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Industrial policy as a tool of neo-industrialization of regional industrial systems*

The article describes the essence of neo-industrialization of an economy as an alternative to the establishment of a post-industrial economy. It substantiates the three stages of industrial policy, aimed at neo-industrialization of the economy in the Ural region taking into account the characteristics of its industrial system. A special importance is attached to clusters as market institutions of implementing the regional industrial policy.

Neo-industrialization of an economy, stages of implementing neo-industrialization, institutions of regional industrial policy, industrial clusters.



**Olga A.
ROMANOVA**

Doctor of Economics, Professor, Head of the Department at the Institute of Economics of the Ural RAS Department
econ@uran.ru



**Yuliya G.
LAVRIKOVA**

Doctor of Economics, Deputy Director of the Institute of Economics of the Ural RAS Department
K515L@mail.ru

The modern stage of economic development is characterized by the new requirements connected with the peculiarities of civilizational development of society in the era of globalization.

The period we live in may be regarded as the era of the transition of society from the traditional industrial and market system to a new highly organized economic management system.

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Informatization of society, the need to adapt to the changing global situation under the “new economy”, the growing number and the increasing importance of intellectual and innovation industries and services – all this significantly changes the modern profile of the economy and its major structural sector – industry. In these conditions, the most promising are those development models, in the framework of which the territories are not just places where branches of large corporations are located. These territories include old industrial regions of Russia, which are capable of creating specific resources, promoting innovation activities, forming competitive advantages, and increasing their attractiveness for business through an efficient development policy.

The regions started working out their own territorial concepts and laws on industrial policy due to the challenges in choosing the models of economic growth, the search for the strategic priorities of development approved both at the federal and regional levels as well as the emerging new technologies of regulating development in the old industrial regions. This policy is based on the policy aimed at building a competitive, structurally balanced industry. It should efficiently combine the intellectual core of the industry with the so-called “supporting industries”, which provide the development of key technologies, such as nano-, bio-, information technologies. In addition, the industrial policy as a tool, integrated into the general strategy of socio-economic development, should ensure a balance not only between conflicting economic goals, but also between purely economic, social and environmental goals. As viewed from this angle, the assessment of the industrial policy efficiency becomes much more complicated. The industrial policy implementation cannot be efficient, first of all, in the short term concerning its evaluation by the criterion of Pareto efficiency.

It would be more proper to assess it by the Kaldor–Hicks criterion, which allows for taking into account not only the potential benefit in the framework of the implemented industrial policy, but also the losses of individual economic actors inevitable in the current stage of economic development¹.

One of the main problems in modern Russia, as well as many developing countries, is the problem of neo-industrialization of the economy as a kind of alternative to the formation of a post-industrial economy². It is particularly relevant for the industrial regions of the country. Unfortunately, the strategic documents of the development of such territories up to the present time don't highlight the ways of transition to the new technical and technological bases, the possibility of promoting industrial production to the new progressive development levels, which determine neo-industrialization as the relevant trend in the modern stage of economic development of the country and its old industrial regions.

It can be noted that at present, the situation in Russia is characterized by a weak, uncompetitive industry, low innovation activity, problems in the rapid development of the hi-tech sector of the economy, which does not allow counting on a swift implementation of some breakthrough technologies and formation of the essential elements of a modern technological mode. It is known that Russia lags far behind the developed countries concerning the share of the world's expenditures on R&D in terms of purchasing power parity – 2%, (compare: in the U.S. – 35%, in the European Union – 24%)³.

¹ <http://bugabooks.com/book/83-istoriya-yekonomicheskix-uchenij/74-5-popytki-resheniya-problemy-sopostavleniya-optimalnyx-sostoyanij.html>

² Gubanov S. On the policy of neo-industrialization of Russia. *Economist*. 2009. No. 3.; Gubanov S. Neo-industrialization and vertical integration (on the formula of the development of Russia). *Economist*. 2008. No. 9.

³ Lyubushin N.P., Babicheva N.E., Korolev D.S. Economic analysis of the opportunities for technological development of Russia. *The economic analysis: theory and practice*. 2012. No. 9. P. 4.

