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**EFFECTIVE USE OF ENERGY RESOURCES AND SAVING THEM IS THE  
GUARANTEE OF ECONOMIC EFFICIENCY OF INDUSTRIAL ENTERPRISES.**

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**Abstract**

*In the scientific article, behind the increasing demand for natural resources in the world, based on the world experience and the strategy chosen in Uzbekistan, practical works on saving and using energy and other resources and scientific definitions of these are given, and in order to increase economic efficiency in industrial enterprises, the organizational-economic strategy of the enterprise on resource saving is presented. the need for development has been researched. Also, important aspects in the formation of the resource saving strategy were considered, and the elements of the resource saving strategy were studied, and appropriate suggestions were made in this direction.*

**Key words**

*Energy resource saving, strategy, strategy for effective use of energy resources, alternative energy, resource elements, profitability, economic strategy, economic efficiency.*

One of the important conditions for achieving macroeconomic equilibrium and stable growth rates is the consistent continuation of structural changes in the economy, including increasing the share of finished products with high added value in the structure of production and export through deep processing of local raw materials and materials. The concrete and large-scale reforms implemented in our country in the years of independence in this direction are creating a solid foundation for the great results being achieved. The fact that the economy of Uzbekistan has grown 6 times in the last quarter of a century, despite the negative effects of the ongoing global financial and economic crisis, is a clear confirmation of this. One of the important sectors of economic growth is the industrial sector. One of today's important issues is that the industrial sector cannot achieve sustainable development without rational and economical use of resources in the era of global economic changes.

Industrial enterprises are the main buyers of the country's resource-raw material base, and as a result of the production process, they turn them into finished products. Studying the level of use of resources in industrial enterprises,

developing the most optimal option for their use based on the results, finding and implementing cost-effective ways of using them is the ultimate goal of every industrial enterprise. In the Resolution of the President of the Republic of Uzbekistan dated October 4, 2019 No. PQ-4477 "On approval of the strategy of the transition to a green economy of the Republic of Uzbekistan in 2019-2030" it is stated that "...in the conditions of climate change, there are interrelated problems and needs in ensuring an efficient resource-saving and ecologically safe economy" showed. In particular, accelerating industrialization and population growth are significantly increasing the economy's need for resources, as well as intensifying the negative anthropogenic impact on the environment and leading to an increase in greenhouse gas emissions. The absence of a long-term strategy does not allow to ensure systematic measures for the introduction of "green" technologies and the transition to a "green" economy"[1].

#### Analysis and results.

In order to strengthen the competitiveness of the national economy and implement a long-term strategy for implementing structural reforms, it is necessary to solve a number of other pressing issues. In particular, the system of using energy resources in the country should be fundamentally revised and transition to a model of development that ensures energy efficiency is a necessity today.

Consequently, due to the pace of industrialization and rapid population growth in our republic, energy consumption, especially the need for energy resources of economic sectors, is increasing significantly. Because according to UN forecasts, by 2030, the population of Uzbekistan will reach 40 million people.

This, in turn, requires the conservation of hydrocarbon resources and their rational use. Why, the reserves of these raw materials are limited. According to calculations, if the current level of resource consumption is maintained, in 2030 there is a possibility that the shortage of energy resources will be 65.4 percent of the total need.

Among hydrocarbon resources, natural gas deserves special attention. Because the dependence on natural gas in the structure of the needs of primary heat and energy resources in electric energy increases from 85 percent. 42% of natural gas consumption is for electricity production, 27% for population, 26% for economic sectors. That is why, first of all, it shows the need to increase the efficiency of using natural gas in thermal power stations (TPS) for the production of electricity and thermal energy.

