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## **Development of Industry in the Tyumen Region: Problems, Opportunities, Impact of the State**

### **Abstract**

The economy of the Tyumen region is largely determined by the industries developed in the period of intensive development of hydrocarbon reserves in the north of the region. Then, in the south of the area the industrial complex and power supply sources were created. The South of the region became the base of the development of the north of Western Siberia. The search of effective ways to maintain and develop the economy of the Tyumen region is of particular relevance in the current socio-economic conditions. The purpose of this article was to study the problems and possibilities for the development of industries in the South of the Tyumen region, taking into account the role of the State. Methods of statistical analysis of an economic environment were used in the research process. Authors analyzed the economic indicators that characterize the dynamics and characteristics of the development of industry in the region. Problems were systematized and opportunities of the region industries development were formulated. Authors studied the impact of the state on the region economy and offered the directions in the development of the Tyumen region industries.

**Keywords:** Region Economy, Industry in the Region, Impact of the State.

**JEL CODE:** L6.

## **Rozwój przemysłowy w regionie Tyumen: wyzwania, szanse, wpływ państwa**

### **Abstrakt**

Gospodarka regionu tiumeńskiego w dużej mierze zależy od przemysłu, który rozwinął się w okresie intensywnego rozwoju złóż węgłowodórów w północnej części regionu. Wtedy to założono tam kompleks przemysłowy i potężną bazę energetyczną. Południe regionu stało się podstawą do dalszej intensyfikacji działań w północnej części Zachodniej Syberii. Poszukiwanie skutecznych sposobów utrzymania i rozwoju gospodarki regionu tiumeńskiego ma szczególne znaczenie w obecnych warunkach społecznoekonomicznych.

Celem niniejszego artykułu jest analiza problemów i szans rozwoju przemysłu na południu regionu tiumeńskiego z uwzględnieniem roli państwa. Wykorzystano statystyczne metody

analizy środowiska ekonomicznego. W artykule analizowano wskaźniki ekonomiczne charakteryzujące dynamikę i cechy rozwoju przemysłu w regionie. Usystematyzowano problemy i sformułowano możliwości rozwój przemysłu w regionie. Zbadano wpływ organów państwa na gospodarkę regionu i zaproponowano kierunki rozwoju przemysłu w regionie tyumeńskim.

**Słowa kluczowe:** gospodarka regionu, przemysł regionu, wpływ państwa.

## **Introduction**

According to the report of Global Manufacturing Competitiveness Index (*Global Manufacturing Competitiveness Index 2016*) Russia took the 32nd place in 2016, dropping in the rating with 23 places relative to 2013. Russia conceded in rating not only to industrialized countries, such as China, United States, Germany, Japan, South Korea, but also to such countries as India, Vietnam, South Africa and Brazil.

Improving the production competitiveness of Russia is directly connected with the activity of state in the development of regions. The economy of the Tyumen region substantially depends on industries, the formation of which is strongly influenced by the proximity to the oil and gas territories of the Khanty-Mansi and Yamal-Nenets Autonomous Districts, the source of raw materials of the Urals and the sales markets of Eastern Siberia and Kazakhstan. The search of effective ways to maintain and develop the economy of the Tyumen region is of particular relevance in the current social and economic conditions.

The purpose of this article is to study the problems and opportunities for the development of industries in the South of the Tyumen region, taking into account the role of the state. Our hypothesis is that the economy of the South of the Tyumen region shows stable modest growth in a number of indicators, but there is a considerable set of the factors constraining its development that a state must consider when designing economic programs.

Statistical data of the Federal and Regional State Statistics Service provided the information base of the research. Time-series analysis were used in the research process. The article includes the review of literature from Scopus, Web of Science, E-library, EBSCO databases concerning development of regions in the light of government influence. The paper gives analyzes of the economic indicators that characterize the dynamics and characteristics of the development of industry in the Tyumen region, formulates problems and opportunities

of the region industries development taking into consideration the impact of the state on the region economy.

