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Diversifiñation of the Economy of Kazakhstan as Condition of Engineering Development on Innovative Basis

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Abstract: The article considers questions of diversification of the economy of Kazakhstan which is referred to creation of developed industry of innovative type in the country. Thus special attention is paid to engineering, as a leading branch of the economy, which substantially defines development of other branches on innovative basis. The current state of engineering was studied and the problems constraining its development were revealed. The great value is attached to primary development of priority directions of engineering and restructuring of operating machine-building enterprises and for this reason there are necessary resources and technologies in the country borrowed from foreign countries.

Key words: Engineering · Diversification · Restructuring · Consolidation · Ratio of capital renewals · Innovation · Investment

INTRODUCTION

At the present stage of developing the economy of Kazakhstan one of the most important tasks is its diversification which is referred to the change of existing ratio between extracting and processing branches of industry in favor of the last one and ensuring its primary development. Diversification as the process of forming modern branch structure of the economy is shown in structural adjustment of its spheres and sectors, cardinal change of the directions of production, i.e. restructuring of the operating enterprises for the purpose of phasing out outdated production and adjustments of essentially new or modified production.

In connection with the necessity of implementing diversification and modernization of the economy in Kazakhstan a series of state programs was adopted for the last decade and their purpose is creation of developed industry of innovative type consisting of high technology productions, aimed at production release with a high added value first of all in the processing sector of the economy. Among these programs much significance is given to the state program on forced industrial and innovative development of the Republic of Kazakhstan for 2010-2014. According to this program 294 investment projects for the sum of KZT 8,1 billion will be used in Kazakhstan, so it will allow to increase the share of innovatively active enterprises to 10% from the number of operating ones to completion date [1].

The main instruments of continuing purposeful work on implementing basic regulations of this program for the next period are the developed programs as "Industrilization Map of Kazakhstan", "Scheme of Rational Placement of Manufacturing Capacities", "Road Map of Business-2020" which in a complex of additionally accepted programs “Export-2020” have to provide structural adjustment of national economy and its deviation from raw direction.

At the present time raw branches continue occupying the dominant position in a total amount of industrial production and 90% of all country export comes to the share of production that testifies to low level of diversification of domestic industry. In conditions of insufficient development of processing branch a high share of raw materials in export trade is justified with the fact that fuel and raw component of the economy brings in to the republic quite large income necessary for investment of production in non-raw branches and overcoming by means of intensive development of their technological lag of the country from the developed countries of market economy. While branches of manufacturing industry haven’t come to a path of stable

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growth, the income of raw export will continue to play an important role even in formation of revenues of the state budget and ensure planned growth rates of gross domestic product (GDP).

Today on the economy level of development Kazakhstan is already included into the number of fifty competitive countries of the world, that growth of their gross domestic product from 50 to 90% is defined by innovation in the field of equipment and technologies generally used in production of final products. In this regard Kazakhstan has to refer the most part of resource potential on structural adjustment and economy modernization for improving technical basis of production and improving the range of produced domestic production as well as its qualitative characteristics on the basis of developing new equipment release on available ones and newly created manufacturing capacities of machine-building complex [2].

Along with the processing industries engineering is distinguished with difficult structure of making final products thanks to which it is considered to be a leading branch of the economy of any country that creates conditions for its development. The range and quality of the products released by this branch makes technical basis of production of goods and substantially define development of other branches of the economy. Therefore engineering in the Republic of Kazakhstan is raised in a rank of priority branch of processing sector of the economy and its development in connection with acceptance of the strategy "Kazakhstan-2050" nowadays became a new starting point of industrial production growth of the country [1].

The difficult situation which occurred under the present circumstances in the machine-building complex of the Republic from which the country can't still arrange itself, was substantially caused by disintegration of the union, severance of economic ties between former union republics, lack of volume of necessary financial funds and scantiness of their sources. In Kazakhstan in the Soviet period of time there were more than three thousand machine-building enterprises of any kind which made production to 20% of gross domestic product of the country.

In the 1990s when mass privatization and increase in prices for food, metal, raw materials and fuel began, engineering practically suspended its activity. Engineering plants, except defensive ones, became unprofitable and most of their owners changed the profile of enterprises. As a result of necessity of the country for machine-building production 80% were satisfied at import expense. At the present time Kazakhstan annually imports cars and equipment, transport vehicles, devices and automatic machines for nearly US $ 17 mln. From its part Kazakhstan exports forge-press equipment, metal-cutting machines, accumulators, centrifugal pumps, x-ray equipment. Domestic needs of the country are covered only by 20%, taking into account export delivery by machine-building production.

Thus within the country the consumed machine-building production generally consists of equipment, junctions and units used for mining and metallurgical needs oil and gas industries as well as.

Transition of the machine-building branch within the program of accelerated industrial and innovative development for 2010-2014 to innovative development demands improvement of general conditions of engineering and its modernization by technological updating of fixed assets and production, increase of resource potential on a new technical basis.

Now about 2,0% come to the share of machine-building complex from the volume of investment into fixed assets of production purpose. Degree of wear of fixed assets reached 55-60%, including their active part - 75-85%. On the majority of enterprises the ratio of renewal and retirement of fixed assets is low.

Researches of engineering condition in Kazakhstan showed that the main problems constraining development of this industry, are:

- high level of equipment wearing (55-80 %);
- low competitiveness of machine-building production;
- low technical condition of the active part of industrial and production funds and insignificant level of innovative activity in the branch;
- incomplete use of available capacities;
- investment unattractiveness of the branch and insufficiency of circulating assets at the enterprises;
- deficiency of qualified personnel in the sphere of production and management by the enterprises;
- low level of cooperation ties between machine-building enterprises of the republic with the enterprises of the near abroad countries as well as the leading world producers of similar production;
- low share in production of science-intensive, high-technology products with high added cost.