Unfortunately, today the current technical condition of the industry is such that the share of costs in the cost of products produced in TPS is on average 94.5

percent, and in some stations it is more than 100 percent. This is due to the fact that the wear and tear of industrial equipment in thermal power stations is on average 91.73 percent. In 2015, the coefficient of useful work in the production of electricity in the condensing thermal power plants of the joint-stock company "Uzbekenergo" was between 28,4 and 42 percent, and the average was 33,5 percent. This is 1.5 times less than the indicators of modern thermal power plants of this type used in the European Union, Southeast Asia. Naturally, 1 kW. more heat and energy resources are used to produce electricity per hour compared to foreign electricity producers. For example, in 2015, EU countries installed 1 kW in their modern TPS. 269 grams of conventional fuel are used to generate electricity per hour, while this indicator reaches almost 374,9 grams at the thermal power stations of "Uzbekenergo" joint-stock company. [2]

The construction of steam-gas and gas turbines currently being carried out at Navoiy, Tolimarjon, and Tashkent thermal power stations, as well as such works are planned for Torakorgan, Takhiatosh, and Syrdaryo thermal power stations (TSP) in the near future, will increase the fuel consumption in the field by 1 kW. hour allows to reduce to 269 – 300 grams of conventional fuel for electricity production. These efforts, without a doubt, serve to reduce the cost of electricity and thermal energy production, which is one of the strategic tasks of ensuring sustainable development in the energy sector.

The high energy consumption in the chemical industry is itself the main reason for the increase in the cost of the product and its lack of competition. In the chemical industry enterprises of Uzbekistan, the share of costs in the production price is 99,7...100 percent. 64 percent of them are spent on energy resources. However, in foreign enterprises that use modern technology and equipment, this indicator is only 25...30 percent.

In particular, 1,868 cubic meters of natural gas are used to produce one ton of ammonia in Uzbekistan. If modern Haldor Topsoe equipment is used in this process, this indicator will not exceed 902 cubic meters. That is, the consumption of natural gas for the production of ammonia in the enterprises of our country is more than 2,1 times higher than when modern technologies are used. In such production entities, electricity is used 1,5...2.5 times more than in similar modern enterprises. In addition, the operating costs of outdated equipment are 1,5 ... 2 times higher due to maintenance.

Calculations show that if some energy-efficient facilities are launched in Uzbekistan, it is possible to reduce energy consumption by 2-2.5 times, and the cost of ammonia by 1.8 times. This situation is also observed in the production of other

types of mineral fertilizers. For example, in the production of nitrogen, the share of energy resources in the product cost is more than 70 percent, and the energy consumption is 2-2.5 times higher than abroad.

In general, a one percent reduction in energy consumption in the chemical industry allows for a 0,6...0,8 percent reduction in product costs.

It should be noted that mineral fertilizers produced by chemical enterprises are included in the register of monopoly products. The profit provided in the price of a monopoly product is not always enough to replenish its working capital in order to renew production capacities, develop the enterprise and prevent financial and economic risks.

In addition, the situation worsens due to the debtors of agricultural enterprises, who buy mineral fertilizers, and on the other hand, the surplus of produced products, which causes the increase of creditors' debts of energy resource suppliers.

Increasing energy efficiency in the chemical industry requires full modernization of existing ammonia and nitrogen production facilities through the introduction of advanced technologies and decommissioning of energy-intensive facilities. This creates the basis for reducing the energy consumption in the preparation of ammonia by 1.5 - 2 times. Although a decision was made to build modern ammonia, urea, and nitric acid production facilities in place of the outdated facilities of "Navoiyazot" in Navoi region, "Fergonazot" does not have a clear strategy in this regard. Unfortunately, the products of this company are not able to withstand the competition in the domestic market, let alone the foreign market.

The building materials industry is also a large consumer of heat and energy resources. The share of fuel and energy consumption in the production and sale of products in this sector reaches 50%. This is, of course, the result of factories built in the last century still using outdated technologies. Today, the so-called "wet" method, which has high energy consumption, is widely used in three cement production plants. For example, 286.7 kilograms of conventional fuel are used to produce one ton of product at "Ohangarontsement", 246.6 kilograms at "Kuvasoystsement", and 230 kilograms at "Bekobodsement". Among the cement factories in our country, only "Kyzilkum-sement" consumes less fuel, i.e. 130 kilograms of conventional fuel. This is the result of the implementation of the "dry" method. But this indicator is 30 percent more than the corresponding enterprises in Japan and the Republic of Korea. In these enterprises operating in the "dry" method, the total consumption of conditional fuel does not exceed 120 kilograms

per ton of clinker. Cement factories in China and Turkey have similar figures. And it is they who enter the main competition with domestic manufacturers in the domestic market. As a result, our cement products are losing their competitive position due to the price factor.