### **Literature review**

Topical issues of the management of region strategic development, including innovative development issues, development control mechanisms, were studied by A. Deyev, A. Hvoshchin (Deyev, Hvoshchin 2013, pp. 7-116). J. Kaźmierczyk undertook study on the impact of state on the economies (Kaźmierczyk 2015, pp. 222-239; Kaźmierczyk 2008). A. Kolot, O. Poplavska studied the interaction of government and business, and new cooperation forms (Kolot, Poplavska 2017, p. 62). N. Ketova, Y. Kolesnikov, V. Ovchinnikov carried out the analysis of the current problems of development and the threats of the South of Russia, offered ways to promote the upgrading of industries, the development of clusters (Ketova, Kolesnikov, Ovchinnikov 2015, pp. 388-393).

A number of authors have examined interrelations between state impacts and development in a region. A. Rodriguez-Pose, M. di Cataldo examined the impact of good governance on the innovative activity of European regions (Rodriguez-Pose, di Cataldo 2015, pp.673-706). A. Eradin studied the role of regional policies along with the external and endogenous factors in the resilience of regions of Turkey (Eradin 2015, pp. 217-234). M. Quinn explored the impact of place on policy outcomes by examining the implementation of economic development policy in the East Midlands of England (Quinn 2015, pp. 230-236). R. Huggins, B. Morgan, N. Williams examined the evolution of regional enterprise policies and associated governance mechanisms in the UK (Huggins, Morgan, Williams 2015, pp. 473-511). I. Ablaev studied the current tendencies in the state innovation development and suggested the perspective ways for further effective development of the innovation system (Ablaev 2015, pp. 309-312). L. Sevriukova and N. Trusova have worked out methodical recommendations on the efficient stimulation mechanism of investment activity formation for Russian regions (Sevriukova, Trusova 2014, pp. 106-109). T. Pogodaeva, D. Zhaparova analyzed the impact of institutional factors on the investment attractiveness of the Tyumen region in Russia (Pogodaeva, Zhaparova, Rudenko, Skripnuk 2015, pp. 129-135).

Impact of state on the industry development in the regions is also studied by some researchers. So, I. Sergeeva, L. Krutov identified the direction of industrial policy based on the combination of state impact and self-regulation of the process of industrial development, studied the problems of industries on the example of the Penza region (Sergeeva, Krutova

2015, pp. 183-191). L. Lapochkina conducted a research on the effectiveness of the state regulation of an industrial development in the North of Russia and has proved its low effectiveness (Lapochkina 2015, pp. 1781-1792). I. Golova, A. Sukhovey revealed the features and priorities of the innovative and technological development of Russian industrial regions, the reasons for lagging regions in the terms of innovation development, proposed measures of the state support of the innovative development of industrial regions (Golova, Sukhovey 2015, pp. 131-144; Golova 2015, pp. 294-311). G. Galeeva, M. Ivanov, A. Vafin conducted the analysis of innovative development of the regions with high proportion of industrial assets in the economy and elicited the main problems and perspectives of innovative development of the industrial economy (Galeeva, Ivanov, Vafin 2016, pp. 27-34).