In these conditions it is necessary to change the model of economic growth, to take into account the realities of the socio-economic development, to work out such mechanisms of economic policy, which will allow Russia to rank high in the global economy.

A forward-looking course for neo-industrialization, expressed in the priority directions of technological development (the industry of nano-systems, security, information and communication systems, energy efficiency, etc.), implies the intensive innovation development of the real sector of the economy. More and more researchers are emphasizing the expediency of working out the economic development strategy, based on the structurally balanced development of the economy as well as on the efficient interaction of all sectors of the real economy, first of all mineral raw materials and manufacturing.

The proposals have been also put forward concerning the formation of the integrated resource-processing model⁴. The model of integrated complementary functioning of the mineral-raw materials and industrial processing sectors is applicable first of all in those regions for which the exploitation of mineral-raw-material base and the creation on its basis of the industrial-technological mineral and raw materials complex is a priority in the development of the economy.

The Ural region is an example of such a region. Here the resource-processing development strategy can be implemented, based on the presence of the variety of mineral deposits, including industrial resources, the efficient production and processing of which is sufficient not only for the neo-industrialization of Russian economy, but also for mutually beneficial international cooperation with the countries that have a poor mineral raw materials base.

⁴ Kimelman S. Integrated resource-processing model. *Economist*. 2012. No. 1.

It appears that the main task of the mining industry under neo-industrialization is not to increase the production and export of crude oil, gas and other mineral resources, but to make the processing of raw materials more profound and to expand the markets of downstream products. The leading manufacturing sectors in the framework of the neo-industrialization strategy implementation can form a sustainable economic base for the development of other industries and economic activities.

In these conditions, it is efficient market institutions and the active participation of the government in the development and implementation of industrial policy that should become the main tool for maintaining the optimal structure of the industrial complex and the basis for the formation of its intellectual core and the enhancement of competitiveness. Industrial policy based not on the opposition of government regulation and market freedoms, but, on the contrary, on the combination of the active involvement of the state and market mechanisms should play a decisive role in the neo-industrialization of the economy of Russia and its industrial regions.

The neo-industrialization in the Ural region can be carried out in the framework of its long-term development strategy. The implementation of the new industrialization scenario can include three stages, typical for the country as a whole⁵, and taking into account the peculiarities of the industrial system in the Ural region. In the first stage (2012 – 2013) the priority task can include the recovery of industrial production volumes to the level of the pre-crisis year of 2007, combined with the formation of innovation clusters in basic industries. The raw materials sector, associated primarily with the oil and gas production complex, should be developed at the first stage in the direction of deepening the crude hydrocarbons processing.

⁵ Amosov A. On the neo-industrialization scenario in the concept of development up to 2020. *Economist*. 2011. No. 6. P. 15-16.

At the same time, the strategy of involving the production capacity in economic activities should be re-oriented toward the creation of conditions for the renovation strategy implementation.

In the second stage (2013 – 2017), the large-scale industry, based on resource- and labour-intensive sectors of manufacturing (heavy machinery, fuel and chemical industry, metallurgy, etc.) will stabilize in its borders, and then it will be characterized by the narrowing of its scale. It should be noted that the processing industry (first of all chemical and petrochemical, woodworking, etc.) is poor in advanced technologies and needs radical technological reconstruction, for the implementation of which it is advisable to use a part of the revenues derived from the exports of primary resources. The revival of the processing industry in the Ural region can have a positive influence on the related sectors of the economy: infrastructure, civil and industrial construction, development of the consumer complex. To some extent, this will have a positive impact, through the tax mechanism, on the improvement of the situation in the social sphere, defense complex, etc.

The development of the large-scale industrial sector will be determined by the beginning of technological neo-industrialization, which will result in the gradual substitution of the production and technological potential created on the basis of the innovation component. During this period, the upgraded productions of large and medium-sized enterprises, as well as the enterprises of the new economic sectors, established under the regional target programmes and innovation projects, will function at full capacity. It can be assumed that such a development of the industry will promote the onset of neo-industrialization in the economy of the old industrial region.

