the technological gap from developed countries.

2) The main threats and risks to industrial and innovative development are the reverse side of opportunities and are complemented by problems inherent in the manufacturing industry.

Insufficient measures to attract investments in the manufacturing industry pose a threat of "early deindustrialization".

Investments in the traditional sectors of metallurgy and oil refining account for the majority, while investments in other manufacturing industries are fairly stable and do not show a tendency to rapid growth. Without taking into account the basic sectors, the indicator is close to simple production.

As a result, Kazakhstan has not formed a critical mass of enterprises in the manufacturing industry. There is a high economic concentration in most manufacturing industries. The indicator of the given number of enterprises in the manufacturing industry is lower than in Russia and Belarus. The process of geographical concentration of enterprises is at an early stage.

The lack of investment in fixed assets at an early stage jeopardizes the achievement of all indicators of industrial development. The absence of a critical mass and geographical concentration of enterprises leads to problems of forming full-fledged industries, creating value chains, weak intersectoral links, lack of agglomeration effects and accompanying positive externalities, weak motivation for technological modernization, improving product quality, increasing its technological complexity due to insufficient competition.

High competition in foreign markets, insufficient capacity of the domestic market and high competition from manufacturers in China, Russia and other countries create pressure on domestic manufacturers.

Historically, the capacity of the Kazakh market is insufficient to achieve the economies of scale necessary for the production of a significant part of the nomenclature of the manufacturing industry. The availability of foreign markets is critical to achieve economies of scale under current production models.

The foreign markets of the two largest neighbors have more developed and complex production systems compared to Kazakhstan. In addition, these countries create restrictions on the import of Kazakhstani goods to foreign countries. Despite being in the common economic union with Russia, domestic producers still face conditions of unfair competition based on administrative barriers. The Chinese market has historically had high entry barriers associated with special measures for admission to the internal market.

The growth in demand for manufacturing products is mainly met by imports and domestic enterprises face strong competition from manufacturers in Russia and China.

Kazakhstan has a limited export basket and insufficient "complexity", which creates the risk of permanent technological lag.

Exports of the Republic of Kazakhstan are characterized by a limited range of goods with a comparative advantage. Most of the exports are accounted for by metallurgy and oil refining products, which belong to the low- and medium-tech sectors. The level of technological complexity of Kazakhstan is significantly lower than that of China, Russia and Belarus.

Kazakhstan has an average level of development of the basic digital infrastructure, low readiness of enterprises for the "digital age" and weak motivation at the level of medium-sized enterprises to implement "digital solutions", which creates an obstacle to the digital transformation of industry.

To take advantage of all the advantages of the "digital age" technologies, a high level of digital infrastructure development is required. Currently, Kazakhstan belongs to the group of countries with an average level of development in this aspect.

Enterprises are characterized by a low level of use of current information and communication technologies, are poorly informed and do not have the human resources to implement digital technological solutions. The lack of understanding of the need and personnel reduces the incentives of enterprises to invest in digitalization.

The impact of the spread of the COVID-19 pandemic on the global economy

Due to the announcement by the World Health Organization of the COVID-19 pandemic in the world in 2020 – 2021, the spread of the COVID-19 infection has a negative impact on the economy of Kazakhstan. The unfavorable epidemiological situation that began in the fourth quarter of 2019 and led to the closure of state borders and a decrease in economic activity around the world had a negative impact on the foreign trade. The closure of borders between countries due to the pandemic has affected global logistics and the supply chain of raw materials and finished products. The chains are becoming shorter and more diversified, the return of production and outsourcing of business processes in nearby territories are accelerating, with the strengthening of internal supply channels.

As a result, there is low consumer demand due to the fact that more and more countries adhere to the policy of export protectionism. This contributes to a decrease in global demand, and consequently to an increase in prices.

3) The strengths of industrial and innovative development.

The manufacturing industry is a constant priority of the country's political leadership.

The Government consistently implements industrial policy, as well as allocates financial resources to support industrial policy.

The formed system of development institutions makes it possible to cover all aspects of industrial policy regulation.

A system of subjects supporting industrial and innovative activities has been created and is functioning, which allows covering all aspects of industrial policy regulation.

The state directly or indirectly controls and regulates the extraction of raw materials, the production of first-stage products and factors of production related to infrastructure.

Kazakhstan has a high level of provision with basic mineral resources. The state, directly or through the joint-stock company National Welfare Fund Samruk-Kazyna, has stakes in a number of mining and manufacturing companies of the first stages. This creates the possibility of preferential provision of new manufacturing projects with raw materials and basic semi-finished products.

4) Reserves for improving the efficiency of resource use and weaknesses in the implementation of industrial and innovation policy, which require concentration of attention and additional resources.

An insufficiently effective system of monitoring and feedback mechanisms in the implementation of industrial and innovation policy. There are significant difficulties associated with an objective assessment of the implementation of the industrial and innovative development policy, including the achieved direct and final results and the effectiveness of support tools. One of the mechanisms for improving the effectiveness of industrial and innovation policy is to ensure high-quality monitoring and, based on it, analysis of the effectiveness of the support tools used, including through quantitative and qualitative assessment.

Based on the consideration of possible combinations of factors, the following main directions can be identified for the continuation of industrial and innovation policy.

Conducting a proactive trade policy.

Resources and efforts should be directed along two vectors. First, finding solutions and compromises to remove barriers to foreign trade within the EAEU, access to the Chinese market and promotion in the markets of Central and South Asia. It is necessary to establish an ongoing dialogue with existing exporters of the manufacturing industry to understand their real needs and barriers to foreign trade.

Advanced creation of specialized factors of production in spatial "growth points".

Increasing the attractiveness of the manufacturing industry requires reducing costs and increasing the return on invested resources. This can be achieved exclusively through systematic work with the main focus on the integration of industrial and spatial development for the creation, expansion and supply of specialized factors of production. Efforts will be focused on the development of high-quality industrial and digital infrastructure, human capital, competence centers, testing and certification infrastructure.

Creation of new large capital-intensive and knowledge-intensive industries.

Using the state's ability to allocate raw materials and its willingness to provide special conditions for private investors, to ensure the implementation of certain large capital-intensive and knowledge-intensive projects in the manufacturing industry.

2. Review of the international experience of state policy in the field of industrial and innovative development

The trends towards changes and the need to overcome internal barriers to the development of Kazakhstan are interpreted by the conjuncture of the world market. The main external factors determining the further development of the manufacturing industry include global economic competition, trade and economic integration of the Eurasian Economic Union, the emergence of new strong Asian players, and stricter standards for industrial products.

Global technological progress in the industrial sector has increased the digital gap between countries. The total underfunding of scientific developments in industry, the lack of stimulating factors on the part of the state led to a slowdown in the development of advanced technologies in Kazakhstan.

In Kazakhstan, there is a reduction in the level of costs for technological innovations in the manufacturing industry. Thus, in 2019, the cost level decreased to 0.36%, despite the fact that in 2017 it was 1.13%, and in 2018 – 0.99%. Since 2020, this indicator has been gradually leveling off, showing a slight increase: in 2020 – 0.43%, 0.51% in 2021.

The level of domestic R&D expenditures in Kazakhstan is also characterized by consistently low values, ranging from 0.12-0.13%, while in developed countries, including the European Union, it exceeds 2.2%. It should be noted that the highest intensity of R&D is recorded in Japan, Sweden, Austria and Germany, where the corresponding figures exceeded 3% of GDP. At the same time, in Romania, Slovakia, Bulgaria, Latvia, Lithuania, Ireland, Malta and Cyprus, the intensity of R&D is significantly lower and amounts to about 1% of GDP.

In 2022, Kazakhstan dropped by 4 positions in the Global Innovation Index (hereinafter – GII), taking 83rd place (77th place in 2020, 79th place in 2021). In comparison with the EAEU member states, Kazakhstan was 10 and 11 positions ahead of Azerbaijan (93rd place) and Kyrgyzstan (94th place), respectively, in terms of innovation development, but was lower than Russia (47th place), Belarus (77th place) and Armenia (80th place).

At the same time, Kazakhstan left the top three regional leaders in innovation among 10 countries of Central and South Asia, which now includes India, the Islamic Republic of Iran and Uzbekistan (82nd place in the global ranking).

The Global Innovation Index, calculated on the basis of 80 indicators, showed an improvement in a number of positions in Kazakhstan. For example, according to the " Business Development" factor, Kazakhstan rose by 10 points from 78th to 68th place. According to the factor "Development of technologies and knowledge economy", Kazakhstan rose by 5 points from 86 to 81 place (Table 2).

Table 2. Global Innovation Index ranking data

Year	Place in the index	Indicator "Business Development"	Indicator "Development of technologies and knowledge economy"

2022	83	68	81
2021	79	78	86
2020	77	71	80

Source: https://www.globalinnovationindex.org/analysis-economy

According to the Advanced Technology Readiness Index (UNCTAD), Kazakhstan ranks 62nd (index 0.50) out of 158 countries. To calculate the Readiness Index for Advanced Technologies, UNCTAD has formed indicators based on data from international organizations:

in terms of the level of development of ICT infrastructure, taking into account the Internet of Things, big data and blockchain Internet technologies - 62nd place (ITU sources; M-LAB);

42nd place in terms of skills in the use, implementation and adaptation of advanced technologies (sources UNDP; ILO);

in research and development (R&D), including for the production and implementation of advanced technologies that require customization or modification for local use, as well as research activities measured by the number of publications and patents - 56th place (sources SCOPUS; PatSeer);

in the use, implementation and adaptation of advanced technologies in production, including interaction with digitalization in the field of finance and ICT - 75th place (source UNCTAD);

according to the assessment of the availability of financing for the private sector, including resources provided by financial corporations such as finance and leasing companies , insurance companies, pension funds and foreign currency of companies, various financial instruments, including loans, purchase of non–equity capital, securities, trade loans and other receivables, - 114th place (sources WB; IMF, OECD).

In the implementation of state policy in the field of industrial and innovative development , the world community as a whole applies practically general principles and approaches.

Industrial countries have a generally similar organizational structure of state management of industrial development, the main elements of which are the following:

1) clear legislative regulation of industrial policy, which allows for a centralized and balanced industrial policy throughout the country, systematizes and focuses the process and conditions for providing state support to industry;

2) central government agencies responsible for the policy on the development of industry, related services, as well as their promotion in foreign markets;

3) a coordinated system of industrial and innovative development institutions;

4) large state-owned or national companies, specially designated by the state, with the authority to attract investments and implement large industrial projects and create production facilities in new industries;

5) scientific, technological, innovative policy, for the implementation of which the plans, programs, concepts of line ministries and departments are aimed.

The main differences include the conditions, criteria for supporting enterprises, as well as the ability of the state to ensure and in a certain way to ease the level of fiscal and customs burden of enterprises seeking to introduce new technologies and upgrade fixed assets.

For example, the Republic of Turkey is developing private entrepreneurship through the Organization for development of small and medium–sized enterprises (hereinafter - KOSGEB) through the implementation of a program for the modernization of SMEs. Investment projects are supported to increase the production of high-value-added products in the medium and high-tech sectors of Turkey, as well as products that are crucial for the development of these sectors, within the framework of a technologically oriented industrial movement.

If the machines, equipment and software are domestic goods, 15% is added to the non-refundable support rate, and the reimbursable support rate is reduced at the same rate.

The program to support investments in technological products of small and medium-sized businesses has 2 directions:

production and commercialization of products resulting from R&D/innovation activities. For an entrepreneur producing goods of low technological complexity, the support will amount to no more than one million Turkish lira. For an entrepreneur producing products of medium and high technological complexity, the amount is 6 times higher than the amount of support for an entrepreneur producing low-added value products, and amounts to six million Turkish liras. A prerequisite is the repayment of 70% of the amount of support;

production and commercialization of products in the field of medium and high technologies, which will make a significant contribution to the country's economy. The repayment share will be 30% of the above-mentioned support amount.

As part of the investment attraction program, Turkey grants foreign investors the same rights in full as the national capital. The main provisions are laid down in the Law of the Republic of Turkey "On Foreign Investments". The main criteria for evaluating foreign investment projects are their technological level, competitiveness, export potential, and the possibility of involving local resources for their implementation. Of no small importance, as already mentioned, is the geographical aspect.

The territorial location of the projected facility and the amount of invested capital are the main indicators for an investor to receive a so-called "Incentive Certificate", that is, special approval from the General Directorate for Foreign Investment, which gives the right to enjoy benefits during the implementation of the project, namely partial or complete exemption from customs duties and other taxes, access to preferential loans, government grants and others.