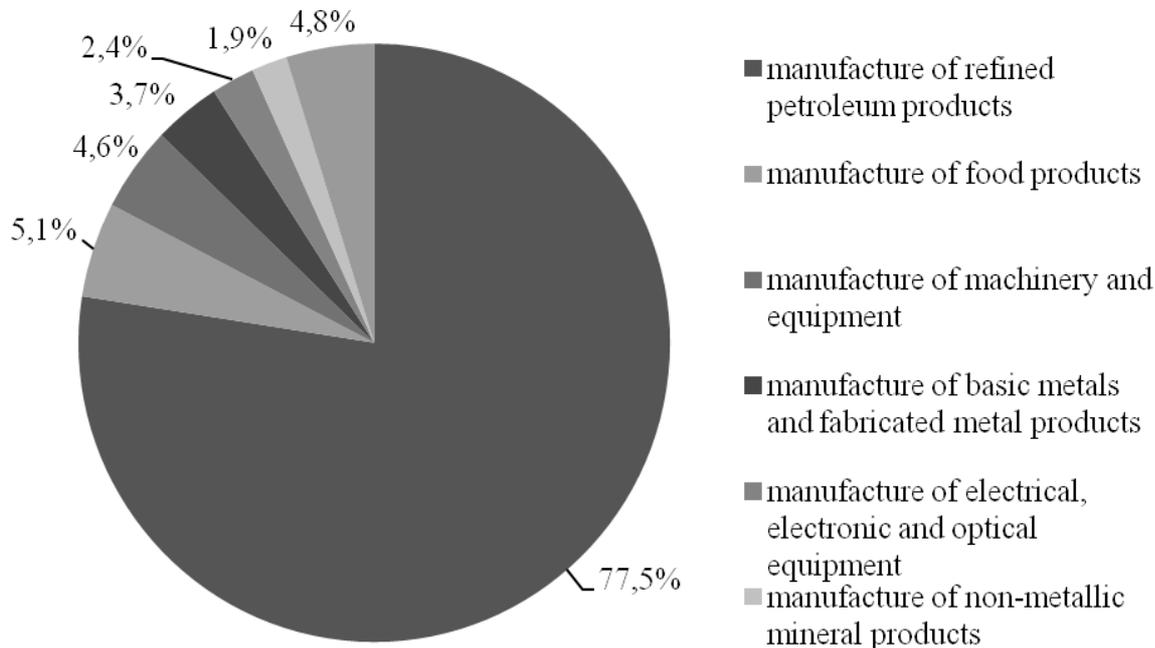
## **Results**

The industries of the Tyumen region formed basically in the period of the intensive development of the largest reserves of hydrocarbon raw materials in the north of the region. To meet their needs an industrial territory complex and strong power supply sources were created in the South of the region. The South of the region became the base of the development of the North of Western Siberia.

Currently, 35.3% of the gross regional product was owed by the industries of the South of the region. The industry of the South of the Tyumen region is represented by companies from different sectors that largely focused on servicing the oil and gas sector. The structure of the Tyumen region industry by types of economic activity looked as follows in 2016: “Manufacturing” – 74.1%, “Mining and quarrying” – 20.1%; “Production and distribution of electricity, gas and water” (PDEGW) – 5.8% (*Industrial Production 2017*).

Production of petroleum products, food production, production of machinery and metallurgical production have the heavy share (Figure 1). The prevailing part of the manufactured products is intended for intraregional consumption, including the territory of the Khanty-Mansi and Yamal-Nenets districts.

**Figure 1. Structure of Manufacturing (2016)**

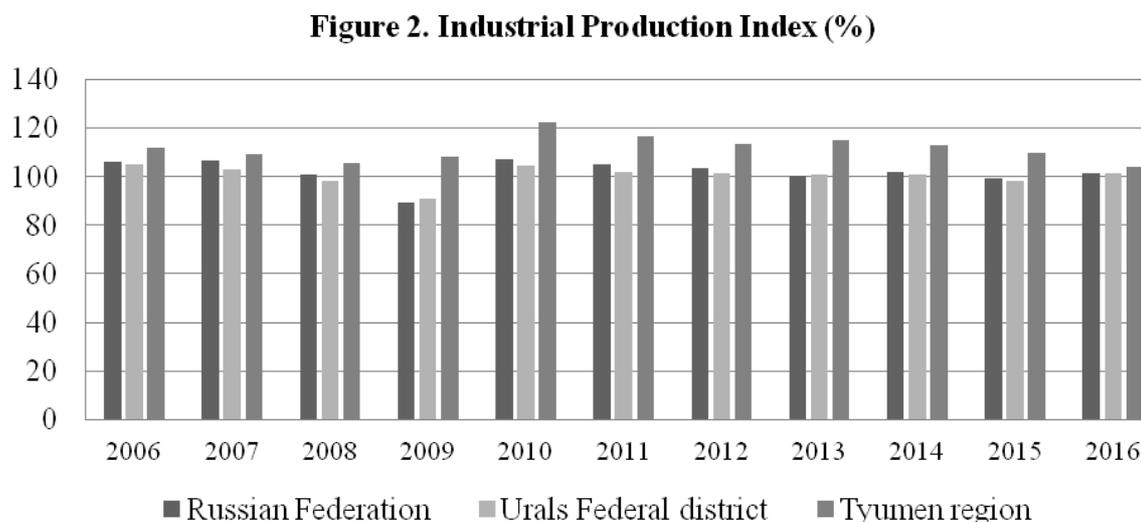


Source: own elaboration based on: Industrial Production 2017.