At the third stage (2018 – 2020) one can expect that not the GRP growth, but the qualitative development of the regional industry

will become the criterion for assessing the efficiency of the industry. In this period, the change of the technological base of the industry can be expected as a consequence of the development of a strong scientific, technological, human and intellectual potential.

Neo-industrialization of the economy in the Ural region will facilitate the transition to the achievement of high quality production standards in the respective industries. At that, obviously, the major concentration will take place in the largest cities of the region, such as Yekaterinburg, Chelyabinsk, in the most cost-effective R&D, experimental-design and service departments of industrial enterprises. Their capacities will be oriented toward the development and maintenance of high quality of the final industrial products.

The new economic positioning of the Ural region in the implementation of the neo-industrial development strategy will largely depend on the advantages of the investment environment, innovation climate, the timeliness of the necessary institutional reforms, the sound consideration of territorial development trends. The tendencies of territorial development of the European countries and the BRICS countries (especially China) indicate that the points of growth are now beginning to shift to the remote areas of the country – it is these areas where growth rates of national economies are the highest. Let us estimate from these positions the changes in the territorial structure of the economy of the industrially developed region on the example of the Sverdlovsk Oblast.

The peculiarity of the territorial development in the Sverdlovsk Oblast is the unification of its municipalities according to the administrative and geographic principle into six major areas: five administrative districts (Northern, Gornozavodskoy, Western, Eastern, Southern) and Yekaterinburg agglomeration (the near zone, which includes the municipalities: the city of Yekaterinburg, Aramilsky urban district, Berezovsky urban district, Rezhnevskoy urban district, Sysertsky urban district).

General development processes, as well as significant changes in the oblast's economy after the crisis have caused a number of territorial changes in the structure of the economy in the Sverdlovsk Oblast. In particular:

- The actual processes of concentration of industrial production in the centre of the region – Yekaterinburg agglomeration and Western administrative district are going on (the share of these regions in the total turnover of industrial organizations increased respectively from 26.7% and 21% in 2007 to 31.5% and 25.7% in 2010). Meanwhile, the share of industrial production has been declining in Northern district (from 12.2% to 8.4%), Gornozavodskoy district (from 24.6% to 21.0%) and Southern district (from 13.3% to 11.7%) and is practically reduced to nothing in Eastern administrative district (from 2.2% to 1.7%). The lowest growth rates of industrial production were observed in Northern administrative district – only 5.2%. The highest – in Western administrative district (87.1%).

- Judging by the dynamics of investments (*fig. 2*), industrial production growth in Western administrative district won't be sustainable. The volume of investments in 2010, as compared with 2007, reduced by 30% (the share of the district in the total volume of investments of the Sverdlovsk Oblast decreased from 19.7% to 13.9%). There has been a substantial reduction in the investments in Northern district (by 44.5%) and Eastern district (by 38.6%). An insignificant growth of investments was observed in Yekaterinburg agglomeration and Gornozavodskoy district (3.9% and 5.5% respectively). The highest growth of investments was observed in Southern administrative district, by 79.9%, at the expense of investments in the construction of a new unit at the Beloyarsk nuclear power station and the development of Sukhoy Log urban district.

- Dynamics of the number of working-age population (*fig. 3*) indicates that the territorial structure is stable, and for 2007 – 2010 their share according to the administrative districts has remained practically unchanged.

Figure 1. Territorial structure of the turnover of organizations of the Sverdlovsk Oblast by the kinds of economic activities C, D, E, 2010