When issuing an "Incentive Certificate", it is taken into account to what extent the attracted sources of financing are expected to be used in the implementation of the project. The ratio between own and attracted capital is the self-financing rate; it can be no more than 40% for investment projects in "priority areas", 50% in "normal areas" and 60% in "

developed" ones. The exceptions, which do not take into account the regional aspect, are investments in the organization of aviation (Air-Kargo) and marine (Ro-Ro) transport services – 25%, as well as the construction and repair of yachts and ships, where the self-financing rate is set at 15%. A preferential rate of self-financing (15%) is also allowed for those projects whose implementation is expected to be fully financed from foreign sources.

The system of benefits for foreign investments marked with an "Incentive Certificate" includes customs privileges for the import of machinery and equipment not older than 5 years , raw materials and semi-finished products, spare parts.

Imported machinery and equipment imported for the purpose of implementing investment projects are fully exempt from customs duties, according to the approved list of priority sectors of the economy.

The current state policy provides for the support of enterprises establishing new production by exempting imports of raw materials and semi-finished products from customs duties in a limited volume and for a limited period.

Thus, for the implementation of new production facilities, subject to a deposit (10% of capital), duty-free import of raw materials and semi-finished products in an amount not exceeding 20% of the total value of imported or locally purchased machinery and equipment is allowed for up to 3 months.

For the implementation of investment projects in priority areas, subject to a deposit (10% of capital), duty-free import of raw materials and semi-finished products in an amount not exceeding 30% of the total value of imported or locally purchased machinery and equipment is allowed for up to 4 months.

For the implementation of large projects, duty-free import of raw materials and semi-finished products is possible for an amount not exceeding 40% of the total cost of imported or locally purchased machinery and equipment for up to 6 months.

Additionally, exemption from customs duties is provided for machinery and capital equipment imported for the implementation of investment projects in the electronic industry, agriculture and agro-industrial complex, tourism, natural gas transportation, ship repair, education, construction and hospital equipment, and more.

In cluster support programs, according to the Law of the Republic of Turkey "On Research Centers", benefits are provided to clusters or a group of enterprises in competitive sectors. Based on this project, the Ministry of Economy launched a mechanism to support clusters to assist industrial and/or commercial enterprises classified according to needs, scale, and availability of equipment.

There are 36 technology development zones in Turkey, uniting 3,000 technology development companies exporting services and products worth about 900 million US dollars. The Law of the Republic of Turkey "On Technology Development Zones" defines technology development zones for companies using advanced technologies, manufacturing and developing technologies or software. The advantages of technology development zones are

the provision of offices for rent with infrastructure; exemption from corporate income tax received from software development and R&D activities, exemption from value added tax (hereinafter referred to as VAT) is provided for the supply of application software produced exclusively in technology development zones.

The industrial policy of the Russian Federation is regulated by the Federal Law of the Russian Federation "On Industrial Policy in the Russian Federation", adopted in 2014. One of the objectives of the industrial policy is:

1) the formation of a high-tech, competitive industry that ensures the transition of the state's economy from an export-raw material type of development to an innovative type of development;

2) ensuring employment of the population and improving the standard of living of citizens of the Russian Federation.

In the field of industry, the Law provides for measures of financial, information and consulting support for business entities. It provides support to entities engaged in scientific and technical, innovative, and foreign economic activities in the field of industry, as well as in the framework of human resources development.

Stimulating demand for innovative products is carried out, among other things, through rationing in the field of procurement of goods, works, and services for state and municipal needs.

Financial support is provided to organizations engaged in innovative activities in the provision of engineering services.

Support is provided to manufacturers of industrial products that introduce into production the results of intellectual activity related to priority areas of development of science, technology or critical technologies.

The provision of support to business entities in the field of human resources development is carried out in the form of:

support for organizations engaged in educational activities for additional professional programs for employees by providing financial, informational and consulting support;

providing educational, methodological, scientific and pedagogical support to business entities;

financial support for business entities involved in the creation of organizations that carry out educational activities on additional professional programs for employees of these entities and ensure the coordination of theoretical knowledge with practical skills and abilities; other activities related to the provision of support to business entities in the implementation of educational activities under additional professional programs.

System-wide measures provide for a financial package: the formation of a financial reserve in the amount of up to 300 billion rubles; the creation of a guarantee fund for restructuring loans to companies affected by the deterioration of the situation due to the spread of a new coronavirus infection. The established special commission provides

operational support in terms of restructuring loans, debts, or even with direct subsidies; granting the Government of the Russian Federation the authority to establish procedures for obtaining deferrals (installments) for the payment of taxes, fees and contributions, as well as to determine the grounds and procedure for granting such deferrals (installments), prolong the deadlines for submitting tax returns and tax reporting; expand the list of measures to support the budgets of subjects of the Russian Federation faced with a drop in tax revenues.

The Entrepreneurship Development Fund of the Russian Federation implements financial support programs for enterprises:

aimed at the introduction of modern technologies included in the list approved by the Government of the Russian Federation for the production of industrial products competitive on the world market (Special investment Contract). There are also counter-obligations to achieve a certain volume of production and sale of products, pay taxes in a certain amount, and create a certain number of jobs.

For enterprises engaged in R&D, the introduction of new technologies or the development of high-tech products, as well as those who need to modernize production to produce competitive products, subsidies are provided to compensate for part of the costs of conducting R&D on modern technologies as part of the implementation of innovative projects. The main counter obligations relate to the achievement of the limit value of the target indicator (indicator) established by the interdepartmental commission for the relevant modern technology.

- in order to create conditions for increasing the productivity of manufacturing enterprises, a targeted loan is provided with an interest rate of 1% per annum. The loan covers the costs of enterprises for the development or transfer of technology, including development and development work, control and certification measures necessary for the implementation of the project; purchase of consumables, including raw materials and resources for testing equipment and technology; engineering, including ensuring the necessary adaptation of technological equipment, computer, server, network equipment and engineering communications, software and hardware complexes, adaptation and (or) processing (modification) of software; acquisition of ownership for the purposes of technological re-equipment and modernization of production of Russian and (or) imported industrial equipment, both new and used (including accessories, technological equipment, repair kits), as well as its installation, commissioning; for the general economic expenses of the project, including the costs of performing management and maintenance functions.

The experience of creating and operating free (special) economic zones of various types in the global economy is enormous. Today, there are about 5,400 free (special) economic zones of various types in the world. At the same time, more than 1,000 have been created over the past 5 years and more than 500 are planned for the coming years. With a total number of employees of at least 4 million and the volume of exports over $ 30 billion through such zones, we can talk about their 15-20% share of world trade turnover. It is difficult to

name a country that, at one stage or another of its development, would not turn to this tool to solve economic problems. The number of SEZs around the world continues to grow, which increases competition for investors between them.

Of the total number of economic zones in the world, 30% of them remained unrealized, and of the 70% that were realized, only 1% achieved significant success, these are well-known SEZs: Jebel Ali in Dubai, the Shenzhen and Shanghai SEZ in China, the Katowice SEZ in Poland, Jurong in Singapore, Shannon in Ireland, etc., while the experience of development of advanced SEZ shows that the critical mass of projects in the zone is filled 6-8 years after the completion of construction of the necessary infrastructure.

Almost half of all SEZs in the world are concentrated in Asian countries, where China, Vietnam, the Philippines, India and Indonesia are the record holders. For example, the number of free economic zones in China reaches 187, and in Vietnam and Indonesia – 185 and 115, respectively. At the same time, only 2 SEZs were created in Ireland.

The distribution of free economic zones by regions of the world is as follows: Asia accounts for 43%, America – 23%, Europe – 19%, the Middle East – 9% and Africa – 5%.

In international practice, five main motives for the creation of SEZs are most clearly distinguished: 1) "oasis"; 2) "employment"; 3) export; 4) attracting investments; and 5) development of depressed territories. Global trends in the development of SEZ

All global trends in the development of the SEZ are united by the desire to strengthen the competitiveness of the zones. The following trends in the development of SEZ can be distinguished.

The growth in the number of private management companies

In recent years, the share of private management companies has been growing all the time . More than 70% of the created SEZs are managed by private companies.

Development of new types of SEZ

The number of possible types of SEZ is growing all the time. Countries are experimenting with zones, trying to find the most optimal ones.

The growth in the number and diversification of services in the SEZ

The growing competition between SEZs in different countries and globalization are constantly forcing to increase the number of services provided, their quality and develop new types of services that may be of interest to investors, replacing the traditional concept of focusing on tax and customs preferences.

Using the SEZ to test reforms

More and more countries are following the successful example of foreign countries (for example, China) and using SEZs to test new models of management and regulation, then extending the SEZ regime to the entire territory.

The models of development of free economic zones in Asian countries and, in particular, in the People's Republic of China are noticeably diverse.

The institutional structure can be considered on the example of the SEZ "Tianjin". The management company is responsible for budgeting for the construction of infrastructure facilities, for attracting investments in the SEZ, and also selects and registers new participants . Subsidiaries and departments of the management company consist of bodies that are responsible for construction work, marketing activities, provision of utilities, etc. Other subsidiary bodies provide additional services, such as architectural design and technical support.

The choice of a model of administrative and economic management of a special economic zone depends on its type and size of territory, the peculiarities of the country's state structure, and the development of the private sector. Summarizing the experience of the functioning of free economic zones in the world shows that the establishment of special regimes and mechanisms for customs taxation, taxation, subsidies, pricing, and a special currency regime attracts significant financial, material, technological, and labor resources. As a result, economic potential is rapidly developing, foreign exchange earnings are increasing, the domestic market is saturated with competitive goods and services, and exports are significantly increasing.

The UAE's annual economic development reports note the active development of special economic zones. The first of them appeared in Jebel Ali (Jebel Ali Free Zone) in 1985. Now there are more than 20 of them and several more are in the process of being created. There are economic zones in each of the seven Arab Emirates. More than half of the zones are located in the Emirate of Dubai. The Jebel Ali zone, located in Dubai, continues to be the largest and most famous – it employs about 5,500-6,000 companies from more than 120 countries around the world. It is the largest and fastest growing economic zone in the world.

The existing economic zones in the UAE can be divided into four types: free trade zones, production zones, technical and implementation zones, and service zones. This classification is quite conditional. The UAE is characterized by the presence of complex zones that cover different sides of export-import, production and innovation activities, which is why their internal structure is the most complex.

Each of the Arab Emirates is an absolute monarchy, and the state, represented by the government and the emirs, is the main initiator of the creation of a special economic zone (hereinafter – SEZ) on the territory of the country. The management of the zones is usually carried out by state-owned companies (for example, Dubai Holding). The conditions for attracting residents and successful business operation in economic zones are almost the same for all zones of the UAE. To a greater extent, they differ in their geographical location and the opportunities provided to companies in each specific zone.

The UAE government has legislated various tax and customs benefits for residents of economic zones.

In addition to benefits, residents of economic zones in the UAE are provided with a number of different services, for example, subsidizing water and energy supplies. The

developed transport infrastructure is one of the main reasons for the attractiveness of the economic zones of the United Arab Emirates for residents: the proximity of ports, international airports of the most modern level, a developed road network, etc. The UAE government invests heavily in the development of SEZ infrastructure, using the most modern technologies in the design. In addition, the UAE has a high availability of the most modern communications – wireless communications, fiber-optic networks, etc. The most common types of activities of resident companies in production zones are: petrochemistry, textile and light industry, jewelry production, pharmaceutical industry.

In Poland, SEZs represent one of the classic examples of successful interaction between the state and business.

The state fully ensures the formation of all necessary infrastructure. At the same time, land plots are sold to the participants of the SEZ, taking into account the funds invested by the state.

At the same time, in Poland, the SEZ has a slightly different approach to stimulating business. If world practice assumes exemption from paying any taxes, then in Poland, SEZ participants are presented with a certain account, which is formed in the amount of 25-55% of the capital costs incurred by the SEZ participant.

The calculation of taxes, fees and payments to the budget takes place as usual, but payment is made by "debiting" from such an account.

The management company-administrator of the SEZ has a wide range of functions.

In the Russian Federation, the SEZ is understood in the same way as in Kazakhstan – a part of the territory of the Russian Federation, which is determined by the Government of the Russian Federation and in which a special regime of entrepreneurial activity operates, and the customs procedure of a free customs zone can also be applied.

At the same time, there are a number of differences from Kazakhstan's SEZs. Thus, in Russian SEZs, they do not establish a list of priority (permitted) types of activities, but divide them into types:

1) industrial and industrial special economic zones;
2) technical and innovative special economic zones;
3) tourist and recreational special economic zones;
4) port special economic zones.

SEZ residents are granted tax preferences for VAT, excise taxes, income taxes and corporate property taxes (from 5 to 10 years), as well as land (for 5 years) and transport taxes (from 5 to 10 years).

At the same time, preferential rates have not been reduced to 0 and are increasing.

In 2016, for a number of reasons, the Russian Federation decided to abolish 10 SEZs, 8 of which are tourist (some of the SEZs remained on paper, in some of them residents do not carry out activities, in some there are no residents at all). A similar experience of the

operation of tourist SEZs is quite expected in Kazakhstan (previously, the Burabai SEZ functioned, and recommendations for the creation of tourist-oriented SEZs periodically arise).

