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PROSPECTS FOR SOLAR ENERGY DEVELOPMENT IN THE TRANSBAIKAL TERRITORY

Abstract: This article considers the peculiarities of the Transbaikal Territory, as well as advantages and disadvantages of solar energy. Also the relevance and prospects of this direction development in the proposed conditions are considered.

Keywords: Alternative energy, solar energy, photovoltaics, prospects for solar energy development, Transbaikal Territory

Due to global environmental problems and the depletion of natural resources, more and more money is being spent on alternative energy development. In Russia, there is also a problem related to its territorial size. There are many remote regions on the territory of the Russian Federation, where it is difficult to provide centralized power supply.

Transbaikal region is a region of the Far Eastern Federal District, with a sharply continental climate. It has an area of 431,892 km². There are 876 settlements on its territory, of which only 10 are cities. The mining industry is also well developed on the territory of the region, which causes obvious environmental problems. The climatic peculiarities of the Transbaikal region [1] also contribute to the high level of atmospheric air pollution, as the territory of the region is located in the zone of the Siberian anticyclone action, which causes calm or low-wind weather, thus creating unfavorable meteorological conditions for the dispersion of pollutants. This property of the atmosphere leads to the fact that at relatively low specific emissions of pollutants a high level of atmospheric air pollution can be observed. It is in such situations that alternative energy comes in handy. It allows to provide remote regions with energy by creating autonomous energy systems.

There are several main types of alternative energy development:

- Solar energy. Converted to electricity using silicon photovoltaic modules.
- Wind energy. Modern wind farms convert the kinetic energy of the wind into mechanical rotor energy and then into electricity.
- Water energy. To build such a plant, you need to block the riverbed and raise the water level, which will drive turbines that generate current.
- Geothermal energy. This utilizes the heat of the Earth to generate electricity.

One of the most popular and developed areas, is solar energy [2]. At the moment in the world there are solar power plants producing more than 1000 MW of capacity, in Russia this figure is about 140 MW.

The advantages of this method of electricity generation are as follows: it is a sustainable alternative to fossil fuels and has low environmental impact and potential for its production in any country.

The disadvantages are production of energy only during the daytime when the sun shines, needs large areas of land and requirement of rare materials.

The development of this direction is very fast, since the discovery of photovoltaic cells in 1887 to the present moment the efficiency of solar cells has increased to 47% [3]. And in the conditions of the Transbaikal region, where the solar activity rate is very high, the use of solar energy looks like a rational and promising solution [4].



Conclusion: In the conditions of Transbaikal region, the development of solar energy is a promising direction, because there are many needy energy consumers and large areas of unused territory. Also, a large percentage of solar activity in the region, will maximize the profitable use of solar energy.

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