

ГЕОГРАФИЧЕСКИЕ НАУКИ

PROSPECTS FOR THE USE OF ALTERNATIVE ENERGY IN DESERT AREAS

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ABSTRACT

The article describes the scientific basis for the use of alternative energy in desert areas with a scientific analysis of the geographical distribution and continuity of winds, especially in desert conditions, and the economic significance of its use.

Keywords: alternative energy, wind energy, direction, continuity, scientific analysis of winds

Introduction. Alternative energy IS the generation of power from nontraditional sources as opposed to sources such as coal and oil. The main sources of alternative energy are hydropower, wind, solar, hydrogen, bioenergy, geothermal, and hybrid technology. Currently, the most prodigious source of alternative energy is produced by large-scale hydroelectricity schemes, which account for 16 percent of the world supply of energy. By comparison, the other sources combined generate approximately 4 percent (*From Encyclopedia of Environment and Society*).

The Strategy for the Further Development of the Republic of Uzbekistan for 2017-2021 defines priorities for the development and liberalization of the economy based on the construction and modernization of existing electric power facilities, improvement of low-voltage power lines and transformer points. measures to improve energy supply, as well as increase the use of renewable energy sources Implementation of these measures”, which, in turn, will contribute to the development of non-traditional energy resources, as well as their further development, which will play an important role in meeting the energy needs of the population.

Currently, the use of fossil fuels in all areas of energy consumption is heavily polluted with carbon dioxide (carbon monoxide, sulfur oxide, etc.). As a result, a “greenhouse effect” arises in the atmosphere, causing global warming. To prevent this negative process, the international community is working on a number of measures to address this problem.

Main part of the paper. In resolving this urgent issue, the leadership of the Republic of Uzbekistan reports that serious attention was paid to the issue of Decree No. 4512 of March 1, 2013 “On measures for the further development of alternative energy sources”. The essence and essence of the decree is not only economic, social, political, historical and environmental. In the conservation and efficient use of natural energy resources, renewable alternative energy is of great importance, since these sources are characterized by environmental cleanliness. Alternative sources of energy of the republic include the following sources: solar energy, wind energy, hydropower (medium, small, micro energy), biomass energy. In our research work, we would like to

highlight the wind energy and its features, taking into account the geographical location and natural resources of our republic, as well as the wealth of solar and wind resources.

Wind energy is widely used by Western countries in England, Germany, France, Denmark, Gaulland, the USA and many other countries (windmills) in large industrial and agricultural areas. Winds cause a massive air circulation around the globe, and this process is periodically repeated. Thus, the use of wind energy is an endless resource. Wind changes as a result of changes in pressure due to the intensity of sunlight and changes in different geographical latitudes.

The geographic location of the republic and the relief structure of the air create constant horizontal movements. However, the fact that wind movement is not uniform in all regions does not allow the use of wind energy everywhere. For this reason, the study of wind energy, direction and duration is of scientific practical importance, and maps of the geographical distribution of wind are important.

The uneven distribution of wind in all regions of the country also depends on the features of the relief, as well as on mountain winds that are windy in mountain areas. The use of wind turbines is of great economic importance, and wind generators are two to four times more expensive than traditional generators. Current work on the use of wind energy is to determine wind energy, direction and continuity, create separate wind generators and connect them to existing electrical networks and use them as the main network.

Reducing the cost of energy and resources in production, the widespread introduction of energy-saving technologies, expanding the use of renewable energy sources and increasing labor productivity in sectors of the economy. Improving housing conditions, providing the public with public services by improving their energy supply. Rushing to the right, along with improving the environmental situation in the prison security equipped for the production of alternative energy sources, energy production, its impact on the environment, is affordable and low cost. This, in turn, plays an important role in improving the socio-economic situation of the population and makes it possible to use this energy for the development of entrepreneurship.