*Concept of long-term socio-economic development until 2020 and on prospect until 2030*, which defines the direction of development of industries, was adopted in the Tyumen region. The state programme “*Development of Industry, Investment and External Trade*” until 2020 was developed within the framework of the state programmes for the development of innovative economy and regional policy in the Tyumen region. The programme includes the following priorities for the growth of industrial production: diversifying the industrial complex of the region, improving the competitiveness of industrial enterprises on the Russian and international markets, promoting the establishment of industrial parks network. Priority sectors for further development in the Tyumen region are: oil refining; oil and gas chemistry; petroleum engineering; woodworking industry.

In general, the dynamics of industrial economic indicators in the Tyumen region is positive, though there is a slowdown in growth rates. In 2016, the Industrial Production Index of the South of the Tyumen region was 103.9%, although in Russia as a whole – 101.3%. Growth rates for region industrial production, since 2006, exceeded similar indicators of the Russian Federation and the Ural Federal District (Figure 2) (*Industrial Production...* 2017, p. 38).

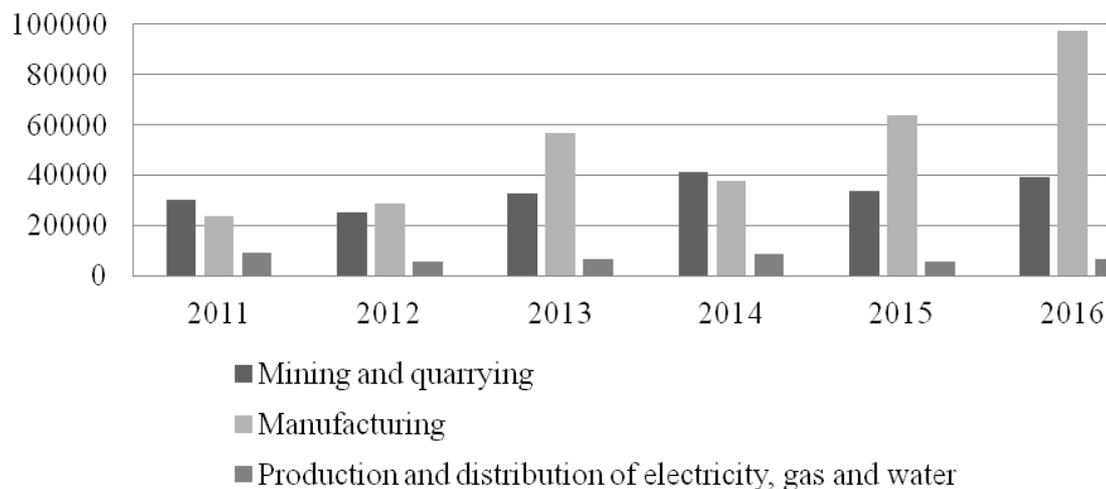
**Figure 2. Industrial Production Index (%)**



Source: own elaboration based on: Russia in Figures 2017.

The volumes of fixed investment in the Manufacturing sector considerably increased in dynamics (Figure 3). Thus, in 2016 this indicator increased by 53.3% compared to 2015.

**Figure 3. Fixed Investment on the Tyumen Region, millions of rubels**



Source: Industrial Production... 2017.

Despite positive dynamics of a number of the indicators characterizing economy of the Tyumen region a number of the factors constraining development of industries is observed. The study of these factors revealed the following problems:

1. Low technological level due to high degree of wear and tear of fixed assets and insufficient use of innovations in a number of industries. Degree of wear and tear of fixed assets in 2015 was: in “PDEGW” – 50.8%, in “Mining and quarrying” – 37.0%, in “Manufacturing” – 25.2%. In addition, in some sectors of Manufacturing the depreciation of

fixed assets is even more significant. So, degree of wear and tear was 59.6% in the textile industry, in the production of vehicles and equipment – 47.6%, in the manufacturing of machinery and equipment – 43.1% (*Industrial Production...* 2016, p. 45). Only 12.5% of the enterprises in the South of the Tyumen region carried out technological innovation in 2015. For the period 2013-2015, there is a significant reduction in the cost of technological innovation: in “Mining and quarrying” – by 52.1%, in “Manufacturing” – by 42.6% (*The Tyumen Region in Figures* 2017, p. 42).

The difficulties in the process of technological upgrading are associated with the insufficient internal and external investment resources of enterprises, as well as the uneven distribution of investment in fixed assets by types of economic activity and industries. So, in 2015, the largest share of investments in fixed capital of “Manufacturing” was carried out in the production of petroleum products (53.1%) and chemical production (36.4%) (*Industrial Production...* 2016, p. 53).

