ORGANIZATIONAL-ECONOMIC RESERVES FOR THE DECLINE IN ELECTRICITY INTENSITY OF THE DOMESTIC MECHANICHAL ENGINEERING OUTPUT

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The article considers organizational-economic and scientific-technical problems of the electricity efficiency improvement in the Russian Mechanical Engineering industry. A study of the trends of electricity intensity of the Mechanical Engineering output in dynamics has been performed. The measures for solving the identified problems have been designated.

Improving the efficiency of social production requires the acceleration of the pace of development of machine-building complex, which has an important role in the implementation and further increase of the country's energy potential. Power consumption is one of the most objective indicators of the real state of the national economy. Consumption of electricity in Russian industry during the 1990's has shown a slight fluctuation. Currently, the efficiency of energy use has decreased markedly, wihich is particularly significant in the most crisis-stricken industries, including mechanical engineering. The machine-building complex consumes more than 44 billion kWh of electricity per year. Electricity intensity is a measure of electricity efficiency of the Mechanical Engineering industry (see Figure). The present economic conditions do not contain yet the real prerequisites for sustainable decline of capacity of industrial products.

The state of the electricity market is currently determined by three important factors: the difficult financial situation of enterprises,

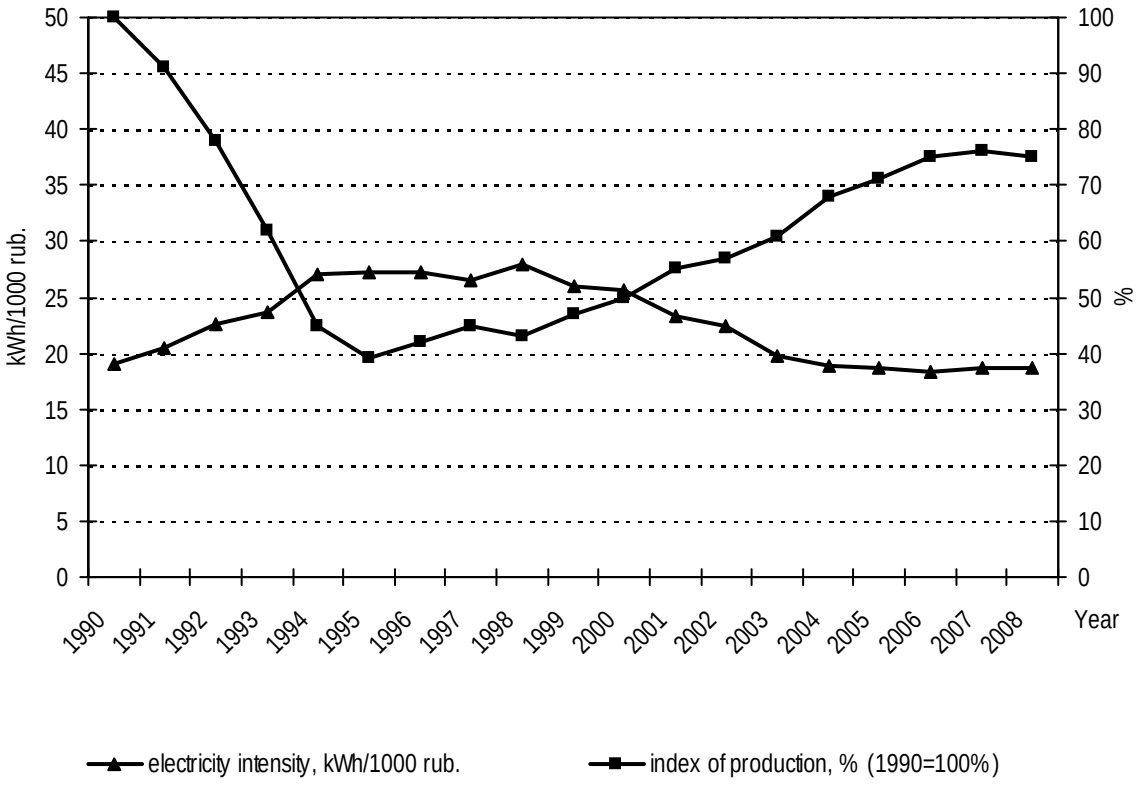

Fig. **Dynamics of output and electricity intensity in the Russian Mechanical Engineering industry in 1990-2008 (in current prices)**

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the low elasticity of demand for industrial customers and the growth of electricity tariffs due to the rising costs of production. Taken together, these factors contributed to the problem of debt to pay for electricity, which destabilizes the situation in the market and raises the threat of energy security. Russian Mechanical Engineering Industry Companies develop energy- and electricity-saving measures. However, at some companies energy conservation, including conservation of electricity, is becoming part of anti-crisis program. In other companies it is way to obtain additional competitive advantage. Energy conservation program is the result of a survey of energy production, to develop a system of energy saving measures and to assess their cost-effectiveness.

Change of electricity intensity depends on the progressives used in the industry, the actual volume of output, the level of capacity utilization and the value of non-loss of electricity. Positive trends of the electricity intensity can be achieved as a result of faster productivity growth compared with growth of the electricity efficiency use. Reducing unit cost of electricity is now one of the basic necessary conditions for the development in the industry and its branches. This trend reduces the cost of products, but also leads to a substantial reduction in investment costs on the scale of the economy associated with the production of additional quantities of energy. In addition, the increased use of energy resources will lead to increased productivity and, hence, increased output. This change would, in turn, improve the structure of energy production costs by reducing their constant parts. In general, the entire range of electricity-saving measures includes the individual steps (activities), characterized by its values of «cost» and «benefit». This allows the ranking of activities to reduce the extent of their economic attractiveness. It should be noted that energy conservation requires significant financial resources and should be considered as one of the directions of investment activity in Mechanical Engineering companies. Even the realization of low-cost electricity-saving measures, such as institutional arrangements to reduce costs by streamlining contracts for electricity, for optimizing the mode of production, reducing energy costs without reducing energy consumption, measures to optimize production management, reducing energy consumption, requires investment to create automated systems for monitoring electricity. The development of energy management in Russian Mechanical Engineering should be carried out on the most appropriate and efficient scheme. The main reason for non-system implementation of electricity-saving measures is the not sufficiently effective system of energy management, rather than the lack of financial resources in Mechanical Engineering companies.\Worldwide experience shows that energy efficiency is based not only on technical solutions, but primarily on better management.

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