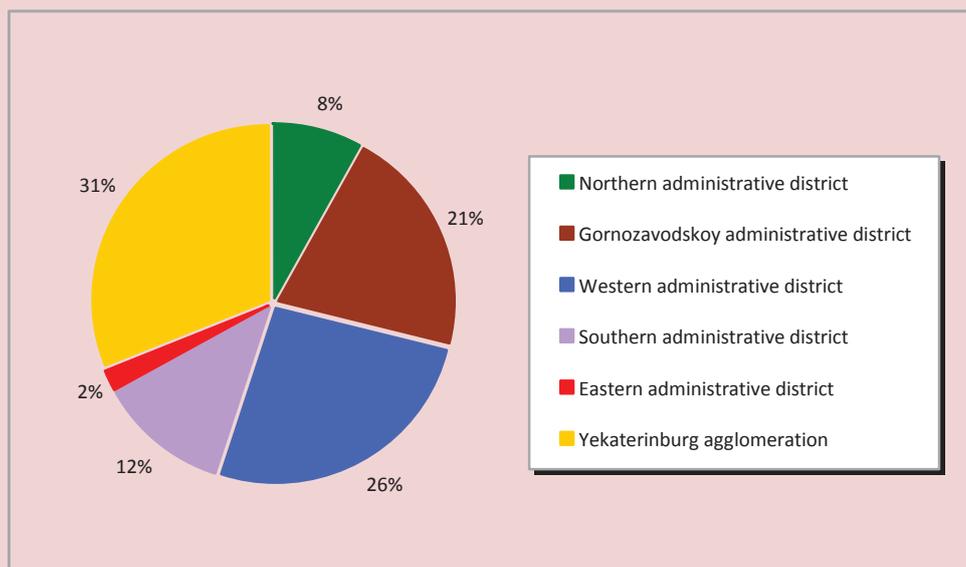


Figure 2. Dynamics of investments in fixed capital in the Sverdlovsk Oblast, million rubles

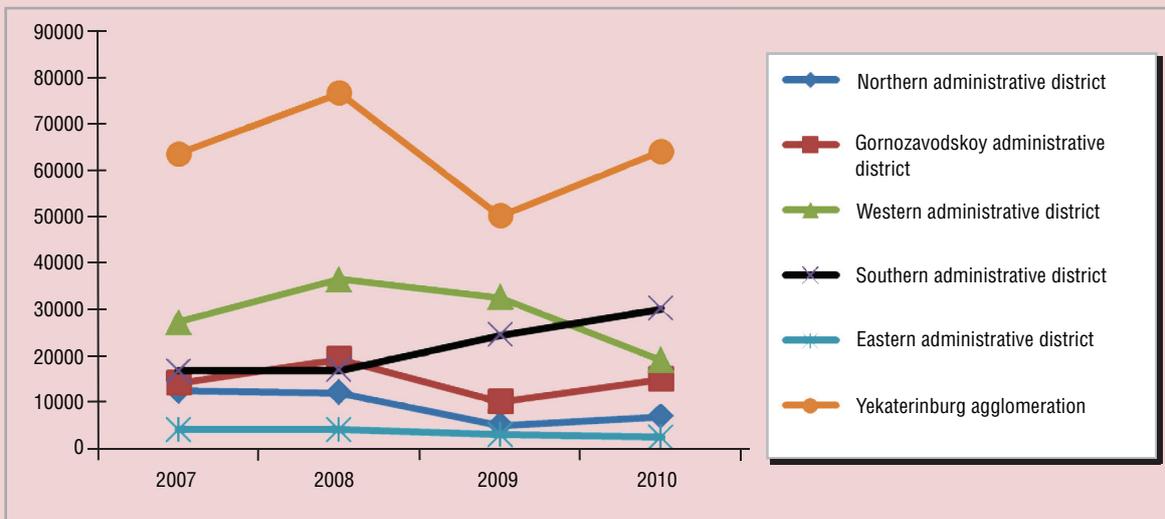
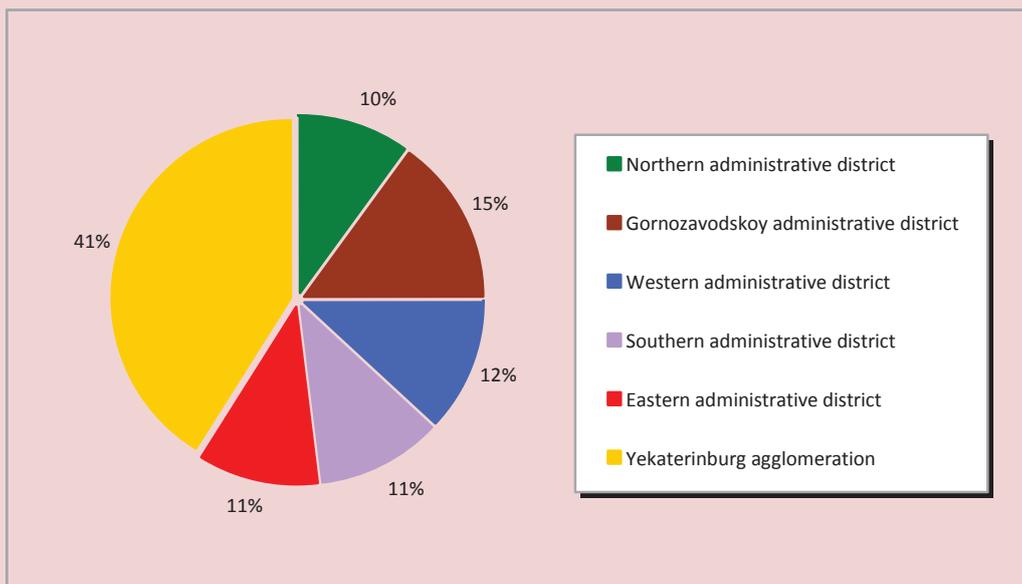