Thus, the experience of creating and developing free economic zones in the world indicates that benefits are necessary for the successful development of free economic zones, the duration of which depends on each country, the strategy for developing the existing economic potential, material resources, and labor. The choice of management in the SEZ also determines the effectiveness of the operation and development of the SEZ. For example, in many countries, in order to stimulate the development of SEZs, tax and customs preferences are provided, expressed in benefits for income tax, property tax, customs payments, value added tax, and land taxes.

The issue of creating free (special) economic zones was not ignored in the former USSR, where, since the late 80s, under the influence of the rapid development of free economic zones in China, Taiwan and South Korea, close attention was paid to the study of this issue. However, this process coincided with the difficult crisis transition of the country's economy to market relations, which is why its development underwent significant adjustments at different stages.

In the context of a pandemic and against the background of unstable and low oil prices, a struggle is unfolding on the world stage not only for new investments, but also for the salvation of its own industry.

Governments of different countries are doing a lot of work to improve and create new conditions for the development of their industry.

Kazakhstan, which has huge potential, needs to use all opportunities to create a strong and competitive economy.

In order to develop the economy, it will be necessary to work on improving the mechanisms for the development of the industrial sector.

Special economic zones are one of the tools.

SEZs are used all over the world as an effective infrastructural tool of industrialization and are an important link in the implementation of the principles of an open economy. Their functioning is associated with the intensification of the country's foreign economic activity.

Currently, different approaches in management and financing have affected the uniformity of development of each SEZ.

Thus, in world practice, the average construction time of a complete SEZ infrastructure takes 2-3 years (UAE, Poland, China). In Kazakhstan, the basic infrastructure has been under construction for at least 5 years.

The experience of developing advanced SEZs shows that the critical mass of projects in the zone is filled 6-8 years after the completion of the construction of the necessary infrastructure.

Despite the measures taken and the results achieved, the potential for the development of SEZ and IZ has not been fully disclosed, which opens up prospects for their further development.

2.1. Global industrial development trends

There are certain vectors of development of the global economy, which are followed by all developed and developing countries. To date, 7 global megatrends have been identified that will have the greatest impact on the manufacturing industry in Kazakhstan. These trends must be taken into account when implementing industrial policy.

2.1.1 Technological development based on digitalization

Digital technologies are being actively introduced into all spheres of human life and production processes. In addition to such basic digital technologies as the industrial Internet of Things, cloud services, 3D printing, BigData, 5G, augmented and virtual reality, which have already become a reality today, important trends are quantum services, smart spaces, biochips, neural processors, edge computing (Edge), augmented analytics, visual and voice services of product search, mixed reality.

According to Accenture, virtual factory technologies will become widespread in 2030: self-organizing and self-sustaining factories, smart services. Whereas Gartner predicts that in ten years artificial intelligence (AI) technologies will become widespread.

Digital technologies affect not only industry, but also change the characteristics of a " typical" city. Thus, new technologies will expand the possibilities of spaces that people visit, and will allow them to live and work "smarter". Such technologies include 4D printing, self-healing systems, smart dust, silicon anode batteries (whose capacity is much larger than usual), stereo displays, flying autonomous vehicles.

The active introduction of digital technologies allows enterprises to strengthen competitiveness through the offer of a customized (individualized) product, a significant reduction in the introduction of new products to the market, the creation of self-optimizing, adaptive and autonomous industries, and the offer of related advanced "smart" services.

2.1.2. The shift of economic power towards Asian countries

Global economic trends are changing the direction of demand from emerging Asian markets. The rising standard of living in Asian countries contributes to the formation of a middle class, the demand from which is directed at the consumption of inexpensive but high-quality end-use goods. This trend contributes to the development of the economy of simple things.

2.1.3. Regionalization versus globalization

Support for globalization is gradually shifting to the Asian region, while Western countries are increasingly resorting to restrictive measures and protectionist policies. The world is moving from global competition between countries to competition between regional blocs. In the context of the emergence and continuation of "trade wars" against partner countries in the economic communities (the Eurasian Economic Union, the Shanghai

Cooperation Organization, etc.), Kazakhstan has the opportunity to create and develop " offshore production".

2.1.4. Green Economy

The issues of transition to a "green economy" are becoming increasingly important, since the increase in environmental problems – air, land, and water pollution – is already having a negative impact on the climate and human health. Decisions are being made everywhere to abandon industries that cause great harm to the environment, and penalties for non-use of wastewater treatment plants and equipment are increasing.

The EU's cross-border carbon tax is on the global agenda. This will affect domestic producers of ferrous and non-ferrous metals, cement, fertilizers and other goods.

2.1.5. Closed production cycles (loopeconomy)

The economy of a closed production cycle is becoming increasingly relevant in the context of depletion of natural resources and dangerous environmental pollution for humanity . Such an economy implies a constant cycle of materials in production and consumption, eliminating the formation of waste that accumulates in the environment. Such a business model provides for the need for preliminary planning of measures for the disposal of manufactured goods and the return of materials to the production cycle. In addition, a closed production cycle makes it possible to reduce production costs.

2.1.6. Strengthening the role of cooperation (coopeconomy)

The cooperative economy recognizes the right to personal benefit in a structure that supports each of its members. In a cooperative economy, most of the industry, trade and commerce is managed through cooperative organizations.

In a cooperative economy, the activities of state-owned enterprises will be aimed at supplying materials and services to manufacturers at a reduced price. The cooperative business will produce all kinds of goods and services, from basic necessities to luxury goods, including healthcare, legal services and agriculture. All these enterprises will operate as commercial enterprises, but the profits will be shared among the members, not the managers.

2.1.7. Strengthening the role of the state in industrial and innovative development

Under the current conditions, the role of the state in the implementation of industrial and innovation policy is being strengthened by further improving institutional, infrastructural, financial, fiscal and other types of support, as well as initiating target vectors of scientific and technological development in order to stimulate innovative and technological development of the manufacturing industry.

3. Vision of industrial and innovative development

The main directions of the state policy of industrialization, as a catalyst and basis for the diversification of the entire economy, are the creation of a technologically progressive industry, modernization of fixed assets, digital transformation of enterprises focused on creating products of medium and high-added value, with a focus on inclusion in global supply chains.

In accordance with the main directions of the National Development Plan of the Republic of Kazakhstan until 2025, the emphasis in the state industrial policy will be placed on the creation of an export-oriented economy with high added value.

The export orientation is dictated by the need to expand markets for the growing volume of goods and services and integrate into global value chains. Export-oriented industrialization will make it possible to bring new Kazakhstani goods to foreign markets, including high-value-added goods.

Based on these trends, a number of strategic industries can be identified in the medium term.

In metallurgy

Taking into account the issues of national security in the light of the unstable geopolitical situation, in metallurgy one of the strategic materials is rolled metal, which belongs to the most important structural materials. It is used in almost all branches of modern industry, including mechanical engineering and the construction industry.

Ferrous and non-ferrous rolled products play an important role in modern life, contributing to the development of production and accelerating construction processes.

Given the task of increasing the volume of construction, the shortage of domestic rolled metal can lead to an increase in the cost of housing and, as a result, to social tension among the population.

A special breakthrough in the transition to high-level processing has been achieved in the aluminum industry. The primary aluminum produced has become the foundation for further development of aluminum processing:

- aluminum profiles;
- aluminum radiators;
- aluminum alloys, powders, wire and more.

For example, the 5th level project for the production of automotive aluminum wheels, with a capacity of up to 1 million wheels per year from domestic alloyed aluminum.

This project has been successfully integrated into the production chain of the domestic automotive industry.

In the next 6 years, the priorities of development in ferrous metallurgy will be the production of new types of composite alloys using magnesium-chromium steel alloys for heavy machinery, in non–ferrous metallurgy - aluminum alloys with the addition of titanium and silicon for use in the automotive and aviation industries.

At the same time, constant technological progress increases the global demand for products made of rare earth metals. At the same time, it is worth noting that the production with high added value and corresponding technological complexity is also the products of high-level processing.

Kazakhstan has significant reserves and prospects for expanding the mineral resource base of rare and rare earth metals.

Considering that it is the production of rare and rare earth metals that will play an important role in the development of the global economy in the future, it is necessary to develop joint projects involving global players in such priority areas as mining, breeding, obtaining pure rare and rare earth metals and their compounds, with the further development of semiconductor, electronic, instrument-making and other advanced industries of science and technology.

Based on world practice, the further development of the rare earth metals industry should provide for an increase in state support in stimulating the production of high-level products.

Kazakhstan is implementing a new industrial policy aimed at creating a high-performance and export-oriented manufacturing industry.

The latest developments in high-tech sectors of the economy (aircraft engineering, nuclear energy, rocket engineering, automotive industry, microelectronics, mechanical engineering) require guaranteed provision and creation of new special materials that can meet the growing demands of manufacturers of high-tech products. The basic elements for the successful development of these areas are rare metals, including rare earth metals. The use of rare and rare earth metals and their compounds is associated with their unique properties such as refractoriness, polyvalence, hardness, ductility, creep, etc.

Currently, four key areas: additive technologies, polymer and composite materials, rare and rare earth metals, new structural and functional materials and substances are global trends .

Modern composite materials have sufficiently high strength, low thermal conductivity, and high electrical insulation properties. The subsequent development is associated with improving the quality and expanding the functionality.

The development of the manufacturing industry, along with other areas, requires research and development work aimed at creating technologies for the production and synthesis of new composite materials using domestic rare metal raw materials, contributing to the development of high-tech production of the manufacturing industry in the Republic of Kazakhstan and ensuring the competitiveness of Kazakhstani manufacturers, as well as reducing the import dependence of enterprises.

To date, in the republic, the production of rare earth metals is carried out at specialized enterprises, the production facilities of which do not correspond to the modern level of technology, and also work completely on toll-free raw materials (tolling).

To avoid dependence on raw materials, increase the volume of production of rare and rare earth metals, as well as increase the range of products, it is necessary to develop the processing of imported raw materials in the form of waste from metallurgical production of

rhenium sulfide and heat-resistant nickel alloys to produce rhenium and other rare metals through technical re-equipment and modernization of the production of RSE Zhezkazganredmet.

An important measure to stimulate and load domestic processing enterprises is the provision of metal raw materials to metallurgical and related enterprises for the production of high-level products, which occupies more than 39% of the manufacturing industry.

As a systemic measure, in 2022, the Law of the Republic of Kazakhstan "On Industrial Policy" included the competence of the authorized body in the field of state stimulation of industry to develop and approve the rules for the provision of raw materials. Also, in order to implement the norms of the Law of the Republic of Kazakhstan "On Industrial Policy", the Order of the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan № 305 dated May 30, 2022 "On the rules for the provision of raw materials for a domestic processor" was adopted. According to these Rules, the low price formula will be applied to five types of raw materials: LME copper minus 5%; LME aluminum minus 5%; LME lead minus 2%; LME aluminum rod minus 4%; LME copper rod minus 5% plus the amount of processing.

Mechanical engineering

Localization is a strategic direction in the engineering industry as a whole, as it contributes to achieving economic and technological security, the country's independence from geopolitical and macroeconomic changes. High dependence on imported raw materials and components is still a significant problem in the industry. More than 81% of the domestic market's demand for machine-building products is provided by foreign supplies (up to 60% of imports from Russia, China and Korea). Assembly plants with a minimum level of localization are mainly organized on the territory of the Republic of Kazakhstan.

In the automotive sector, the production of automotive components (auto glass, stamping, bodies, gearboxes, axles, gearboxes, discs, plastic interior and exterior products), the production of electric vehicles and, in particular, the production of batteries for electric vehicles are strategic.

In the railway engineering sector, it is necessary to master foundry, forging and stamping for enterprises.

In the agricultural machinery sector, it is necessary to establish the production of components (cabins, glass, wheels, plastic products of the interior and exterior, etc.).

In the mining engineering sector, it is necessary to create foundries (workshops) for the production of blanks for the machine-building industry.

In the oil and gas engineering sector, it is necessary to improve the quality of products manufactured to meet the requirements for certification according to international standards for purchased products (API, ASME). The main products are customized machines and equipment for the needs of each customer and oil and gas fields. These are mainly shut-off valves, pumps, heat exchangers, and oilfield equipment.

In the electrical engineering sector, the commissioning of transformer steel production is a strategically important area. Also, an extremely important area is the production of electrical distribution equipment and products aimed at interacting with electricity. The issues of the development of electric infrastructure and the functional use of electricity will further intensify as a result of the growth of the population and the industrial potential of the country.

In the electronic industry sector, strategically important areas are sectors related to the localization of production of communication and computing equipment, devices and sensors for automation and digitalization of technological processes and productions in all sectors of the real economy, including Smart City projects, as well as electronic devices and devices for the aerospace and defense industries.