The lack of investment resources of enterprises and the state is connected with difficult economic conditions that cause a reduction in the incomes of enterprises and the budget. So, in 2015 the regional budget revenue decreased by 5.5% compared to the previous year (*The Tyumen Region in Figures* 2016, p. 183).

2. Low level of capacity utilization rate for output of certain products, particularly in the manufacturing sector. For example, in 2015, that for the production of cheese was 3.6%, smoked fish – 9.7%, windows blocks – 0.1%, and wall blocks – 4.6% (*The Tyumen Region in Figures* 2016, p. 90).

Insufficient utilization of production capacity is associated with decrease of end-users demand due to reduction in the population’s wages and real income. In 2015, 2016 there is a decrease in the population’s real monetary income and real wages per employee, though till 2014 these indicators grew. So, in 2016, relative to 2015 the reduction of real monetary income was 8.5%, and real wages – 2.7% (*The Tyumen Region in Figures* 2017, p. 11).

3. The unevenness of social and economic development of the territories of the South of the Tyumen region that complicates uniform and rational location of production on the territory of the region. This is due to the concentration of most industrial enterprises in 7 of the 26 areas of the South of the region. Thus, the city districts of Tyumen and Tobolsk, the Tyumen municipal administration area are leaders in the structure of “Manufacturing” and “PDEGW”, and the Uvat district is a leader in “Mining and quarrying” (*Industrial*

*Production...* 2016, p. 52). This leads to territorial differentiation in economic and social situation between industries and between municipalities of the South of the Tyumen region.

4. Infrastructure development constraints linked to insufficient capacity of transport systems. It is caused, first of all, by the poor conditions of federal, regional and municipal roads, failure to meet international standards, shortage of transport terminals, cars and locomotives to meet the needs of industrial enterprises, slow development of the air transportation infrastructure, high degree of wear and tear of the rolling stock.

According to “RosdorNIP”, the share of regional and municipal roads that do not meet the regulatory requirements was 46.5% (Deyev, Hvoshchin 2013, p. 48). In 2015, the share of paved roads was 70.2% in the South of the Tyumen region, with an improved surface - 50.3% (*The Tyumen Region in Figures 2017*). The wear and tear on the rolling stock is 65.5%, including: regional ownership – 44.3%, municipal – 58.3%, property of enterprises – 92% (Deyev, Hvoshchin 2013, p. 48).

5. Lack of engineering and technical personnel and skilled workers. It caused by objective demographic and economic reasons which arose in the region's economy in the 1990s and entailed a large output contraction. In recent decades, the prestige of working and engineering professions has declined; the imbalance emerged in training (including the surplus of university graduates with unclaimed training specialization). The significant differentiation of average wage in industries also created problems of attracting qualified personnel to less paid sectors.

In 2015, in the South of the Tyumen region the maximum wage was in mining and quarrying and the lowest in the textile industry. The difference between the maximum and the minimum wage was 10.9 times. As a result, the largest share of employees was in higher-paying industries: in mining and quarrying (85.7%), food production (18.3%), metallurgical production (15.6%), manufacture of machinery and equipment (12.8%) (*The Tyumen Region in Figures 2016*, p. 28).

6. The bias in the structure of the manufacturing industries towards oil refining. In 2016, the share of oil production was 77.5% in the structure of Manufacturing (Figure 1). There is a decrease in the dynamics of the development of traditional for the South of the region machine-building complex, which long held the leading position in the economy of the South of the Tyumen region.

Dependence of the regional economy on the situation on the world market of hydrocarbon raw materials, unfavorable price fluctuations create objective prerequisites for the

development of petroleum products processing industries that provide higher added value. Negative effects of the economic crisis affecting the situation in the real economy of Russian regions and the insufficient level of products competitiveness on foreign markets also caused the decline in the share of machine building of the Tyumen region in the structure of the Manufacturing.

7. Primary orientation of export is raw materials and the production of low extent of processing. Thus, in 2015, mineral products and chemical products account for the largest share in the structure of export goods: 61.5% and 30.2%, respectively (*The Tyumen Region in Figures 2016*, p. 208). Availability of raw material in the Tyumen region, shortage of manufacturing with high added value, a long orientation of the region on resource competitive advantages lead to a failure in technological competitive advantages based on investments, innovations, technologies.