Figure 3. Territorial structure of working-age population in the Sverdlovsk Oblast, 2010



The largest number of the able-bodied population is concentrated in Yekaterinburg agglomeration (over 40%).

Thus, in case of the absence of state regulation in the form of the targeted industrial policy, taking into account territorial aspects, the process of “uncontrolled compression” of economic space is possible to develop in the region.

This will take place through the increase in the concentration of production, investment and population in Yekaterinburg agglomeration and the reduction of population and the number of settlements, as well as closing up the economic activity first in Eastern and Northern administrative districts of the Sverdlovsk Oblast, and then – in Southern and Western administrative districts.

The consequences of the uncontrolled process of narrowing the economic space consist in the reduction of the territorial basis of economy, as well as in the deterioration of its spatial structure, the disintegration of the spatial framework of the Sverdlovsk Oblast. Thus, the small towns, which form the basis for the economy and employment of the population of the surrounding rural areas, are disappearing and this process affects rural settlements as well. This increases the burden on the big cities, creating excessive tension in the employment, social sphere, crime rate, etc.

The European countries recognized long ago that the economic growth of innovation development is ensured not only by the largest cities. The experience of regional policy shows the importance of relations in the context of small and medium-sized towns, and the issues of enhancing the role of regional and local centres in rural areas are being rapidly resolved as well. The role of medium-sized towns is viewed in the linking of cities, small towns and remote rural areas. Medium-sized towns are capable, in the creation of appropriate conditions, of fulfilling an important function in promoting integration, curbing the depopulation of rural territories under the establishment of appropriate macroeconomic and regional conditions.

To prevent territorial compression, the Sverdlovsk Oblast, being one of the most advanced regions in the sphere of institutional transformations and the implementation of the neo-industrialization strategy, should develop the regional industrial policy, aimed at the following.

1. The use of market institutions of neo-industrial development for enhancing the quality of economic growth in the territories. These institutions include clusters, business territories.

The integrating nature of a cluster approach as an institution of regional development lies in the ability to find the comprehensive solution

of the following tasks: the regional development, aimed at enhancing the competitiveness of the region's economy and economic entities; the industrial policy, aimed at creating a competitive industrial complex in the region; the transition to the innovation model of regional development; the development of a competitive environment, small and medium-sized businesses in cooperation with large-scale businesses; the increase of the region's educational level, the development of regional infrastructure, etc.

This approach allowed the research team at the Institute of Economics of the Ural RAS Department to formulate the main provisions of the cluster policy in a developed region, the tasks of which are differentiated according to the different groups of clusters: functioning, latent, potential. Cluster policy is aimed at the formation of poles of competitiveness, which, in contrast to poles of growth, are characterized by collective performance, the endogeneity of innovations, as well as by the fact that the most important unifying element for the cooperation between the organizations belonging to different spheres, is the active promotion of such cooperation by the state and public bodies.

These centres for competitiveness can be successfully developed practically in all the administrative districts of the Sverdlovsk Oblast (*table*). Each centre involves from 5 to 15 municipal entities of the oblast in its development. The centre of cluster development and its environment will be linked through the closer cooperation between the enterprises, the creation of common labour markets, technologies, knowledge and the promotion of the enterprises' access to the use of common resources.