Given the human and scientific potential, as well as the cost of labor and basic utilities, it is necessary to create the most favorable conditions for attracting global electronics companies to organize assembly plants while creating appropriate scientific laboratories and institutes. These conditions should include economic incentives, simplification of all processes for the import of components and export of finished products, as well as for training and R&D implementation.

Chemical industry

The agrochemistry sector is important in the world. The most competitive market in the world is considered to be the nitrogen fertilizer market, accounting for 60% of the total market, 25% for phosphorous and 15% for potash fertilizers. The agrochemistry sector is the most promising for Kazakhstan, as it has an ever-growing domestic market and export potential.

Polymers are one of the most demanded chemical products. At this stage, polymer production is the most dynamically developing sector in the global economy. Polymers are widely used in many industries, displacing the traditional markets of paper, cotton, wool, leather, wood, etc. The volume of their consumption is growing by 5-6% annually. There is a wide range of polymers, the basic ones include polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC), polyethylene terephthalate (PET), polystyrene (PS), polyurethane (PU), synthetic rubbers (SR) and many other polymers and copolymers.

Production of building materials

The development of goods with higher added value is strategically important for the construction materials industry. Such products include finishing materials: sanitary ware, ceramic tiles, wallpaper, linoleum, flat glass, etc. This segment of the industry remains import-dependent. At the moment, one of the possible directions of development is the production of ceramic tiles. Thus, based on the available reserves of kaolin clay deposits (more than 50 deposits), it is possible to develop the production of this product. However, the lack of mining and processing plants for the production of necessary raw materials for ceramic tiles is a limiting factor. The possibility of organizing the production of sanitary ware (sanitary ware) is also promising. This product is characterized by high demand both in the

domestic market of the country and in the foreign markets of the macroregion. There are extensive proven reserves of raw materials for the production of sanitary ware on the territory of the country, but their extraction and enrichment are also not organized. Consolidation of production of rough ceramics goods on the basis of existing ceramic tile enterprises can reduce the cost of infrastructure organization, purchase of land, construction of household and administrative facilities.

Increasing the capacity of thermal insulation materials will also help reduce the dependence of the domestic market on imported supplies. The development of a gas chemical complex with the production of polypropylene and the use of polymer raw materials in thermal insulation will have a positive impact on providing producers with raw materials.

At the same time, it should be noted that the preservation of the production of basic goods such as cement, commercial concrete, wall materials (ceramic, silicate bricks) is important due to its primary application in the construction sector.

It is also important to promote goods produced in Kazakhstan with unique characteristics that are in demand on the world market (for example, the production of chrysotile and chrysotile cement products), and protect the interests of such industries on international trading platforms.

Light industry

Despite the annual growth in the production of light industry products, the security of the domestic market is only 9%. With the available raw materials, Kazakhstan's light industry is poorly developed in the production of semi-finished products and accessories, which hinders the competitiveness of the finished products segment.

In general, in terms of production, the industry is represented mainly by large and medium-sized enterprises, which in most cases are focused on government orders (workwear, uniforms, etc.).

At the same time, the prospect of the development of the domestic industry lies at the heart of the development of the commercial segment. In this industry, the main strategic guideline should be the development of high-margin areas through the formation of their own commercial brands. In this aspect, it is necessary to focus on the development of marketing, design, distribution, as well as the production of finished products, national brands in the field of clothing and footwear, which will increase the added value of products, expand the geography of exports, and multiply the share of the industry in the manufacturing industry.

Furniture manufacturing

Kazakhstan has growth reserves for the production of furniture products. Thus, in 2022, the market for the consumption of furniture products in the country amounted to 237.4 billion tenge, where the share of domestic production accounted for 25.2%.

At the same time, the country's furniture companies are almost completely dependent on the supply of imported raw materials (chipboard, fiberboard, MDF), which mainly come from

Russia and Belarus. Thus, in 2022, the Republic of Kazakhstan imported plate products in the amount of 287 million US dollars.

In order to reduce the dependence of domestic furniture enterprises on imported raw materials, chipboard and fiberboard production should be classified as strategic industries.

A set of incentive measures is provided for the implementation of strategic production of goods of medium and high-level processing, aimed at domestic and foreign markets.

Innovations in industrial development are the reformatting of support for industries and the transition to stimulating the development of production of specific types of processed products of high and medium processing. Thus, based on international experience, a list of priority goods with high added value and product complexity has been formed. This list consists of priority goods forming the spheres and branches of the manufacturing industry that determine the long-term competitiveness of the national economy and the concentration of support measures, with the exception of commodity items belonging to the "commodities" segment (raw materials, near-raw materials positions, the volume of production and trade of which is greatly influenced by the external environment, namely the prices of raw materials at the global stock exchanges).

State incentive measures are provided to manufacturing enterprises engaged in the production of products included in the List of priority goods approved by the order of the acting Minister of Industry and Infrastructure Development of the Republic of Kazakhstan dated May 30, 2022 № 306 (registered in the Register of state registration of regulatory legal acts № 28264). This will ensure the transition of enterprises to an export-oriented development model by increasing the level of labor productivity and product quality.

The basic criteria for including specific products in the list are the technological complexity of the products produced, export potential and consumption potential in the domestic market.

The list consists of 3808 items of goods on 6 signs of commodity nomenclature of foreign economic activity and covers the branches of manufacturing industry.

Also, in order to ensure the competitiveness of industry, according to the list of priority goods, the work will be carried out to attract investments.

A mechanism for providing processing industries with raw materials will become a means of increasing the efficiency of enterprises, creating conditions for development and diversification. The mechanism is aimed at creating favorable pricing for raw materials, including those that are not produced and have no prospects for production within the country , but are used in manufacturing of export-oriented products.

Industrial policy is aimed at creating conditions to stimulate the competitiveness of enterprises in the manufacturing sector that are able to adapt to changes in geopolitical and economic processes.

In order to ensure the sustainable development of the manufacturing industry by increasing the production of competitive, high-tech, export-oriented products and moving

away from the raw material model of development, the Law of the Republic of Kazakhstan " On Industrial Policy" has been developed.

The main objectives of the Law are:

improving the welfare of the country's population;

creation and development of modern industrial infrastructure; development of new high-tech industries;

improving the competitiveness of production by increasing labor productivity;

increasing the self-sufficiency of the national economy.

4. Basic principles and approaches of development

The principles and approaches of industrial and innovative development will be implemented within the framework of the Law of the Republic of Kazakhstan "On Industrial Policy of the Republic of Kazakhstan", as well as taking into account the obligations of the Republic of Kazakhstan within the framework of membership in international economic organizations.

4.1. Principles for implementation of industrial and innovation policy

The concept of the manufacturing industry will maintain continuity and be based on the following principles:

1) focus on the production of processed products with high added value;

All horizontal policies to improve the industrial and business climate, hard, soft, innovative infrastructure and digital transformation will be taken into account.

In order to stimulate the production of goods with high added value and product complexity, priority goods of medium and high-level processing will be identified (hereinafter – priority goods).

2) integration of industrial-innovative and territorial development;

Efforts will focus on the development of specialized factors mainly at points of spatial growth to achieve agglomeration effects that stimulate competition, increase the complexity of local markets, reduce transaction costs, and stimulate the development of competitive territorial clusters.

In order to solve systemic problems in the manufacturing industry, the industrial specialization of the regions will be taken into account, as well as the potential for balanced (spatial) development and the provision of appropriate government incentives.

In addition, in order to accelerate the development of cross-border cooperation, as well as the common market of goods, works and services, attention will be paid to unlocking the industrial potential of neighboring regions.

3) orientation to foreign markets, taking into account internal opportunities;

The creation of domestic added value is one of the most important factors in the development of export potential and increasing competitiveness in foreign markets.

The consistency of the export-oriented industrialization policy will be maintained, based on the creation, maintenance and development of industries oriented to the world market and

viable in conditions of global competition, which must be combined with reasonable protection and development of the domestic market.

4) the balance of strategic interests of the state, society and business;

The tools of planning, implementation and monitoring of industrial and innovative development provided for by the state planning system, the Law of the Republic of Kazakhstan "On Industrial Policy of the Republic of Kazakhstan", the Entrepreneurial Code of the Republic of Kazakhstan and the established ecosystem of development institutions will be used. Flexibility in the implementation of the policy will be implemented through constant feedback from the public and business, ensuring high susceptibility to changing conditions.

5) the effectiveness and targeting of incentive measures.

The implementation of the policy will be focused on achieving concrete results consistent with the country's long-term strategic development goals.

As part of the new approach to the implementation of incentive measures, it is envisaged to shift the focus to efficient manufacturing enterprises that are aimed at technological modernization and digitalization of production, with a focus on exporting their products, as well as saturation of the domestic market.

When providing state incentives to manufacturing enterprises, the operators will focus on priority goods.

4.2. Development approaches

The policy of industrial and innovative development will be balanced between direct and systemic support, taking into account the obligations of the Republic of Kazakhstan within the framework of membership in international economic organizations.

1) Direct measures to stimulate enterprises

The practice of applying direct state incentive measures provided for by the legislation of the Republic of Kazakhstan will continue, which will be provided at all stages of enterprise development, which will lead to increased competition through the formation of a critical mass of operating enterprises.

In order to encourage enterprises to switch to an export-oriented development model, existing incentive measures will be improved and new ones will be introduced on a regular basis, excluding unclaimed and ineffective measures.

To assess the effectiveness of the implementation of measures of state stimulation of industry, the authorized body in the field of state stimulation of industry develops and approves forms designed to collect administrative data in the field of industry, in coordination with the authorized body in the field of state statistics.

As part of increasing the competitiveness of domestic enterprises through effective government incentives, the mechanism for their provision will be improved and revised. The essence of the new approach should be to conduct a preliminary analysis of business entities, which includes an analysis of financial stability, technical equipment of the entity, business processes, strategy, its capabilities, results, etc.

When providing government incentive measures, the readiness of enterprises to produce the most promising goods from the point of view of international competitiveness will be taken into account.

In order to increase the effectiveness of government incentives for industry, counter obligations of enterprises will be introduced, which provide for a set of obligations of the enterprise to fulfill economic indicators of production, including socially significant ones.

The authorized body in the field of development of state incentives for industry has approved the rules for the definition and application of counter-obligations of enterprises, which regulate the procedure for the definition and application of counter-obligations in the provision of state incentives to industry. The set of counter-commitments will be interconnected with the strategic goals of the state policy of industrialization and improvement of the welfare of the state.

At the same time, taking into account the different focus of government incentive measures, operators, when providing measures, will determine additional obligations corresponding to the objectives of the measures provided.

It also provides for the introduction of liability for poor-quality and/or untimely fulfillment of obligations on the part of enterprises (refunds, compensation, fines, penalties). This will help to avoid unfair use of public resources, increase the effectiveness of government incentives and subsequent monitoring.

In addition, in order to ensure transparency in obtaining state incentive measures, it is necessary to open the access of state audit bodies to information constituting a banking secret by including in the rules, standard contracts relevant norms providing for the consent of the recipient of state incentive measures to disclose banking secrets to state audit bodies. At the same time, this condition must be ensured at all levels of the public and quasi-public sector.

Operators of state incentive measures should take comprehensive measures to increase the transparency of financial transactions of state incentive measures for the provision of funds in terms of developing and approving standard conditions for disclosure of information about recipients of state incentive measures.

The national development institutes and the national management holding will provide information on the included counter obligations within the framework of government incentives issued to manufacturing enterprises, including within the framework of the Agreement on Improving Competitiveness (hereinafter referred to as the Agreement) to the National Institute for Industrial Development.

The agreement is a package solution for obtaining a set of state incentive measures concluded between the state and the subject of industrial and innovative activity on the terms of counter obligations. The conclusion of the Agreement will grant the subject of industrial and innovative activity the right to receive:

a set of state incentive measures, including the provision of an individual project manager to provide comprehensive consulting support on all measures of state incentives for industry,

as well as assistance in improving competitiveness by evaluating the subject of industrial and innovative activities using the EFQM model.

The operator under the Agreement will be the National Institute for Industrial Development, which will carry out the selection, support and subsequent monitoring of the implementation of the Agreement.

The agreements will be concluded within the framework of comprehensive support on the terms of interaction between the parties for the implementation of mutual obligations and guarantees.

The Agreement will include:

consulting support on all measures of state stimulation of industry; assessment of the subject of industrial and innovative activity according to the model of the European Fund for Quality Management with recommendations for improving activities.

A competitive selection principle will be applied for enterprises that are ready to receive government incentives under the Agreement.

The system of direct government incentives will facilitate the emergence of new enterprises producing and exporting medium- and high-tech products, and thus will contribute to the qualitative development and competition of domestic enterprises in the domestic and foreign markets.