For domestic engineering in conditions of innovative development of the economy it is very important to borrow machinery and technologies made by developed countries whose import is cheaper for the country than their development. It gives benefit to the country in the

form of money and time economy given for structural adjustment of engineering and implementing of modernization of its production [3,6].

At the present time the only rational way of restructuring modernization of production in engineering is the use of foreign technologies and experience for creation of own model of development of this branch, effective price-quality criterion, service and maintainability costs in conditions of Kazakhstan [7]. As a result of using this model in domestic engineering one can observe a positive change connected with its development and transition to more economic and ecological models of cars and expansion of their range on the basis of unified platforms and new methods of computer-aided design. Thus there was an opportunity to realize through automation of processes planning, designing, preparing and functioning of product production and maintenance of new engineering products. On such basis it is possible to reduce the cost and development terms as well as production of new products. In recent years with introduction of machine-building production in production of new technologies such types of production as production of vehicles (railway, automobile, light aircrafts), solar batteries and wind engines for using the energy of the sun and wind, the use of computer designing promoted their development in Kazakhstan. Along with these types of production, production of oil-field and drilling geological prospecting equipment, agricultural machinery and equipment for processing of agricultural products, electric and household appliances are continuing its development. All these products of machine-building production in the Republic of Kazakhstan including vehicles is the production of innovative process which is coming from engineering, its priority directions of development.

The priority engineering directions of the republic consist of labor-consuming, metal and science-intensive branches, each of them in their turn consist of subsectors: heavy engineering, average engineering, precision engineering, production of hardware and procurement of machine mending and equipment. At such a big variety types of engineering there is necessity of optimization its branch structure at the same time with restructuring machine-building enterprises operating on an old technical basis prevailing in this branch now. Implementation of engineering structure by optimization provides transfer of this branch to a new resource saving, high technology and ecologically reasonable model of functioning for assuring competitiveness of machine-building enterprises [8].

Thus much attention is paid to creation of conditions for advancing development of priority branches of engineering when degree of self-reliance of the country's machine-building production depends on dynamic growth, including innovative production replacing the import one. In this regard restructuring of the operating machine-building enterprises aimed at equipping of their production by high productive machinery and equipment which assures reduction in power and consumption of materials as well as rising its qualitative features is of great importance [9].

Optimization of branch structure engineering of Kazakhstan has to be provided with the process of improving this structure by means of creating and developing new types of production of innovative products. For this purpose there are necessary resources and technologies in Kazakhstan borrowed from foreign countries. For example, in the republic there is only sheet steel and qualitative copper that allows to organize production of electric motors. Processing of hydrocarbonic raw materials in Kazakhstan is restricted with oil and gas operation without further effective use of petrochemical raw materials. Having organized deep processing of these raw materials it is possible to make production of plastic details for machine equipment. Kazakhstan also has opportunity to organize production of machinery for nuclear power by establishing joint ventures with foreign partners on the basis of effectively operating enterprises in the territory of the republic.

Development of domestic engineering industry on the basis of its priority directions has to be based on optimization of intersectoral effects, initiated by innovative and technological reequipment.

Methods of developing and introducing innovative programs within intersectoral complexes are aimed at coordinated and balanced development of the production device and release of competitive production on the basis of innovative technologies on all technological chain [10]. The use of these methods will allow to form the direction of industrial policy in the field of engineering focused on creation of this branch with participation of effectively working intersectoral complexes as a basis of innovative and technological modernization of industry branches.

As a result of implementing the industry program on engineering development in the Republic of Kazakhstan for 2010-2014 developed within the Program of forced innovative industrilization in the country, 56 innovative projects in machine-building industry will be developed and most of them have already been launched in engineering.

All this multiplicatively influence on all other branches of national economy. For the last three-four years 540 enterprises in the country were put into operation, they were equipped with new equipment and technology, including 350 various productions that begun serious structural changes in the economy of Kazakhstan. By the end of 2014 the volume of annual value added in the republic will increase to KZT 7 trillion, that will approximately make about 17,5% of produced gross domestic product and a share of manufacturing industry in gross domestic product structure will make about 12%. Thus the share of non-raw export in the total amount of country's export will make not less than 40% [1]. These powerful indicators confirm that diversification of the economy approaching it to standards, characteristic for developed industrial countries of the world are successfully being carried out in the Republic of Kazakhstan.

But archaic structure of operating engineering enterprises of the country can prevent to increasing rate of diversification, especially in engineering [5]. The average sizes of Kazakhstani engineering enterprises is many times less than in the developed countries as the USA and the European community.

Besides, in production structure of these enterprises except the main (processing and collecting), blanking shops (foundry, smithery, press, cutting and blanking) and other shops (tool and repair), sites and service enterprises. At such industrial structure the enterprise becomes difficult to be controlled and it is non competitive not only on external but in internal market as well.

If these enterprises for production of their products receive necessary raw materials (mill bar, castings, different materials) centrally from the special procuring enterprises, for example, foundry and smithery plants, so it will lead to simplification of their structure and increasing of economic production efficiency. Development of organizational structure of engineering on this basis demands rather less investment for restructuring of enterprises and modernization of production [4]. Thus use of a corporate type management by consolidation forces of representatives of science, education and practice at regulating role of the state creates necessary conditions for acceleration of innovative process in industrial and commercial activity of machine-building enterprises. Creation of large corporate associations in engineering as in extracting branches (KazMunaiGas, Kazakhmys, Kaztsink, TNC Kazchrome) promotes to develop engineering on innovative basis and increase its competitiveness by the structure of its management.

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