In order to implement the cluster effects in the Sverdlovsk Oblast, it is necessary to develop the new infrastructure for creating new jobs, launching the small and medium-sized production and services.

The following activities should be carried out in this respect:

- the comprehensive examination of the current condition of the territories that are planned to be used by cluster associations, the evaluation of engineering infrastructure and its potential, taking into account the modern technologies of enhancing the resource efficiency of the industry, the ecological constraints and opportunities;

- the combination of concepts and programmes on the development of clusters with the Sverdlovsk Oblast policy in the sphere of the placement of new objects of infrastructure and high-tech industries;

- the legislative support of the development of the oblast's industrial territories – the adoption of rules, regulations, etc., to initiate the re-development of complex territories that are important for the cluster development, including the town-forming territories.

2. The adoption of certain financial and political decisions at the regional level, aimed at the development of neo-industrialization processes and the creation of conditions for the self-development of the territories through the improvement of the relations of budgetary spending powers distribution and their financing. At present, a tendency is observed, when the increase in the number of spending powers causes the reduction of the territories' own income sources. In such a situation, the heads of municipalities have to think not so much about the neo-industrialization strategy, as about the solution of the most troublesome issues of territorial development. There has been a decline in the motivation of municipal authorities to increase budget revenues by broadening the tax base (i.e. the development of the economy) and increasing the fiscal performance, their initiative is restrained, dependency and irresponsibility are developed.

Calculations by the municipalities, for example, Perm Krai, show that the estimated coverage of expenditure obligations only for the

maintenance and repair of roads in 2009 was: about 35% in Krasnovishersky district, about 60% in Cherdynsky district, about 55% in Ilyinsky district. Thus, the calculation of only one authority indicates the significant lack of its funding. Such a situation is typical of the Sverdlovsk Oblast as well.

The Institute of Economics of the Ural RAS Department carried out the assessment of funds necessary for the transition to neo-industrialization development of the territories in the Sverdlovsk Oblast. It shows that the amount of funding is comparable with that of the actual oblast's budget. Thus, it is possible to form the system of commitment of the heads of municipalities to the socio-economic development of the municipal entity, if there is a political will and competent methodological support of the distribution of revenue and expenditure powers, the establishment of the cost of budgetary services in the region and the system of evaluating the efficiency of the expenditure obligations fulfillment.

3. The heads of municipalities should promote the creation of organizational, information, methodological conditions for the efficient interaction of all territorial sub-systems and economic entities in the municipality. The administrations of municipal formations are advised to do the following:

- ✓ to study and use their territories' potential of creating clusters, industrial parks, technology parks in order to enhance the competitiveness of the town-forming, budget-forming, socially important enterprises and to establish cooperative relations with small and medium-sized enterprises;

- ✓ to involve business entities in the process of personnel formation in the territory, especially in the field of secondary professional education (there are successful examples of such cooperation: for example, in the city of Pervouralsk the college tuition costs are compensated from the budget, while the enterprises of the city take on the costs of practical training);