The introduction of new technologies in production requires fundamentally new skills from employees, involving knowledge in both industry and information technologies. In order to increase the competence of domestic engineering and technical personnel of manufacturing enterprises, an opportunity will be created for internships at advanced foreign plants through financing mechanisms.

Measures of state stimulation of enterprises for the production of medium and high-tech products, increasing labor productivity, industrial grants and the development of the domestic market will be provided by the National Institute for Industrial Development.

Measures of state stimulation of subjects of industrial and innovative activity to increase labor productivity will be provided by reimbursing historical costs.

The industrial grant will be aimed at modernizing the production capacities of manufacturing enterprises. This measure involves the provision of financial resources free of charge on a co-financing basis for the purchase of equipment and its introduction in production and/or for expanding the range and production of products with high added value, which in the future will effectively promote it both in domestic and foreign markets.

State incentive measures can be used by subjects of industrial and innovative activities exclusively focused on the production of products included in the list of priority goods, except for subjects whose fifty or more percent of shares (participation shares in the authorized capital) are directly or indirectly owned by the state, a national management

holding, a national holding, a national company (with the exception of socio-entrepreneurial corporations, as well as entrepreneurs established under a public-private partnership agreement).

2) Systemic support

Systemic support will focus on creating specialized factors and demand conditions for the development of the manufacturing industry in addition to other horizontal concepts to improve the industrial and business climate, support exports, attract foreign investment, and solve problems with the released labor force.

The development of specialized factors

As part of the development of specialized factors, measures will be taken to stimulate the development of industries:

industrial and digital infrastructure, including cluster development;

raw materials and components;

updating of fixed assets of enterprises, including with the introduction of elements of industry 4.0 and scientific and technical developments in the context of industries;

- fiscal measures;
- development of the domestic market;
- high-quality human capital;
- innovation and competence centers;
- testing and certification infrastructure;
- joint sales systems, industrial consulting and engineering.

The modern regional cross-section of the development of the manufacturing industry demonstrates a multi-level concentration of production, interregional and intra-regional differentiation of the quality of production infrastructure has a negative impact on the formation of the gross regional product as a whole.

In order to solve systemic problems in the manufacturing industry, the competitiveness of regions should be based on specialization in industries in which these regions have the strongest competitive advantages, as well as on the potential for balanced (spatial) development and the provision of incentive measures of state support.

The disclosure of the industrial potential and specialization of the regions will be carried out taking into account the centers of high-tech and knowledge-intensive industries in the north-eastern regions of the country, "new redevelopments" in the western regions, advanced technologies in the development of agriculture in the northern regions, as well as through the development of new energy sources and related industries in the south. In addition, in order to accelerate the development of cross-border cooperation, as well as a common market for goods, works and services with the Russian side, attention will be paid to unlocking the

industrial potential of neighboring regions; as well as the development of "growth points" (agglomerations) that will ensure the "overflow" of economic activity and prosperity to other territories through integration.

To achieve the goals of these programs and eliminate conflicting actions, interregional and intersectoral coordination of the development of manufacturing industries is necessary.

Industrial policy, which has investment and innovation components, is an integral element of the overall regional policy, and the role of local executive bodies is significant. Local executive bodies are involved in the formation and implementation of the industrial policy of the region. Regional development in the manufacturing industry until 2025 will be determined mainly by the already formed zones of advanced economic growth (implementation tools), which include: free economic zones, the implementation of projects of the Unified Industrialization Map, as well as territorial clusters.

At the same time, the definition of industrial and regional policy will be based on the results of a study of the competitive advantages of Kazakhstan's economic sectors using the Economic complexity index methodology, a study by the World Bank and other international development institutions.

Within the framework of the Manufacturing Industry Development Concept, efforts will focus on continuing the cluster approach for the development of regional production systems, taking into account the associated industrial, innovative and spatial development.

Regional business associations and local executive bodies play a key role in the development of territorial clusters.

To provide an analysis of the current state of cluster groups demonstrating a steady trend towards localization, a register of cluster initiatives will be formed by region (revelation or identification of clusters in regions and subsequent ranking). The register will be formed based on the results of a competitive selection of territorial clusters, 6 (six) pilot territorial clusters identified by the authorized body in the field of state stimulation of industry in the process of implementing the World Bank project "Improving the competitiveness of SMEs in Kazakhstan" are included in the register of territorial clusters.

Work plans for the development of territorial clusters with a concentration of efforts on clear priorities based on calculated progressive actions should demonstrate economic efficiency, taking into account competition and public-private partnership, with a gradual transition to self-financing of the program by the cluster participants themselves, with a focus on optimizing and deepening technological chains, their localization, and the development of collaborative processes.

The work plans for the development of territorial clusters will contain measures aimed at:

1) support and development of cooperation and collaboration of cluster members;

2) development of cluster human resources (trainings, advanced training, etc.);

3) promotion of the cluster and cluster products in domestic and foreign markets (organization of missions to target markets, joint participation in exhibitions, etc.);

4) innovative and technological development of the cluster (conducting joint industrial, marketing research or other research, required by the cluster, etc.);

5) creation of a business climate and infrastructure for collective use (laboratories, competence centers, service centers, showrooms, etc.) by cluster participants;

6) organization of measures to improve the quality of products or services provided by cluster enterprises (development and implementation of standards, quality assessment, etc.).

The state is the main investor at the initial stage of cluster development. In the future, the possibility of mixed (private and public) financing will be considered. Thus, concentrated groups of industrial enterprises focused on the production of competitive products or services will be formed in the regions on the basis of territorial clusters.

In order to stimulate the activities of the SEZ and its participants, new approaches to the functioning of the SEZ have been legislatively approved on behalf of the Head of State.

First, it provides for the possibility of potential participants entering the SEZ outside the priorities without applying tax and customs benefits. To do this, a separate subject structure of non-core activities is introduced, which includes exclusively the branches of the processing industry. The application of the approach will allow filling the empty territories of the SEZ and ensure maximum utilization of infrastructure facilities.

Second, in order to expand the financial opportunities of investors for further modernization and expansion of production, an early right to purchase land is provided for participants who have faithfully fulfilled their investment obligations.

Third, the procedures for adding new types of activities to the list of priority activities have been optimized, which will significantly reduce the time for making changes.

In order to further develop SEZ and IZ, new approaches to the functioning and development of SEZ and IZ in the territory of the Republic of Kazakhstan will be introduced, taking into account the world experience of developed countries:

1) the introduction of a differentiated approach to the provision of benefits to SEZ on the principle of "the more investments, the more benefits". The implementation of the approach is aimed at stimulating the attraction of large, capital-intensive industries with high added value;

2) construction of ready-made production facilities for the implementation of small and medium-sized business projects. A program for financing small industrial zones will be developed, the main purpose of which will be the construction of new (or reconstruction of existing) production facilities (according to the type of Ready built factory). The mechanism of implementation of the program includes preferential loans for the construction of industrial premises, as well as preferential lease terms for small and medium-sized businesses. This program will not be limited to the territories of the SEZ and IZ;

3) allocation of budget funds for the construction of critical infrastructure facilities for 3-5 years. For example, the critical need in the Pavlodar SEZ today is the completion of the construction of sewage treatment plants, an increase in electricity capacity through the construction of a substation in the Ontustik SEZ, a high degree of deterioration of SEZ

infrastructure facilities in the Astana – New City SEZ, it is necessary to complete the thermal supply complex;

4) legislative definition of the procedure and criteria for changing the status of industrial zones of regional and republican significance. Providing the opportunity to change the status of industrial zones from regional to republican will increase the financial capabilities of the regions to increase the potential of the engineering and communication infrastructure of industrial zones.

Assessment of industrial development

One of the tools for the formation and implementation of industrial policy is the assessment of industrial development, which provides for the analysis of legal, economic, financial and other factors affecting the development of industry. During the analysis, work will be carried out to identify key factors of production, improve the working conditions of industrial enterprises, reduce administrative barriers and solve systemic problems hindering the implementation of industrial policy. The assessment of industrial development will make it possible to systematize and solve problematic issues related to industrial development, taking into account current state priorities.

Project financing and leasing financing

The National Managing Holding Baiterek Joint Stock Company and its subsidiaries, as financial operators, will provide the following support measures for enterprises within the framework of the Concept, provided that the necessary amount of funds is received, taking into account the international obligations of the Republic of Kazakhstan.

Lending through financial institutions will continue through interbank lending through the joint-stock company "Development Bank of Kazakhstan" and conditional placement of funds in STB, leasing companies, microfinance organizations through the joint-stock company " Entrepreneurship Development Fund "Damu".

Stimulation of projects to provide engineering products: passenger cars (preferential car loans).

Financing will be carried out through the joint-stock company "National Managing Holding "Baiterek" at an interest rate of 0.1% per annum, followed by the provision of a loan to the joint-stock company "Development Bank of Kazakhstan" at a rate of 0.15% per annum, followed by the provision of a loan to STB at a rate of 1% per annum. The main conditions for lending to individuals: the loan amount is no more than 10 million. tenge, the loan term is no more than 7 years, the annual nominal interest rate is no higher than 4%, while the annual effective interest rate for the borrower should not exceed 7.5% per annum, taking into account the costs of the borrower for insurance and registration of vehicles as collateral.

2) Long-term financing through the joint-stock company "Development Bank of Kazakhstan" of projects in the manufacturing industry is carried out:

at a rate of no more than 9% for the end borrower when mixing budget funds with those attracted in the proportion of 70/30, with the company's own participation of at least 20% of

the project amount. Budgetary funds are allocated through budget lending to the joint-stock company "Development Bank of Kazakhstan" through the joint-stock company "National Managing Holding "Baiterek" for a period of 20 years;

at a rate of no more than 11% for the end borrower when mixing budget funds with those attracted in the proportion of 60/40 to finance projects in the manufacturing industry, including the creation and modernization of supporting infrastructure facilities. Financing of large investment projects worth over 7 billion tenge (over 3 billion tenge in the field of food production and light industry) is carried out for up to 20 years, and financing of projects under the Program for the development of domestic value and export-oriented industries is carried out for a period of 7-10 years. Budgetary funds are allocated through budget lending to the joint-stock company "Development Bank of Kazakhstan" through the joint-stock company "National Managing Holding "Baiterek" for a period of 20 years.

3) Export financing of domestic producers will be carried out by JSC "Development Bank of Kazakhstan" at a rate of no more than 6% for end borrowers by mixing budget funds with commercial ones in the proportion of 70/30 for a period of 20 years.

4) Financing of the working capital of manufacturing enterprises at a rate of no more than 7% for the end borrower by mixing budget funds with those attracted in the proportion of 80/ 20 to ensure the competitiveness and sustainability of the national economy. Budgetary funds are allocated by increasing the authorized capital of the joint-stock company "Development Bank of Kazakhstan" through the joint-stock company "National Managing Holding " Baiterek".

5) Financing of manufacturing industry projects is provided by the joint-stock company " Industrial Development Fund" to subjects of industrial and innovative activity, leasing financing of projects, including those included in the program of joint actions in the field of international industrial cooperation, projects for the creation of new industries and modernization of existing industries.

The subjects of industrial and innovative activity, fifty or more percent of shares (participation shares in the authorized capital) of which are directly or indirectly owned by the state, the national management holding, the national holding, the national company (with the exception of the socio-entrepreneurial corporation, as well as entrepreneurs established under the public-private agreement), are not subject to financing of manufacturing industry projects.

Budgetary funds are allocated by increasing the authorized capital and/or budget lending to the joint-stock company "Industrial Development Fund" to finance projects in light industry at a remuneration rate of no more than 3% per annum for end borrowers.

If it is necessary to increase the volume of financing of manufacturing industry projects, financing is allowed at a rate of no more than 9% for the end borrower when mixing budget funds with attracted ones in a proportion at which the share of budget funds is at least 70%, depending on the rate of attracting other funds.

The subject of industrial and innovative activity provides cash participation in the implementation of the project in the amount of at least 15% of the total amount of financing (for projects aimed at increasing the localization of production, cash participation in the implementation of the project in the amount of less than 15% is allowed). The amount of financing should be at least 80 million tenge (for light industry enterprises, at least 50 million tenge). The financing is provided for a period of no more than 20 years.