A number of research projects on the use of wind energy are carried out in the republic. Scientists of SamSU prof. A.Rakhmatullaev is working on a practical study of wind resources in the Samarkand region and has developed a map, a map of wind distribution patterns by region and developed proposals for its further use. In addition, a number of efforts are being made to use wind energy in the republic. However, this is not a required level. In Europe, more than 20% of all energy produced comes from alternative energy, more than 10-15% of which is wind energy.

The orphanage in the Republic of Uzbekistan is the main facility in the region. Installation of 750 kW/h of Doojin So solar power station. LTD. The tower at an altitude of 40 m by installing on a veteran energy platform and anemometry, as well as on a drug tracker. Wind energy is estimated at 12.3 million. UAH.KWh of electricity in the country, saving about 700,000 m³ of natural gas.

According to the Uzhydromet Institute, the average wind speed in the area where wind power is installed is 4.3 m/s, and in winter - 6.6-7.1 m/s. The indicated wind speeds ensure stable operation of the wind structure. The use of wind energy in our country is increasingly giving positive results. Since wind farms do not occupy a large area, and secondly, pasture farms in pasture lands (Kyzilkum) must collect wind energy in special batteries, since the wind is not always mixed to meet electricity demand.

In general, the use of wind energy, which is future energy, is the key to achieving environmental sustainability while conserving energy. Our study is based on the study of the geographical factors of the region by studying the potential of alternative energy production in the Mirzachul oasis.

The use of alternative energy, especially in desert grazing areas, is of economic and social importance and can satisfy the demand for energy. It is important to use wind and solar energy to provide electricity to livestock farms so that all climate resources are well equipped with wind (more than 3 m/s) and solar radiation to meet livestock needs.

Depending on the type of development of wind turbines, there are two types: vertical and horizontal axis of rotation, depending on the geographical location of their use and meteorological factors. Vertical axis turbines are also economically and environmentally friendly and are characterized by the use of low wind energy for energy production. Turbines with a vertical axis are characterized by a slightly lower power, but can be freely used in animal husbandry, given the low wind speed and power generation. The farm only needs electricity for water pumps and home lighting, and it

has enough electricity to supply it with special energy stored by the wind from vertical axis turbo generators. Their capacity is 1 kVt of electricity, and it is recommended to use special batteries to store electricity.

Dialog LLC produces in the country wind generators with an experimental capacity of 1-3 kVt. In the future, the use of such facilities will play an important role in satisfying the population's demand for electricity, which will reduce the use of firewood and half-open firewood for economic needs, as well as satisfy the energy needs of pastoralists in desert pastures.

Conclusion. The use of alternative energy in the energy supply of pastures is important for improving the country's energy resources and improving the social status of pasture personnel, but also helps to improve pasture water by providing pasture water, phytomelioration and pasture rehabilitation. This opens up great opportunities for achieving environmental sustainability. The use of alternative energy sources to optimize the environment of the regions is of socio-economic and ecological importance, and further development is the main task of the country today, which contributes to food security in the country.

References

1. Nazarov Kh., Nishonov S., Ismoilov Sh., Gulimmatov I. (2016). Issues of generating electricity from wind resources. // Intellectual potential of education, science and industry is an important factor in the development of the country. Republican scientific-practical conference materials. Samarkand. pp.6-9.
2. Nazarov Kh., Yusupova K. (2017). The issues of generating electricity from the wind resources in Jizzakh region. // Science end world. International journal of Science and the World. Volgograd. Pp.134-136.
3. Nazarov Kh., Yusupova K. (2017). Comparative study of fodder plant in dessert condition submontane in semidesert and utilization of amelioration. European science review.pp. 24–26.
4. Nazarov Kh., Eshkuvvatov B., Yusupova K. (2017). Using wind energy resources in Jizzakh region. Newsletter of Samarkand State University.- Samarkand.
5. Jeremy Shere. (2013) .The World-Changing Power of Alternative Energy. St. Martin's publishing Group. <https://books.google.co.uz/books?id=>
6. <https://www.Nationalgeographic.com>
7. <https://search.credoreference.com>
7. www.samstat.uz
8. www.uzbekenergo.uz