EFFICIENCY OF USING ALTERNATIVE ENERGY SOURCES IN UZBEKISTAN

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Annotation: In this article, the economic and environmental benefit of alternative energy sources in our republic based on current demand is highlighted with the help of a number of suggestions and examples. In particular, a number of foreign countries' work in this regard is given as an example.

Keywords: alternative energy, savings, energy sources, technique, technology, wind generator, solar panels, alternative energy system.

Annotatsiya: Ushbu maqolamizda kun talabidan kelib chiqqan holda respublikamizda muqobil energiya manbalarining iqtisodiy, ekologik jihatdan naf keltirilishi shu xususida bir qator taklif va misollar yordamida yoritilib berilgan. Jumladan, bunda bir qator xorijiy davlatlarning bu borada qilayotgan ishlarini namuna sifatida keltirilgan.

Kalit so‘zlar: muqobil energiya, tejamkorlik, energiya manbalari, texnika, texnologiya, shamol generatori, quyosh panellari, muqobil energiya tizmi.

INTRODUCTION

The rapid development of the economy of Uzbekistan, the construction and commissioning of new plants and factories, changes in transport and infrastructures, and the rapid growth of the population lead to a sharp increase in the demand for electricity in our country.

In the future, the use of renewable energy sources is undoubtedly necessary for the provision of energy, ecological, economic security and sustainable development of the energy sector in the Republic of Uzbekistan.

A prerequisite for preserving natural resources and protecting the environment for future generations is renewable and is the development of alternative energy sources. In fact, a new era of alternative energy use has begun in our country today. That is, the process of development of renewable energy sources, which is under the attention and strict control of our honorable President, is accelerating. Uzbekistan also aims to double the share of alternative energy sources in the total volume of electricity production by 2030, i.e. to 26%. According to the plan, solar power plants with a total capacity of 5,000 MW and 3,000 MW of wind power plants will be built within 10 years. Of course, with the large projects being implemented and produced in this direction, the achievement of this goal will be accelerated.

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In recent years, a wide range of measures have been implemented to ensure the saving of electricity in the economic and social spheres of the republic, including the development of renewable energy sources and one of the main decisions of the government to increase energy efficiency in the republic, Uzbekistan ‘‘Further development of renewable energy in 2017-2019, economic sectors and the decree on the program of measures to improve energy efficiency in the social sphere’’ is considered a decree.

RESEARCH MATERIALS AND METHODOLOGY

Expanding the use of renewable energy sources, reducing energy consumption in production, and local scientific and technical development coordination of its implementation in practice and research of advanced international energy-saving technologies are being carried out. The Ministry of Economy, Ministry of Agriculture and Water Management, Academy of Sciences of the Republic of Uzbekistan, "Uzbekenergo" JSC and "Uzbekgidroenergo" JSC "Further development of renewable energy, including the target parameters for the development of renewable energy" Program of measures to increase energy efficiency in the economy and social sphere in 2017-2021"; "List of investment projects for the development of renewable energy sources"; "Comprehensive program of measures to improve energy efficiency in the economic and social spheres for 2017-2021" was approved.

It was clearly felt in the winter of this year that the power of existing sources of electricity was not enough to meet these demands. Currently, the electricity produced in Uzbekistan is mainly obtained from heat (85 percent) and hydroelectric power stations (13 percent). The amount of energy obtained from alternative energies is 1.5-2 percent based on the information obtained from various sources. Due to the efforts of the head of our country, outdated energy generating devices have been replaced by more efficient ones, and new capacities are being built using internal capabilities. Despite this, today's level of development is difficult to provide with electricity. The reason for this is the decrease in reserves of natural hydrocarbon resources, the absence of large rivers in our country and the distance from the sea and oceans, which limit the increase in the capacity of thermal and hydroelectric power plants.

Many positive things are being done in our country to solve these issues. Solar and wind power plants on the basis of public-private partnership in Samarkand, Navoi, Surkhandarya, Bukhara, Namangan regions of our republic at the expense of foreign partners is being built.

The President's decision to cover 30% of the electricity needs of state-owned enterprises from alternative energy sources was announced, and the issue of covering 25% of the electricity needed for the country's needs by 2030 from alternative energy sources was put forward.

RESEARCH RESULTS

Extracted oil, natural gas, coal and uranium are currently the main sources of energy in the world. If they continue to be used at this rate, the world's extracted oil reserves will last for 45-50 years, natural gas reserves for 70-75 years, hard coal reserves for 165-170 years, and lignite reserves for 450-500 years.

