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IMPROVING ENERGY MANAGEMENT AND DIGITALIZATION OF THE ENERGY SECTOR IN UZBEKISTAN

Annotation: Improving energy management and digitalization of the energy sector in Uzbekistan are aimed at improving the efficiency and sustainability of the country's energy infrastructure. The introduction of modern management practices and digital technologies makes it possible to optimize the processes of energy distribution and consumption, improve control and accounting of energy resources, as well as reduce costs and increase transparency. Digitalization includes the introduction of intelligent energy accounting and management systems, which contributes to more effective monitoring and analysis of energy flows. As a result, these initiatives contribute to the modernization of the energy sector, improving its functioning and ensuring the sustainable development of energy resources in Uzbekistan.

Key words: management, energy enterprises, production, digitalizationб energy sector

Today, the global energy sector is moving to a significant stage in the technological shift, which began in 1880 with the invention of the bulb by the Edison Electric Light Company. Business models include innovative technologies, including decentralized energy generation technologies, virtual power plants and energy storage devices will be built around. In the near future, the widespread conventional energy supply and Energy Exchange will give way to modern energy infrastructures. Soon, the demand for Intelligent Systems for the regulation of the industry with new technologies, in particular subsidies for renewable energy sources, energy accounting and transmission, will increase dramatically. Modernizing the economy based on the widespread introduction of modern energy, in particular renewable energy sources and energy accounting and intelligent transmission systems, reduces the dependence of countries on external energy resources.

Energy conservation at the enterprise is one of the most pressing issues faced by the industry. This is due to the constant increase in the cost of electricity and other energy sources. Production expenses include raw materials and supplies, fuel, and operational work, but the most expensive is the payment for the energy component.

The energy-saving measures that you implement at your enterprise will allow you to significantly reduce the costs of energy sources, thereby positively affecting the technical and economic performance of the enterprise or production. This is immediately observed in increased profitability and improved competitiveness of the products due to the reduction in the cost of production or services.

The figure of energy capacity of Uzbekistan's GDP is more than 1.7-2.0 times the figure of developed countries indicates that in the near future there are enough opportunities for the effective use of energy resources in our country, as well as priority issues such as optimal use of energy resources, increase energy efficiency, reduce energy capacity, large-scale use of alternative energy sources. At the same time, in the last six years, our population has increased by 13%, and industrial enterprises by 2 times, increasing from 45 thousand to 100 thousand. As a result, the demand for electricity has increased by at least 35 percent and is increasing from year to year.

For the sustainable development of our economy, $ 25-30 billion in investments are needed in the energy sector. This can only be achieved by attracting private investment. Therefore, in the last

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three years, $ 8 billion of direct investment has been attracted to the industry. In particular, last week, the competition for the construction of 3 more solar stations with a capacity of 500 megawatts was completed in Bukhara, Namangan and Khorezm. New laws passed by deputies and senators provided the legal basis for this. From the beginning of the year, we launched 7 power plants with a capacity of 1.5 thousand megawatts. Next year, we will complete 11 large projects with an additional 4.5 thousand megawatts. In particular, an additional 14 billion kilowatts of electricity will be produced at the expense of solar and wind farms to be built in Bukhara, Jizzakh, Kashkadarya, Navoi, Samarkand, Fergana and Tashkent regions. This will increase household electricity by 50 percent.

The digitalization of energy sectors in our country and the use of renewable energy in all sectors of the economy is an important factor in increasing competitiveness in the sectors in the long term. The development of digital energy and the widespread introduction of renewable energy sources have a positive effect on the reduction in costs for the provision of energy resource services in industries, an increase in production efficiency, as well as the availability of sustainable energy, savings in financial resources and mitigation of complications of climate changes.

The large potential of renewable energy sources in our country will further stimulate the development of an environmentally friendly and green economy. Uzbekistan's total renewable energy potential is 117,984 million. t.n.e.ni it has a technical potential of 179.3 million. t.n.e.ga is equal to. The main share of this potential is made up of solar energy, which has a gross potential of 50,973 million. t.n.e. and the technical potential of 177 million. t.n.e.ga is equal to. The technical potential of solar energy is 3-3.5 times more than the primary energy consumption of our country. The favorable climatic and geographical location of our country provides a wide range of access to the potential of solar energy for industrial purposes. (1-table)

1-table

Potential of renewable energy sources in Uzbekistan.

Renewable energy sources	**Total potential Mln (renewable energy sources)**	**Technical potential Mln (renewable energy sources)**
Hydropower	9,2	2
Wind energy	2,2	0.4
Solar energy	50973	177
Total renewable energy sources (excluding geothermal energy	50984	179
Geothermal energy	67000	0.3
Common renewable energy sources	117984	179.3

As in other developing countries, there are a number of problems, difficulties and negative influencing factors associated with the development of the renewable energy sector with digital energy and relatively innovative energy:

1. The high cost of producing renewable energy sources and the low capacity compared to conventional energy sources, the low cost of the unit of conventional energy sources compared to other countries. Today, the value of electricity generation based on renewable energy in developing countries remains high compared to conventional energy sources. Our country is at the forefront of the world in terms of the low cost of supply to the population of electricity produced in the traditional way. The 2018 cost per kWh of electricity for the population in our country averaged 2.4 cents [2],

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compared to 3.5 cents [3] in Kazakhstan, 0.7 cents [4] in Turkmenistan, 4.8 cents in Russia, 13.0 cents [5] in China, 33.8 cents in developed countries, 18.6 cents in the United Kingdom, 33.3 cents in Denmark, 31.8 cents [6] in Belgium. Due to the fact that it is now cheaper for our country to use natural gas in the production of electricity, electricity production on the basis of renewable energy sources is important only in ensuring the supply and continuity of electricity mainly in remote areas.

2. Measures (Definitions and taxes) encouraging the use of digital energy and renewable energy, and the lack of clear financial mechanisms for state support. Lack of formation of a sufficient legislative framework on the economic mechanisms of promoting the use of renewable energy sources.

3. Insufficient development of progressive techniques and technologies based on modern control systems. One of the main reasons for the low pace of development of digital energy and renewable energy sources is the technical imperfection of technologies for the production of this type of energy, as well as the low efficiency of the capital return of financial resources involved in this energy system in the short term from an economic point of view.

4. As in many developing countries, the population has not had enough information about the digitization in energy networks and about modern types of energy, especially about the possibilities of electro energy in a renewable character, and has adapted to old-fashioned views.

5. The fact that digital energy and renewable energy sources have an innovative rapid development characteristic of technology and technology. For example, solar electric panels were originally based on semiconductor silicon, while later production of photoelectric panels exchanged for amorphous silicon. While only glazed solar panels were originally produced, modern flexible plastic solar panels are now also produced. Due to the insufficient localization of production of renewable energy, technologies and technologies, their cost, installation and maintenance costs remain expensive. Rapid development in the industry requires the transition from previously introduced technologies to new ones over time until the capital return is fully realized.

From the above, the following conclusions have been developed:

-it is necessary to digitalize energy sectors in the country and eliminate a number of problems and negative influencing factors associated with the development of the renewable energy sector;

- it is necessary to effectively use factors that positively affect the development of the energy sector, as well as to increase the level of digitization in the energy sectors and the share of renewable energy sources in primary energy consumption;

-ensure that renewable energy sources are not completely exhausted in practice, that it has some type in all regions, and that interest in using this type of energy will increase further in the near future, etc.

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