To receive financing, the subject of industrial and innovative activity submits to the joint-stock company "Industrial Development Fund" a package of documents, the list of which is approved by the internal documents of the joint-stock company "Industrial Development Fund". The procedure and terms for providing financing are determined by the internal acts of the joint-stock company "Industrial Development Fund". 6) Within the framework of leasing financing, support will be provided in the following areas:

renewal/modernization of cars and special equipment; renewal of the fleet of agricultural machinery and buses through the mechanism of leasing financing of the joint-stock company "Industrial Development Fund". Leasing financing is provided in tenge for cars and special equipment for a period of no more than 7 years, the remuneration rate for applicants should be 7% per annum, while the ratio of budget funds and other funds of the joint-stock company "Industrial Development Fund" should be 80/20. The advance payment is at least 15% at the expense of the local budget or the lessee's own funds (in case of repayment of lease payments at the expense of the republican or local budgets, financing without an advance payment is allowed). At the same time, on the bus models produced by the method including welding and painting operations, the advance payment is at least 5 %;

updating the fleet of vehicles involved in freight transportation. Leasing financing of vehicles involved in freight transportation is provided in tenge through the joint-stock company "Industrial Development Fund" for a period of no more than 7 years, the remuneration rate for applicants should be 7% per annum, while the ratio of budget funds and other funds of the joint-stock company "Industrial Development Fund" should be 80/20. The advance payment is at least 30% at the expense of the local budget or the lessee's own funds (in case of repayment of lease payments at the expense of the republican or local budgets, financing without an advance payment is allowed);

leasing financing for applicants who purchase motor vehicles, special–purpose vehicles, with the exception of agricultural machinery (hereinafter referred to as motor vehicles), is provided in tenge through the joint-stock company "Industrial Development Fund" for a period of 3 to 5 years with a remuneration rate for applicants of 3% per annum. The advance payment must be at least 30% (in case of repayment of lease payments at the expense of the National Road Management Operator, with one hundred percent state participation in the authorized capital, exercising the powers established by the Law of the Republic of

Kazakhstan "On Highways", financing without an advance payment is allowed). Leasing financing is allowed on the basis of a public-private partnership mechanism. The sources of leasing financing will be the funds of the republican budget;

Leasing financing can be used by subjects of industrial and innovative activities, state institutions, local, central and state executive bodies, institutions, state communal enterprises on the right of economic management and state-owned public utilities of the Republic of Kazakhstan, the National Road Management Operator, with one hundred percent participation of the state in the authorized capital, exercising the powers established by the Law of the Republic of Kazakhstan "On highways."

Renewal of the park of medical equipment of domestic production - in tenge through the joint-stock company "Industrial Development Fund" for a period of no more than 7 years with a remuneration rate for applicants of 3% per annum. Budgetary funds are allocated by increasing the authorized capital and/or budget lending to the joint-stock company "Industrial Development Fund". The advance payment is at least 30%. In case of repayment of lease payments at the expense of the republican or local budgets, financing is allowed without an advance payment. Leasing financing of medical equipment can be used by health care entities : local executive bodies, state institutions, state communal enterprises on the basis of the right of economic management and state-owned communal enterprises, municipal state-owned enterprises of the Republic of Kazakhstan, as well as medical organizations with private ownership.

7) Investments in the authorized capital, as well as the provision of mezzanine financing (the operator is the joint–stock company "Qazaqstan Investment Corporation") will be carried out through two financing schemes, depending on the functioning of the enterprise:

equity and mezzanine financing for existing enterprises will be provided to manufacturing enterprises through the fund/private equity funds under preferential conditions: the financing period is up to 10 years, the participation of the Fund of the Qazaqstan Investment Corporation Joint Stock Company is up to 49% in the authorized/share capital, the final interest rate is 8%, the amount of investments in one project is from 1 billion tenge up to 5 billion tenge;

equity financing of established small and medium–sized enterprises (hereinafter referred to as SMEs) without experience in conducting a similar business together with a financial development institute (joint stock company "Qazaqstan Investment Corporation") according to the 20-20-60% scheme (20% of the applicant's own funds, 20% of the funds of the financial development institute, 60% lending to STB). Financing of projects together with the STB will be carried out at 8% for the end recipient for medium-sized projects worth from 2 to 7 billion tenge. The Fund of the joint–stock company "Qazaqstan Investment Corporation" will provide equity financing under preferential conditions: the financing period is up to 10 years, the participation of the Fund of the joint-stock company "Qazaqstan Investment Corporation" up to 49% in the authorized/share capital, the final interest rate is 8%, the

amount of equity financing per project (20% funds of the financial development institute) from 0.4 billion tenge up to 1.4 billion tenge. STB loans will be provided to manufacturing enterprises with a nominal interest rate not exceeding the base rate set by the National Bank of the Republic of Kazakhstan and increased by 5 (five) percentage points, of which the difference is subsidized by the state.

To make investments in the capital of manufacturing enterprises, budgetary funds will be allocated to replenish the authorized capital of JSC NMH Baiterek, followed by replenishment of the authorized capital of JSC Qazaqstan Investment Corporation for funding private equity funds.

8) creation of small industrial zones (construction or reconstruction of a production site) in all regions and cities of republican significance to accommodate SMEs in the manufacturing industry by financing social and entrepreneurial corporations at a remuneration rate of 1% with further financing of construction or reconstruction of no more than 3% per annum for end borrowers. Budgetary funds are allocated by increasing the authorized capital and/or budget lending to the joint-stock company "Industrial Development Fund".

Additionally, there will be the possibility of issuing bonds by financial development institutions to attract commercial funds.

Development of the domestic market

The development of the manufacturing industry will depend on the development and complexity of the domestic market. It is necessary to develop a horizontal trade policy aimed at developing an internal trading ecosystem, which will formulate principles, approaches and measures to develop access to sales channels, promote and improve trading activities. This policy should include solving the tasks of facilitating access of domestic manufacturers to retail sales channels, increasing confidence in the results of Kazakhstani testing laboratories and certification centers. Ensuring systematic access of enterprises to domestic and foreign markets will be carried out in accordance with the policy in the field of trade and the development of domestic value.

As part of the systemic measures of state stimulation of the development of the domestic market, work will be intensified to increase the domestic value, including:

1) within the framework of regulated procurement, mechanisms will be worked out aimed at the development of new high-tech industries, attracting investments and new technologies, supporting the effective implementation of innovations, as well as the development of the research base of the Republic of Kazakhstan and its integration with the production process;

2) creation of a reliable measurement system based on technically advanced and modernized state standards;

3) work will continue on the introduction of new comprehensive measures aimed at improving the competitiveness of domestic enterprises and manufacturing sectors in the domestic and foreign markets.

The accumulated knowledge and experience gained through the development of services in the research and engineering sector must be implemented in the localization of imported products. To do this, it is planned to attract global "anchor" companies with strong supplier development programs and a natural interest in local procurement in order to reduce logistics costs and other operating costs to invest in the production being created. A promising direction for the development of domestic production should be the attraction of foreign capital through:

1) creation of contract productions;

2) creation of joint ventures;

3) localization of products.

In order to load idle enterprises and reach the production capacity of existing manufacturing enterprises, mechanisms approved by international agreements and designed to encourage customers to purchase manufacturing products will be introduced into regulated purchases (for example: mandatory requirement of a reference to a national standard in a technical specification, etc.).

In order to reload domestic manufacturing enterprises, regulatory mechanisms will be developed to provide domestic raw materials and incentive measures, including tax and customs incentives, to facilitate access to imported raw materials that are not produced and have no prospects of production in the territory of the Republic of Kazakhstan.

Thus, the following systemic measures will be worked out for the development of the domestic manufacturing market:

- implementation of measures authorized within the framework of the Eurasian Economic Union and the World Trade Organization aimed at ensuring the stability of strategically important sectors of the economy (withdrawal from the national regime, tariff and non-tariff regulation measures, etc.);
- when implementing large projects by foreign investors, provide conditions for attracting Kazakhstani companies as partners;
- stimulating the localization of production by creating small and medium-sized companies around large manufacturing enterprises for the provision of technologically related and maintenance services, the production of component materials and the processing and (or) disposal of production and consumption waste;
- creation of a center for the development of mining engineering for the development and strengthening of interaction between subsoil users of solid minerals and producers in the domestic market;
- continuation of work on the development of subcontracting centers in cooperation with large private and state-owned enterprises in industry;
- participation in international industrial cooperation and subcontracting systems in order to develop industrial cooperation and cooperation within the framework of the EAEU;

- creation of a supplier development service on the basis of the National Institute for Industrial Development, aimed at increasing the competitiveness of domestic producers of processed products, which will allow them to become potential suppliers for large customers of the raw materials and processing sectors of the economy of the Republic of Kazakhstan;

- development of incentive measures for the development of cooperation between manufacturing enterprises and industries within the framework of the execution of contracts (including EPC) for regulated purchases;

- distribution of quantitative restrictions on the export and (or) import of certain goods between participants in foreign trade activities within their competence in coordination with the authorized body in the field of regulation of trade activities;

- determining the size of quotas and the validity period of the quota within its competence in coordination with the authorized body in the field of regulation of trade activities;

- issuance of licenses for the export and (or) import of certain types of goods with the introduction of quantitative restrictions (quotas) within its competence in coordination with the authorized body in the field of regulation of trade activities.

- in order to streamline business activities in the sphere of turnover of secondary metallurgical raw materials, it is necessary to introduce a permissive procedure.

- creation of a digital platform for accounting for the turnover of secondary metallurgical raw materials;

Participation in international industrial cooperation and subcontracting systems within the EAEU will be carried out within the framework of the project "Eurasian Network of Industrial Cooperation, Subcontracting and Technology Transfer", implemented by all EAEU member states. The project involves the creation of a digital ecosystem that provides economic entities of the member states with mechanisms for the prompt selection of the most effective partners in industrial cooperation and subcontracting, the involvement of small and medium-sized enterprises in the production chains of large manufacturers, and the stimulation of innovative processes through technology transfer. The National Development Institute in the field of industrial development will act as the national operator for the "Eurasian Network of Industrial Cooperation, Subcontracting and Technology Transfer", and the overall coordination will be made by the authorized body in the field of state support for industrial activities.

The Supplier Development Service will work closely with small and medium-sized businesses to improve their competence, meet the requirements of large buyers in terms of quality and reliability of the goods and services offered, while helping to develop their production and trade relations with relevant large buyers. The activity of the service will help to improve the export opportunities of small and medium-sized businesses:

1) support in the transition to international quality standards, quality management systems and promotion of their use;

2) providing specialized knowledge and skills necessary for the successful operation of exporting enterprises in specific markets;

3) assistance in technological improvement and creation of value-added products, which will create the potential for further development and export growth.

In order to increase competitiveness and maximize the potential of domestic manufacturing enterprises, it is necessary to conduct analytical work on a regular basis to identify goods for the application of the permitted norm within the framework of the World Trade Organization and the Eurasian Economic Union for withdrawal from the national regime. Based on the results of the analysis and the withdrawal procedure, we will be able to maximize the capacity utilization of domestic producers of manufacturing products included in the list of exemptions through regulated purchases.

In order to increase competitiveness and maximize the potential of domestic metallurgical enterprises, import substitution and stimulate the implementation of new projects for the production of high-level products, it is necessary to apply measures to limit the export of semi-finished products (steel billets, ingots) of metallurgical production from the country.

In order to prevent regulated purchases of imported goods from entering the market, it is necessary to conduct regular monitoring and analysis (with the participation of relevant government agencies, NCE "Atameken" and industry associations) of the movement of goods from the list of exemptions from the national regime, including imports.

The next step for further development of the production localization potential in Kazakhstan will be the process of attracting multinational companies to cooperate with local manufacturers, replenishing their own supplier base without resorting to "forced localization", encouraging social responsibility and developing competitive enterprises that are able to adapt to international standards and enter foreign markets.

The work on coordination of joint actions in the development of existing and creation of new productions in the field of mechanical engineering, in the field of service companies, on the development of a database of research and development works, human resources, on the unification of tender procedures in the framework of procurement of operators, as well as the creation of a unified database of domestic producers will be intensified.

Working with large customers will become the basis for coordinated actions of participants in the development of the domestic market and an effective tool for negotiations between domestic manufacturers and customers.

In order to retrain and reorient the released workforce at manufacturing enterprises, cooperation between educational organizations in higher and secondary specialties with manufacturing enterprises will be initiated.

These measures will help solve the problems of the lack of high-tech products in the domestic market, low volume of purchases of goods, works and services from domestic

suppliers and manufacturers. Comprehensive measures to improve competitiveness will be implemented in relation to goods, where the main criterion is the ability to introduce high quality standards within the framework of international standards.

In order to ensure the goals of creating new and marketing products of existing small and medium-sized enterprises operating for the needs of individual customers, measures will be developed aimed at creating and developing SME belts around large enterprises, including subsurface users.

On a regular basis, an analysis of the market and procurement volumes of subsurface users, backbone enterprises and national companies will be carried out to identify potential demand for goods, works and services, followed by an analysis to identify products in demand in order to determine the possibility of their development by domestic producers, where the result of this work is the cooperative relationship of enterprises and concluded offtake contracts.

Assistance in signing offtake contracts between large customers and manufacturers provides an opportunity for:

- development of new types of production for the development of added value within the market and export;
- technological development and digitalization of industries.

In order to increase the competitiveness of manufacturers in the domestic market and to assist in the expansion of production, changes will be made to the mechanisms for concluding contracts aimed at industrial development.