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reaches a year. Renewable energy sources are being used as an alternative to limited hydrocarbon energy resources. Wide involvement of environmentally friendly renewable energy sources in the energy balance is also required from the point of view of reduction of man-made impacts on the environment. In addition, renewable energy sources are an important factor in solving social problems, including providing employment in residential areas. In this regard, many countries of the world have set themselves the goal of increasing the use and application of renewable energy sources obtained from the environmental energy flow. Such energy sources include solar, wind, water resources, geothermal sources, as well as biogas obtained from industrial, agricultural and household waste.

Taking into account the importance of energy for sustainable development, the United Nations General Assembly declared 2012 the International Year of “Sustainable Energy for Al’’. This year provides a good opportunity to raise awareness at the local, national, regional and international levels about the importance of sustainably meeting the need for energy resources, increasing the efficiency of energy use, and expanding access to renewable energy sources. The concept of "green economy" was included as an instrument of sustainable development in the final documents of the Rio+20 International Summit held in Brazil in June of this year. Chairman of the State Committee for Nature Protection of the Republic of Uzbekistan N. Umarov, who led the delegation of Uzbekistan to the Rio 2020 Conference, in his report at the 5th Plenary Meeting, focused on the reduction of energy consumption, the use of renewable energy sources, and the projects of the Clean Development Mechanism. specifically emphasized the issues of implementation of programs of modernization of economic sectors in Uzbekistan.

Uzbekistan is one of the less energy independent countries in the world. In our country, natural gas and oil products form the basis of resources in the production of electricity. The importance of renewable energy sources in saving hydrocarbon resources, ensuring the energy security of the country, as well as (qTEM) people living far from centralized energy sources (electricity, natural gas, hot water), people living in mountains and deserts, people with seasonal work or expeditions Considering its crucial importance in meeting the demands for electricity, heat and drinking water, more importance is being given to the development of this direction. One of the advantages of renewable energy sources is that it reduces the use of hydrocarbon energy sources in the production of electricity and allows them to be saved for use as raw materials in the petrochemical industry.

Renewable energy sources are usually not able to fully supply large enough residential areas, large industrial enterprises and institutions with energy. In our country, especially in ecologically disadvantaged areas, the use of environmentally friendly renewable energy sources has great prospects, and it will bring ecological, social and economic benefits

DISCUSSION

The future of the use of renewable energy sources in the specific climatic conditions of the Republic of Uzbekistan is very bright. This is especially true of solar energy. The total potential of Uzbekistan for solar energy is 50,973 mln. tons of oil equivalent, which is equal to 99.7% of all renewable

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energy sources tested so far in the territory of the republic. Sunny time in the republic reaches 2000 hours in the north and more than 3000 hours in the southern regions. Sunshine is 7-10 hours per day, the total annual radiation varies from 4800 MDj/m2 in the north to 6500 MDj/m2 in the south. One of the types of renewable energy used in the world is wind energy. The gross potential of wind energy in Uzbekistan is 2.2 million t.n.e. rated as According to the geographical position of the territory of Uzbekistan, wind currents have a seasonal character. The average annual wind speed in the plains is 2.0-5.0 m/sec. Many years of research made it possible to identify 8 hydrothermal resource basins on the territory of Uzbekistan. The gross potential of geothermal resources is estimated as 244,200 tons of conditional fuel, and the technical potential is not determined. The largest potential of geothermal waters belongs to Farkhana valley (Namangan region - 42.6 thousand tons of conditional fuel) and Bukhara region - 81.2 thousand tons of conditional fuel.

CONCLUSION

It is very serious, necessary and gratifying that a lot of attention is being paid to the problem in this area.

In the near future, installing solar panels on the roof of buildings is a real issue. As a solution to this, buying solar panels from abroad and assembling them in our country will lead to a slight decrease in costs. In the long run, domestic production of solar panels should be put on the agenda. At present, it is necessary to get acquainted with the top 10 technologies of solar panel production technologies, choose the most convenient one for our country, and immediately start scientific research and design research in this field.

Despite the fact that monocrystalline silicon-based solar panels are the most common, they also have disadvantages such as high cost, fragility of elements, and temperature resistance. Currently, there are several new technologies that are included in the Top 10 technologies that are free of these disadvantages. For example, silicon-based heterojunction solar panels can be produced. However, in this field, no scientific research and design work is carried out in any scientific research institute or higher education institution in our republic.

Another urgent problem not only in our country, but also in the whole world is the issue of saving electricity and heat energy, and there are things that need to be done in this area as well. It is very important to replace the electricity used for lighting with energy-saving and home-made lamps. The application of smart house technologies would be the same if architects focused on designing energy-efficient houses for rural residents and creating technologies for their construction using local raw materials.

If we begin to master and replace the above technologies, we will have the opportunity to achieve great progress in this field and save a large amount of electricity in our country.

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