Existing problems in the industry of the Tyumen region cause an increase in the share of unprofitable enterprises. For example, in 2015 the share of these enterprises was in “Mining and quarrying” – 36.8%, in “PDEGW” – 32.5%, in “Manufacturing” – 23.3%. It should be noted that the share of unprofitable enterprises is even higher in a number of industries. Thus, in chemical production the share was 43.3%, in production of leather and leather products – 40% (*The Tyumen Region in Figures 2016*, p. 175). Profitability of sold goods (works, services) amounted to 5.5% in “PDEGW”, 14.8% in “Mining and quarrying” and 16.3% in “Manufacturing”. There is a negative margin in some industries of the Manufacturing sector (manufacture of chemical products – 28.3%, manufacture of transport equipment – 2.5%) (*The Tyumen Region in Figures 2016*, p. 185).

The authors studied development opportunities for the industries in the South of the Tyumen region to address the challenges limiting development of the industries:

1. To increase the internal and external investment resources of the region and enterprises needed to improve the technological level and upgrade fixed assets, it is advisable to use the opportunities for the essential increase of hydrocarbon production output taking into account development of the mineral resources base of the Uvat’s oil fields. The discovery of these deposits will allow developing industries related to oil production and service related industries, infrastructure, increasing the number of jobs and tax revenues from growing companies.

In the future this will allow developing oil refining industry, due to the presence of favorable conditions for hydrocarbons processing (the proximity of resource base, the

availability of electric power facilities, engineering, transport and industrial infrastructure, the presence of significant water resources, as well as free areas with low value to agricultural production and etc.).

2. To increase the capacity utilization rate of some industrial enterprises and to overcome the uneven socio-economic development, it is expedient to use opportunities for the development of building materials and construction industries meeting the modern technological requirements, with active support of the state. The resource potential in the form of the deposits of clay, sand and forest, the tendency to the conversion of production facilities construction base for the production of clean and modern materials, the pace of housing construction, the state priorities in ensuring the affordability of housing contribute to this.

3. To overcome transport constraints it is advisable to use opportunities for creating the network of multimodal transport and logistics centers, the development of transport corridors (rail corridor, the North-South road corridor with access to Kazakhstan, waterway corridor with access to the Northern Sea Route) on the territory of the South of the Tyumen region.

4. To address the shortage of engineering personnel and skilled workers, it is advisable to use the possibilities of state regulation of budgetary and targeted financing for education, the development and implementation of training programs at the local level, focused work to increase the prestige of engineering and working areas of training.

5. To develop high-value-added industries in the region and increase the share of highly processed goods exports, it is advisable to use the opportunity for creating a highly effective petrochemical industry, as well as for restoring the machine-building complex.

Modernization and development of petrochemical industry that a traditional for the region, are considered, first of all, through the implementation of advanced innovative technologies. This will allow to make a real leap forward and to reach the international level regarding output and its quality. The cluster of various petrochemical plants for deep processing is created in Tobolsk. The start of "*Tobolsk-Polymer*" that is one of the largest complexes for polypropylene production became the next stage in the development of petrochemical industry.

In addition, the actions of state authorities in the development and support of machine-building complex of the region will allow using the existing infrastructure and increasing the share of machinery in the structure of Manufacturing. This opportunity may be implemented due to the creation of oil and gas machine building industrial park, which will attract

promising and high-tech productions. The industrial park will be an element of innovative infrastructure for socio-economic development of the region.

## Conclusion

Our hypothesis has proven to be correct; the economy of the South of the Tyumen region shows stable modest growth. For example, in 2016, the Industrial Production Index was 103.9%. Growth rates for region industrial production, since 2006, exceeded similar indicators of the Russian Federation and the Ural Federal District. The volumes of fixed investment in the Manufacturing sector are also on the rise.

But there is a considerable set of the factors constraining its development. Those include, among other things, low technological level, high degree of wear and tear of fixed assets in a number of industries, low level of capacity utilization rate for output of certain products, lack of engineering and technical personnel and skilled workers, raw materials export orientation.

The role of the state is to work with priority directions of regional economy development, taking into account the opportunities presented by authors in the article. The implementation of these opportunities, with adequate state support will allow to use the available scientific and industrial potential and to create the conditions for the growth of the production competitiveness of the region.

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