In addition to state assistance, recommendations and directions for the development of new production of competitive and high-tech products will be presented to the existing industries. One of such directions in achieving the set goals is the formation of a list of the most demanded imported products.

Innovation development / technological development

In the manufacturing industry, government support for innovation activities will be aimed at creating favorable conditions for the introduction of a new or significantly improved product (goods, work or service), technology or process, a new marketing method or a new organizational method in business practice, the organization of jobs or external relations, increase of the competitiveness of the national economy.

State support for the innovative activities of manufacturing enterprises will be aimed at the development of high-tech industries, increasing the technological complexity of products, corporate innovations and technology transfer through tools for providing innovation grants, business incubation grants, industrial grants and other tools aimed at facilitating the introduction of innovations in production, including process innovations.

Thus, one of the conditions for the provision of state incentive measures will be the criterion of innovativeness, aimed at increasing the economic efficiency of activities by creating new or improved goods, works and services, as well as industries, processes and

technologies, taking into account their further Introduction and ensuring environmental safety .

In general, the innovative development of industry will be ensured in accordance with the general technological policy of the country, which provides for a mechanism and tools that include the definition of technological guidelines and priority areas for innovative industrial development using the expert potential of industry centers of technological competence. This work will be carried out with the close collaboration of the business community, industry, science and the IT sector on the site of the technological platforms being created.

Effective interaction of industrial enterprises with IT companies is very relevant in the context of increasing their competitiveness and labor productivity through automation of production, digital process management using Internet of Things technologies, artificial intelligence and big data.

The level of automation of Kazakhstani enterprises remains low. Thus, more than 80% of manufacturing enterprises and 60% of extractive industries are only at the stage of transition to automated production.

This level of automation and digitalization of industry, along with the lack of incentives and motivation for enterprises to digitalize, is also associated with a lack of sufficient competencies, resources and insufficient information about Industry 4.0 technologies and their capabilities. At the same time, access to high-quality data from industrial enterprises is limited for domestic IT companies, which, in turn, does not allow for the development of mature IT solutions.

In this regard, a knowledge base in the field of Industry 4.0 will be formed. based on the experience and expertise of industry leaders – industrial enterprises (ERG, Kazakhmys, KazMinerals, Kazzinc, Altynalmas, Alageumelectric, etc.), international suppliers (vendors) of digital solutions (Fraunhofer, Siemens, Kuka, SAP, Kaspersky, etc.), reputable expert organizations (WorldBank, KPMG, StrategyPartners, etc.) and domestic research institutes (Nazarbayev University, Satpayev University, Astana IT University, Institute of Mining named after D.Kunayev, etc.).

The knowledge base of Industry 4.0. consolidates expertise adapted to the needs of domestic industrial enterprises to improve the efficiency of enterprise processes through the introduction of digital technologies and information about completed projects, which will be made publicly available to all interested organizations.

The knowledge base in the field of Industry 4.0. will allow to show the advantages and risks of introducing digital technologies into production using practical examples; consolidate accumulated and disparate expertise from different areas of Industry 4.0 and present it as an integrated knowledge base; increase the competence of industrial enterprises and stakeholders in the field of Industry 4.0; increase the share of industrial enterprises using digital technologies; increase the efficiency of industrial enterprises through the introduction of digital technologies and reduce errors during the transition to digital production thanks to the

cases presented in the knowledge base; popularize Industry 4.0 by demonstrating systemic approaches and promoting successful cases based on them.

In the modern world, the phenomenon of robotics penetrates into various spheres of life, and the industrial sector is no exception. Industrial enterprises use robots in various production operations to control, move and implement technological processes directly. Robotization has a number of advantages, such as uninterrupted provision of a given quality, the ability to work 24/7 and in hazardous environments, besides there is no need for air conditioning, lighting, heating, etc.

According to the data, more than 120 industrial robots are used in the Republic of Kazakhstan at more than 24 enterprises, of which the main share is in the manufacturing industry. The main areas of application are: manipulators, moving, welding and painting, quality control, etc.

In order to develop robotics in Kazakhstan, work will begin this year on the development of the Concept of robotization of the industrial sector of Kazakhstan.

The objectives of the system are to increase the efficiency of the formation and exchange of information on the state of industry, to provide relevant information to business entities in the field of industry in order to simplify the business process, as well as to provide complete and reliable information from government agencies for forecasting and decision-making on industrial policy.

The system will contain information:

1) on the implementation of industrial policy;

2) on statistical data on the development of industries;

3) on the results of the development of areas related to production activities;

4) on the state measures being implemented to stimulate the industry;

5) on the implementation of industrial and innovative projects;

6) other information in accordance with the list of functional and information services included in the national information system of industry of the Republic of Kazakhstan.

In order to increase the pace of digitalization in all sectors of the economy within the framework of Industry 4.0, it is necessary to increase and consolidate a high-quality knowledge base with successful international cases in digitalization of similar industries and involve the competencies of international experts in this process.

Digitalization of industry

Taking into account the emerging trends, stable growth and competitiveness of the industry of Kazakhstan and other sectors of the economy supervised by the authorized body in the field of state stimulation of industry are possible through the creation of a technologically progressive industry, transformation and digitalization of fixed assets of existing enterprises focused on the creation of high-tech and/or competitive products with subsequent access to global markets.

To do this, it is necessary to provide a set of incentive measures for manufacturers of the manufacturing industry. In particular, taking into account the process of formation of the industry of the "digital age", there will be an accentuated stimulation of enterprises producing high-tech products for the introduction of modern digital technologies.

The measures will focus on the following areas:

1) improvement of legal conditions and regulation to stimulate the process of industrial automation;

2) creating a digital infrastructure for industry, including providing enterprises with broadband Internet access to stimulate the process of industrial automation;

3) updating existing and developing new government incentive tools for the introduction of digital solutions and elements of Industry 4.0 in industry;

4) raising awareness and interest of enterprises in digitalization (training, methodological and expert support, professional development of specialists of enterprises and organizations, formation of a knowledge base for improving labor productivity, including Industry 4.0);

5) creation of a platform for interaction between IT companies, research institutes, industrial enterprises, government agencies, etc.

6) further implementation and monitoring of digitalization and automation projects by backbone companies;

7) assistance in the development of robotization of the industrial sector.

In the process of forming this system of support measures, much attention will be paid to focusing development institutions on the field of digital technologies to increase the production efficiency of industrial enterprises of the Republic of Kazakhstan through digital transformation based on the use of new generation machinery and equipment, the issuance of innovative grants for digital and technological modernization of production, reimbursement of part of the costs of increasing labor productivity, the provision of leasing financing and others .

Model digital factories – the introduction of appropriate Industry 4.0 technologies (intelligent solutions, real-time monitoring, automation of operations, etc.) at individual private enterprises for the purpose of:

1. Demonstration of digital technologies and the effects of digitalization. 2. Popularization of Industry 4.0 among private businesses.

3. Identification of real barriers based on the example of specific enterprises and the development of appropriate additional state support measures.

4. Transfer of knowledge on digitalization to domestic specialists.

A unified map of industrialization

In order to ensure full-fledged monitoring of industrial and innovative projects, as well as their effective implementation, a unified industrialization map has been adopted, which will include industrial projects that have received or are planning to receive government incentives , with the acceptance of counter obligations.

On a regular basis, work will be carried out to monitor the projects of the unified industrialization map, update and maintain it, identify current and systemic problems of implementation and their causes, with further elaboration of appropriate recommendations for their resolution. Monitoring of the unified industrialization map provides for determining the effectiveness of project implementation based on data provided by responsible sectoral government agencies, national holdings and local executive bodies, as well as primary statistical data on the project applicant from the authorized body in the field of state statistics based on the written consent of the applicant.

Thus, the monitoring of the implementation of industrial policy is carried out through a unified industrialization map, which is a set of industrial and innovative projects implemented by subjects of industrial and innovative activity.

Also, the projects of the unified industrialization map will be provided with raw materials through the exploitation of new deposits.

5. Target indicators and expected results (socio-economic effect)

The achievement of the Concept's goal will be measured by the following target indicators (table 3):

labor productivity growth in the manufacturing industry by 1.8 times to the level of 2021;

the GVA of the manufacturing industry by 2.8 times to the level of 2021; IFO of manufacturing production in 2029 to 106.5% compared to the previous year;

the growth of investments in the fixed assets in the manufacturing industry by 2.3 times compared to the level of 2021.

Table 3. Target indicators of the manufacturing industry

№	Target indicators	Unit of measurement	Source of information	2021 year (fact)	2022 year (fact)	Forecast							Executives in charge
						2023 year	2024 year	2025 year	2026 year	2027 year	2028 year	2029 year	
													Ministry of Industry and Infrastructure Development of Kazakhstan, Ministry of Agriculture of Kazakhstan,

1.	Labor productivity in the manufacturing industry	thousand $/man	Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan	45,8	32,8 (9 months.)	52,4	55,7	59,6	64,2	69,2	75,5	82,1	Ministry of Energy, Ministry of Finance, Ministry of Digital Development, Innovation and Aerospace Industry, Ministry of Health, Ministry of Tourism and Sports, Ministry of Ecology and Natural Resources, akimats of the regions, cities of Astana, Almaty and Shymkent, NCE "Atameken" (

													by agreement), JSC "NMH "Baiterek" (by agreement)
2.	Gross value added of the manufacturing industry	trillion of tenge	Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan	11,4	13,4	15,7	17,8	19,9	22,5	25,1	28,2	31,5	Ministry of Industry and Infrastructure Development of Kazakhstan, Ministry of Agriculture of Kazakhstan, Ministry of Digital Development, Innovation and Aerospace Industry, akimats of the regions, cities of Astana, Almaty and Shymkent,

													NCE "Atameken" (by agreement), JSC "NMH "Baiterek" (by agreement)
3.	IFO of manufacturing industry	% to the previous year	Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan	104,7	103,4	104,4	104,8	105,1	105,5	105,8	106,1	106,5	Ministry of Industry and Infrastructure Development of Kazakhstan, Ministry of Agriculture, Ministry of Digital Development, Innovation and Aerospace Industry, akimats of the regions, cities of Astana, Almaty and Shymkent,

													NCE "Atameken" (by agreement), JSC "NMH "Baiterek" (by agreement)
4.	Investments in fixed assets in the manufacturing industry	trillion of tenge	Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan	1,5	1,5	2,1	2,4	2,6	2,8	3,1	3,3	3,5	Ministry of Industry and Infrastructure Development of Kazakhstan, akimats of the regions, cities of Astana, Almaty and Shymkent, NCE "Atameken" (by agreement), JSC "NMH "Baiterek" (by agreement)

The approaches and mechanisms laid down in the Concept will increase the competitiveness of the manufacturing industry and will allow achieving the following economic effects by 2029:

an increase in exports of processed products to 36 billion US dollars;

an increase in taxes and other mandatory budget revenues to 5.8 trillion tenge.

The achievement of the specified objectives of the Concept in the specified period will be ensured through the implementation of the Action Plan for the implementation of the Concept in accordance with the annex to this Concept.