Centres of cluster development in the Sverdlovsk Oblast

	Cluster name	Cluster status*	Location of the cluster's "core"	Location of other participants of the cluster**
<i>Functioning clusters</i>				
1	Ural pharmaceutical cluster	Inter-regional	Municipal entity "the city of Yekaterinburg", Novouralsky urban district	Sverdlovsk Oblast, Chelyabinsk oblast, Moscow Oblast (Skolkovo)
2	"Titanium Valley"	Inter-regional	Verkhnesaldinsky urban district	Sverdlovsk Oblast, Perm Krai (city of Berezniki)
3	IT – cluster	Regional	Municipal entity "the city of Yekaterinburg"	Sverdlovsk Oblast
4	Chemical cluster	Regional	The city of Nizhny Tagil	Sverdlovsk Oblast
5	Railway engineering cluster	Regional	Verkhnyaya Pyshma urban district	Sverdlovsk Oblast
<i>Latent clusters</i>				
6	Oil and gas equipment cluster	Regional	Municipal entity "the city of Yekaterinburg", Artyomovsky urban district	Sverdlovsk Oblast
7	Cluster for electrical machinery and power-generating equipment	Regional	Municipal entity "the city of Yekaterinburg", the city of Nizhny Tagil, Kamyshlovsky urban district	Sverdlovsk Oblast
8	Cluster for medical instrument- making	Regional	Municipal entity "the city of Yekaterinburg"	Sverdlovsk Oblast
9	Machine-tool cluster	Regional	Municipal entity "the city of Yekaterinburg", Kirovgradsky urban district, Verkhneye Dubrovo urban district	Sverdlovsk Oblast
10	Technology-implementing centre for metallurgy and heavy engineering	Inter-regional	Municipal entity "the city of Yekaterinburg"	Sverdlovsk Oblast, Chelyabinsk Oblast, Moscow
11	Ural technology cluster "Production and use of rare earth metals"	Inter-regional	Novouralsky urban district	Sverdlovsk Oblast, Chelyabinsk Oblast, Kurgan Oblast, Moscow
12	Pipe-producing cluster	Regional	Municipal entity "the city of Kamensk- Uralsky"	Sverdlovsk Oblast
13	Timber-processing cluster	Regional	Turinsky urban district, Municipal entity Alapayevsky (Verkhnyaya Sinyachikha rural settlement)	Sverdlovsk Oblast
14	Wooden house-building cluster	Regional	Tavdinsky urban district, Krasnoturyinsk Urban district	Sverdlovsk Oblast
15	Automotive industrial cluster	Regional	Novouralsky urban district	Sverdlovsk Oblast
16	Tourist cluster	Regional	Severouralsky urban district, Karpinsk urban district, Verkhoturysky urban district, Nevyansky urban district	Sverdlovsk Oblast
<i>Potential clusters</i>				
17	Chemical and metallurgical cluster	Regional	Pervouralsk urban district	Sverdlovsk Oblast
18	Bioenergy (peat) cluster	Regional	Verkhnesaldinsky urban district, municipal entity "the town of Irbit", municipal entity "the city of Yekaterinburg"	Sverdlovsk Oblast
19	Agroindustrial cluster (on the basis of the enterprise "Good taste")	Regional	Municipal entity "the city of Yekaterinburg"	Sverdlovsk Oblast
20	Transport and logistics cluster	Regional	Municipal entity "the city of Yekaterinburg"	Sverdlovsk Oblast
21	Scientific-educational cluster	Regional	Municipal entity "the city of Yekaterinburg"	Sverdlovsk Oblast
* In this table the status is estimated according to the location of the cluster's "core" and its other participants.				
** Determined as of 01 June 2011 for the functioning and latent clusters, and also for the potential clusters that are envisaged by the appropriate cluster initiative.				

✓ to participate in enhancing the prestige of working professions (through the city contests of professional skills), which should also become one of the tasks of the heads of industrially oriented municipal entities.

Thus, it is only the system approach to industrial policy in the region, combining its

technological, institutional and territorial aspects, that is capable of implementing the neo-industrialization trends in Russia and its old industrial regions, aimed at the considerable increase of efficiency of industrial production and the creation of new productive jobs.

References

1. Attempts to solve the problem of comparison of optimality conditions. Available at: <http://bugabooks.com/book/83-istoriya-yekonomicheskix-uchenij/74-5-popytki-resheniya-problemy-sopostavleniya-optimalnyx-sostoyanij.html> (Accessed 15 August 2011)
2. Gubanov S. On the policy of neo-industrialization of Russia. *Economist*. 2009. No. 3.
3. Gubanov S. Neo-industrialization and vertical integration (on the formula of the development of Russia). *Economist*. 2008. No. 9.
4. Lyubushin N.P., Babicheva N.E., Korolev D.S. Economic analysis of the opportunities for technological development of Russia. *The economic analysis: theory and practice*. 2012. No. 9. P. 4.
5. Kimelman S. Integrated resource-processing model. *Economist*. 2012. No.1.
6. Amosov A. On the neo-industrialization scenario in the concept of development up to 2020. *Economist*. 2011. No. 6. P. 15-16.