Reducing energy consumption by even 30% through the introduction of high-efficiency technologies will allow saving 230,000 tons of conventional fuel or 200 million cubic meters of natural gas in cement plants. As a result, the cost of cement will decrease by 15-20 percent.

Also, energy resources are consumed in large quantities in the production of bricks. International practice shows that there are technologies that drastically reduce energy consumption in production. In particular, by using gas-tight tunnel furnaces, by expanding the space, fuel consumption can be saved by 30-40 percent. But these technologies are not popular in the enterprises of our country.

In this sense, it is necessary to fundamentally modernize construction industry enterprises in our country, to introduce high-tech lines into practice. Special attention should be paid to energy-efficient technologies. For example, starting the production of bricks in porous foam reduces fuel consumption by 15 percent. It is also very important to master the production of modern types of heat-retaining materials used in construction. After all, 1 cubic meter of such material in the wall construction embodies the heat-insulating properties of 3,000 bricks. Although only 50 kilograms of conventional fuel are used for product production, 1000 kilograms of conventional fuel are used to make 3 thousand bricks.

These and other energy-saving measures will lead to a sharp reduction in energy consumption in the building materials industry, resulting in lower product costs. This is especially important in domestic and foreign market competition.

Indeed, increasing energy efficiency opens a wide way to save energy resources, primarily natural gas, which is of strategic importance for Uzbekistan, and at the same time to produce products with high added value. For example, the conversion of 3.5 billion cubic meters of natural gas into synthetic liquefied fuel allows for a 7-9 times increase in added value compared to raw materials. Calculations show that the cost of gas production in Uzbekistan using GTL technology is somewhat lower than the world standards. In particular, methanol production will be 2 times cheaper, and synthetic fuel will be 1.6 times cheaper. This is an important factor in achieving high competitiveness even when taking into account the value of gas at export prices.

Many such examples can be cited. If we take the value of one thousand cubic meters of natural gas as a unit, if plastic products are produced from it, the market

value will increase by 15 times, and the finished products will increase by 25 times. It can be seen that it is desirable to accelerate the export of products obtained as a result of the processing of an increasing part of natural gas exports. [3]

At the same time, the additional funds remaining from the saving of energy resources can be directed to the modernization of the leading enterprises of our economy, to the purchase of modern energy-saving equipment with high production capacity. It serves to reduce the cost of the manufactured product through the introduction of energy efficiency, increase its competitiveness in domestic and foreign markets, and ultimately accelerate structural changes.

In the concept of providing electricity to the Republic of Uzbekistan in 2020-2030, it is necessary to meet the growing demand for electricity in the Republic of Uzbekistan at competitive prices and to modernize and reconstruct existing power plants, establish new production facilities based on high-efficiency energy production technologies, and establish an electricity accounting system. rapid development of the electric energy network of the Republic of Uzbekistan through improvement, development of the use of renewable energy sources and diversification of fuel and energy resources. [4].

All this is a continuation of the long-term state strategy to improve energy efficiency. It envisaged ways to comprehensively solve the issues of saving energy in all sectors and branches of the economy, expanding the use of renewable energy sources in the national economy and population consumption, launching modern power generation facilities, and transitioning to a "green economy". Undoubtedly, the use of the huge unused reserve of increasing energy efficiency plays an important role in solving the priority tasks of increasing the competitiveness of our national economy and ensuring high-speed growth of our gross domestic product. [5]

Conclusions and suggestions:

In order to save energy and other available resources and use them effectively, some recommendations can be made to industrial enterprises in the following directions:

1. To ensure the long-term economic efficiency of the enterprise by establishing local energy networks instead of existing energy resources (wind turbines, solar panels, etc.).

2. Use of resource-saving equipment and technology that consumes less energy resources.

3. Unification of the components of the product, that is, making the product look the most optimal from all sides in terms of product type, shape, materials, and methods of preparation.

4. Taking into account the participation of the labor team of the enterprise in making decisions on resource saving issues.

5. Monitoring the process of resource saving in the enterprise.

6. Determining comparative levels of resource utilization in production units and forming a database for each type of product;

7. Accounting of real consumption of all types of resources - conducting an audit of consumption of each type of resources in units that exceed the indicators specified in the books.

8. Development and implementation of a plan of organizational and technical measures to save resources for units with a high level of use of unreasonable resources. [6]

#### **USED LITERATURE:**

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