Annex
to the Concept for development
of the manufacturing industry
of the Republic of Kazakhstan
for 2023–2029

Action
plan for implementation of the Concept for development of manufacturing industry of the Republic of Kazakhstan for 2023–2029

№	Name	Form of completion	Deadlines for execution	Executives in charge
1	2	3	4	5
Direction 1. Labor productivity in the manufacturing industry				
Target indicator 1. Labor productivity growth in the manufacturing industry by 1.8 times from the level of 2021				
Target indicator 2. Gross value added of the manufacturing industry up to 31.5 trillion tenge by 2029 IFO of manufacturing production in 2029 to 106.5% compared to the previous year				
1.	Implementation of projects aimed at upgrading the equipment of subjects of industrial and innovative activity (industrial grant)	industrial grant agreements	2023–2029	MIID, JSC "KCIE " QazIndustry" (by agreement)
2.	Implementation of projects in the manufacturing industry with the participation of JSC " Industrial Development Fund" (by increasing the authorized capital of JSC "Industrial Development Fund" and/or budget lending).	SIP, FEJ, report	2023–2029	MIID, JSC "NMH " Baiterek" (by agreement), JSC "IDF" (by agreement)
3.	Implementation of projects in the manufacturing industry with the participation of JSC " Development Bank	SIP, FEJ, report	2023–2029	MIID, JSC "NMH " Baiterek"

	of Kazakhstan" through the implementation of budget investments/ budget loans			(by agreement), JSC "DBK" (by agreement)
4.	Making investments in manufacturing enterprises through equity and mezzanine financing instruments	SIP, FEJ, report	2023–2029	MIID, JSC "NMH " Baiterek" (by agreement), JSC "QIC" (by agreement)
5.	Implementation of projects in the furniture, paper, packaging, woodworking industry and in-demand goods of the construction industry (with the exception of basic building materials: cement, ready-mixed concrete, reinforced concrete products, gas block, silicate bricks, dry building mixes) with the participation of JSC Industrial Development Fund	SIP, FEJ, report	2023–2029	MIID, JSC "NMH " Baiterek" (by agreement), JSC " IDF" (by agreement)
6.	Renewal of the park of medical equipment of domestic production	SIP, FEJ, report to the MIID	2023–2029	MH, LLP " SK-Pharmacia", JSC "NMH "Baiterek"
7.	Development of recommendations on the digital transformation of industry and the introduction of Industry 4.0 by subjects of activity in the field of industry, as well as support in the implementation of recommendations	at least 20 recommendations per year	2023–2029	MIID, MDDIAI, MA , ME, NCE " Atameken" (by agreement), JSC " KCIE "QazIndustry" (by agreement)
8.	Creation and promotion of a	register of IT-solutions	2023–2029	MIID, MDDIAI, JSC "KCIE "QazIndustry" (by angreement), ACF "PIT" (by agreement), NCE " Atameken" (by agreement),

	register of solutions for manufacturing enterprises			JSC "AIFC" (by agreement)
9.	Creation and implementation of the state system of intersectoral scientific and technical information in the Republic of Kazakhstan on the basis of special materials	an act of completed work, a report to the MIID RK	2023–2025	RSE "NCTF" (by agreement)
10.	Organization of a system of retraining and reorientation of the released workforce at manufacturing enterprises	memorandum between the akimats of the regions, the cities of Astana, Almaty and Shymkent and employers, waiting for the release of labor	2023–2029	akimats of regions, cities of Astana, Almaty and Shymkent, MLSPP, MSHE, MIID, MA, ME, NCE "Atameken " (by agreement)
11.	Internship of domestic engineering and technical personnel of manufacturing enterprises at foreign plants within the framework of the co-financing mechanism	Information to the Government	December 2023–2029	MIID, MF, MNE, MSHE, akimats of regions, cities of Astana, Almaty and Shymkent, NCE " Atameken" (by agreement), JSC " KCIE "QazIndustry" (by agreement), JSC CIP "Bolashak" (by agreement)
Direction 2. Investments in fixed assets in the manufacturing industry				
Target indicator 1. Investments in fixed assets in the manufacturing industry up to 19.8 trillion tenge until 2029				
12.	Establishment of exemption of manufacturing goods from the national regime	Resolution of the Government of the Republic of Kazakhstan	2024, 2026, 2028	MIID, MF, MTI, MNE, NCE " Atameken" (by agreement)
13.	Construction of SEZ infrastructure (Pavlodar, Ontustik and others) and IZ (Ondiris, Almaty, Zhuldyz and others)	Information to the MIID	2023–2029	akimats of regions, cities of Astana, Almaty and Shymkent, MTI, MNE, MF, ME,
14.	Implementation of a project to provide with mechanical engineering products: agricultural machinery	SIP, FEJ, report	2023–2029	MIID, MA, JSC " NMH "Baiterek" (by agreement), JSC " IDP" (by agreement)

15.	Implementation of a project to provide with mechanical engineering products: buses	SIP, FEJ, report	2023–2029	MIID, JSC "NMH " Baiterek" (by agreement), JSC "IDP" (by agreement)
16.	Implementation of a project to provide with mechanical engineering products: fire, rescue, sanitary, municipal equipment, emergency vehicles, patrol cars	SIP, FEJ, report	2023–2029	MIID, JSC "NMH " Baiterek" (by agreement), JSC "IDP" (by agreement)
17.	Implementation of a project to provide with mechanical engineering products: vehicles involved in freight transportation	SIP, FEJ, report	2023–2029	MIID, JSC "NMH " Baiterek" (by agreement), JSC "IDP" (by agreement)
18.	Implementation of a project to provide with mechanical engineering products: passenger cars	SIP, FEJ, report	2023–2029	MIID, JSC "NMH " Baiterek" (by agreement), JSC "DBK" (by agreement)
19.	Implementation of the project to provide with mechanical engineering products: motor vehicles and special-purpose vehicles, with the exception of agricultural machinery manufactured in Kazakhstan	Information to the Government	2023–2029	MIID, JSC "NMH " Baiterek" (by agreement), JSC "IDP" (by agreement)
20.	Launching new projects within territorial clusters	Information to the MIID	2023–2029	akimats of Karaganda , Akmola, Kostanay, Almaty, Turkestan regions and cities of Almaty, Shymkent, JSC "KCIE " QazIndustry" (by agreement)
21.	Provision of government incentives to industry aimed at promoting domestic processed goods, works and services to the domestic market	cost recovery agreements	2023–2029	MIID, JSC "KCIE " QazIndustry" (by agreement)

22.	Creation of new composite materials with high performance properties based on rare and rare earth elements	patents for composite materials, report to the MIID	2023–2029	RSE "NCIPMRM" (by agreement)
23.	Creation of innovative resource-saving technologies for the extraction and complex processing of mineral and man-made raw materials	patents for new technologies, report to the MIID	2024-2029	RSE "NCIPMRM" (by agreement)
24.	Stimulating export financing of domestic producers at a rate of no more than 6 %	financing agreements	2023–2029	MTI, JSC "NMH " Baiterek" (by agreement), JSC "DBK" (by agreement)
25.	Development of processing of imported raw materials in the form of waste from metallurgical production of rhenium sulfide and heat-resistant nickel alloys to produce rhenium and other rare metals (increase in the authorized capital of the republican state enterprise on the basis of the right of economic management " Zhezkazganredmet")	SIP, FEJ, report	2023–2025	MIID, RSE " Zhezkazganredmet " (by agreement)
26.	Creation of a production facility for the production of high-quality ferrosilicon with a capacity of 240 thousand tons per year in the Pavlodar region	the act of commissioning	2023	MIID, JSC "NMH " Baiterek" (by agreement), JSC "DBK" (by agreement)
	Addressing the issue of ensuring equal access of industrial			MIID, MNE, MF, APDC RK (by agreement), NCE "

27.	enterprises to infrastructure	Recommendations to the Government	November 2023	Atameken" (by agreement)
28.	Modernization of the material and technical base of research laboratories and design bureaus in order to improve the effective technical support of agricultural engineering	SIP, FEJ, report	2023–2029	MIID, non-profit JSC "NASEC", LLP " Scientific and production center of agroengineering"
29.	Provision of measures of state stimulation of industry aimed at increasing the labor productivity of subjects of industrial and innovative activity within the framework of the cost recovery mechanism	cost recovery agreements	2023 – 2029	MIID, JSC "KCIE " QazIndustry" (by agreement)
30.	Information and analytical support (consulting services) in the field of industrial and innovative development	an act of completed works, report to the MIID	2023 – 2029	JSC "KCIE " QazIndustry" (by agreement)
31.	Implementation of a project for the purchase of technological equipment for the creation of cast iron production (leasing financing)	lease agreement	2021 – 2025	MIID, MTI, JSC " NMH "Baiterek" (by agreement), JSC " DBK" (by agreement), JSC "IDP" (by agreement)
32.	Implementation of a project for production of main gears of driving axles of trucks: purchase of equipment through leasing financing and construction of a plant	lease agreement	2021 – 2025	MIID, MTI, JSC " NMH "Baiterek" (by agreement), JSC " DBK" (by agreement), JSC "IDP" (by agreement), JSC " SEC "Tobol" (by agreement)
33.	Attracting foreign investors to non-primary sectors	Information to the MIID	2023–2029	

	of the economy in accordance with the list of priority goods			MFA, JSC "NC " KazakhInvest"
34.	Formation of recommendations for development of investment passports from the list of priority goods	an act of completed works, report to the MIID	2023–2029	JSC "KCIE " QazIndustry" (by agreement)
35.	Development of fundamentally new technologies for complex processing of polymetallic raw materials	patents for new technologies	2023 – 2029	MIID, RSE " NCIPMRM" (by agreement)
36.	Monitoring the implementation of industrial and innovative projects of the Unified Industrialization Map	report to the MIID	Quarterly 2023–2025	ME, MA, JSC "NMH "Baiterek", JSC " N W F " Samruk-Kazyna", akimats of regions, cities of Astana, Almaty and Shymkent
37.	Participation in the implementation of the project of the Eurasian network of industrial cooperation , subcontracting and technology transfer, including in the activities within the competence of the authorized bodies of the EAEU member states	Information to the Government	2024–2029	MIID, MDDIAI, JSC "KCIE "QazIndustry" (by agreement), RSE on REM "Digital Government Support Center"
38.	Implementation of a project for construction and reconstruction of small industrial zones for development of small and medium-sized businesses	Information to the Government	2023–2029	MIID, MNE, MF, akimats of regions, cities of Astana, Almaty and Shymkent, JSC "IDF "
	Amendments to the resolution of the Government of the Republic of Kazakhstan dated January 14, 2016 № 13 regarding the	Resolution of the Government of the		MFA, MIID, MF, MNE, NCE "

39.	inclusion of light industry sectors in the List of priority activities identified for implementation of priority investment projects	Republic of Kazakhstan	2023	Atameken" (by agreement)
40.	Amendments to the Rules for the formation, placement and execution of the state defense order, approved by the resolution of the Government of the Republic of Kazakhstan dated October 14, 2019 № 759 in terms of: - establishing the share of local content for equipment of at least 70%; - establishment of counter obligations to the executors of the defense order for equipment – to release a similar volume of products to the market	Resolution of the Government of the Republic of Kazakhstan	2023	MIID, MD, MIA, MES, PGO, MNE, MF, NCE "Atameken " (by agreement)
41.	Complex processing of the initial washing acid with extraction of rare metals and rare-earth metals	an act of completed works, report to the MIID	2023	R S E " Zhezkazganredmet" (by agreement)
42.	Development of technology for rhenium extraction f r o m rhenium-platinum-rh enium catalysts of petrochemical production	an act of completed works, report to the MIID	2023	R S E " Zhezkazganredmet" (by agreement)

Note: decoding abbreviations:

JSC	– Joint Stock Company
NCE "Atameken"	– National Chamber of Entrepreneurs of the Republic of Kazakhstan
MA	– Ministry of Agriculture of the Republic of Kazakhstan
SEZ	– special economic zone

Baiterek NMH JSC	– "Baiterek" National Managing Holding" Joint Stock Company
APDC RK	– Agency for Protection and Development of Competition of the Republic of Kazakhstan
PGO RK	– Prosecutor General's Office of the Republic of Kazakhstan
MSHE	– Ministry of Science and Higher Education of the Republic of Kazakhstan
ACF	– autonomous cluster fund
MH	– Ministry of Health of the Republic of Kazakhstan
EAEU	– the Eurasian Economic Union
MLSPP	– Ministry of Labor and Social Protection of the Population of the Republic of Kazakhstan
GVA	– gross value added
RSE "Zhezkazganredmet"	– Republican state enterprise Zhezkazganredmet
SIP	– state investment project
FEJ	– financial and economic justification
MIID	– Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan
IZ	– industrial zone
PIT	– park of innovative technologies
CIT	– corporate income tax
VAT	– value added tax
RLA	– regulatory legal act
MF	– Ministry of Finance of the Republic of Kazakhstan
MD	– Ministry of Defense of the Republic of Kazakhstan
JSC "DBK"	– Joint-stock Company "Development Bank of Kazakhstan"
RSE "NCIPMRM"	– Republican state enterprise "National center for integrated processing of mineral raw materials"
non-profit JSC "NASEC"	– non-profit Joint Stock Company "National Agrarian Scientific and Educational Center"
RSE on REM "Digital Government Support Center"	– republican state enterprise on the basis of the right of economic management "Digital Government Support Center"
RB	– republican budget
JSC "IDF"	– Joint Stock Company "Industrial Development Fund"
JSC "NWF "Samruk-Kazyna"	– Joint Stock Company "National Welfare Fund " Samruk-Kazyna"
JSC "QIC"	– Joint Stock Company "Qazaqstan Investment Corporation"
BNS ASPR	– Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan
MTI	– Ministry of Trade and Integration of the Republic of Kazakhstan

MFA	– Ministry of Foreign Affairs of the Republic of Kazakhstan
MES	– Ministry of Emergency Situations of the Republic of Kazakhstan
JSC "SEC "Tobol"	– Joint Stock Company "Social and Entrepreneurial Corporation "Tobol"
SEZ "NIPT"	– special economic zone "National Industrial Petrochemical Technopark"
RSE "NCTF"	– Republican state enterprise "National Center for Technological Forecasting"
MNE	– Ministry of National Economy of the Republic of Kazakhstan
MDDIAI	– Ministry of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan
MIA	– Ministry of Internal Affairs of the Republic of Kazakhstan
MEGNR	– Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan
ME	– Ministry of Energy of the Republic of Kazakhstan
JSC "KCIE "QazIndustry"	– Joint Stock Company "Kazakhstan Center of Industry and Export "QazIndustry"
EFQM	– the European Foundation for Quality Management