UDK 62

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UTILIZATION OF RENEWABLE ENERGY IN THE TEXTILE INDUSTRY IN UZBEKISTAN

Annotation: The energy consumption of existing technological equipment in textile enterprises can be observed mainly in the electrical drives of their electrical equipment. Manufacturers are looking for opportunities to reduce production costs in a competitive global business environment without compromising product stability and quality. An increase in energy prices for public and private companies increases production costs at the enterprise.

The country is taking comprehensive measures to organize the production of a wide range of quality textiles and garments (hereinafter referred to as textiles), deepen the localization of its production, as well as increase the export potential of local producers. . Over the past period, the necessary legal framework and favorable conditions for the development of the textile and clothing industry (hereinafter referred to as the textile industry) have been created. At the same time, the study identified a number of systemic problems that hinder the sustainable development of the country's textile industry. Prospects for the use of solar energy in Uzbekistan are one of the main directions in the development of renewable energy. Improving the efficiency of small business in various sectors of the economy is one of the important tasks of the development strategy of Uzbekistan.

Keywords: textile plants, turbo fan, fiber drying, solar power, configuration.

ИСПОЛЬЗОВАНИЕ ВОЗОБНОВЛЯЕМОЙ ЭНЕРГИИ В ТЕКСТИЛЬНОЙ ПРОМЫШЛЕННОСТИ УЗБЕКИСТАНА

Аннотация: Энергопотребление существующего технологического оборудования на текстильных предприятиях можно наблюдать в основном в электроприводах их электрооборудования. Производители ищут возможности для снижения производственных затрат в конкурентной глобальной деловой

среде без ущерба для стабильности и качества продукции. Повышение цен на энергоносители для государственных и частных компаний увеличивает производственные затраты на предприятии.

В стране принимаются комплексные меры по организации производства широкого спектра качественных текстильных изделий и швейных изделий (далее - текстиль), углублению локализации его производства, а также увеличению экспортного потенциала местных производителей. За прошедший период созданы необходимые правовые рамки и благоприятные условия для развития текстильной и швейной промышленности (далее текстильная промышленность). В то же время исследование выявило ряд системных проблем, препятствующих устойчивому развитию текстильной промышленности страны. Перспективы использования солнечной энергии в Узбекистане являются одним из основных направлений развития возобновляемой энергетики. Повышение эффективности малого бизнеса в различных секторах экономики - одна из важных задач стратегии развития Узбекистана.

Ключевые слова: текстильные заводы, турбовентилятор, сушка волокна, солнечная энергия, конфигурация.

Introduction

In the textile industry, there are different possibilities of using renewable energy. There are several cases of such use, but the use of renewable energy in the textile industry is not limited to these cases. In accordance with the strategy for the development of the Republic of Uzbekistan in 2017-2021, approved by the resolution of the president of the Republic of Uzbekistan dated February 7, 2017 PD-4947, the country's energy balance has been diversified, the decarburization of electricity and thermal energy production is the priority direction for further optimization of the Republic's energy.

In this regard, there is concern over the possibilities of using renewable energy sources throughout the country and the practical evaluation of their use. The main

components of renewable energy sources in the Republic are solar, solar and wind energy, as well as biomass energy.

Main part

Installation of turbocharged ventilators from the roof with the help of wind. In some areas of the textile factory, the standard temperature and humidity should be maintained, for which compressor systems are used. However, this is not for the whole plant. In many textile factories there are places where there is no need for a compressor system, for example, most of the wet processing plants and places where there is no production. Instead of using ventilators, turbochargers can be installed on the roofs, which turn around with the help of natural wind. The potential implementation of this measure depends on the geographic location of the plant, as well as seasonal changes in wind speed and direction. It installed turbo ventilators on the roofs of several textile factories in India and saved 23 - 91 MW/s of electricity per year. The reported investment value varies from 6100 to 9100 US dollars. Energy savings and costs depend on the number of installed ventilators.

The use of direct solar energy to dry the fibers. In some textile enterprises, wet fibers must pass through the drying process, for example, drying acrylic fibers after the dyeing process. If the plant is located in the area where sunlight falls for several months of the year, there is an opportunity to use direct solar energy to dry the fibers. The textile factory in India built a platform directly under the sun using a chain grid facing the open area. This led to a savings of energy costs of 4200 US dollars per year, an investment of 2700 US dollars. It is worth noting that the implementation of these measures depends on the geographical location of the area where the plant is located and the climatic conditions.

The prospects of using solar energy in Uzbekistan are one of the main directions of developing renewable energy. Increasing the effectiveness of the application of small business in various spheres of the national economy is one of the important tasks of the development strategy of Uzbekistan. Due to the need to save primary energy resources, the design, creation and use of solar photo electrics requires the solution of many research and engineering tasks. the use of photoelectric in more

efficient regions is a very urgent problem, the solution of which allows to improve the engineering and economic characteristics of solar equipment, optimize energy parameters and operating modes, taking into account the changing solar radiation of energy forces.

It is known that the effectiveness of the practical use of solar energy depends largely on the provision of solar radiation, as well as on the exact implementation of pre-planning work, taking into account the regularity and specific data that are taken into account in temperature, atmospheric skiing and wind conditions. speed in the region where the moose photoelectric stations can be built and used.

If measures are taken on the basis of the road map on the most 8008 technical assistance projects produced in cooperation with the Asian Development Bank, the task of generating 6 percent of the country's energy through solar energy by 2030 will be very real; for this, less than 0.1% or an area of Uzbekistan about 88 km2 will be required.

According to long-term terrestrial actinometrical indicators, the intensity of solar radiation in the Fergana Valley varies from 1500 kW / m2 per year to 2100 kW / m2 per year in the North. The minimum and maximum monthly intensity of direct Sine to a normal surface was recorded, for example, in Yanvar for Tashkent (70909 kW / m2 per month) and in July (262 kW / m2 per month). In many regions of Uzbekistan, except for the Fergana Valley, the number of solar hours per year is from 2900 to 3100.

The use of solar energy for water heating in the textile industry. In the case of wet processing of Textiles, low-temperature hot water is in demand, it can be partially obtained using solar energy. Given the feasibility, geographical location and climatic conditions for understanding the possibilities of using solar energy in a textile factory, it is possible to determine whether the use of solar energy for providing low-temperature hot water is economically feasible or not. area. Two configurations can be considered for the use of solar hot water systems in wet processing plants. The first configuration is a pre-solar heating system, which can feed the boiler with hot water. This system can be used effectively at different flow

rate and output temperature. The second configuration is to feed the painting processes that require low-temperature water (up to 85 ° C) directly with hot water produced by the solar system. To determine the Optimal system, two configurations can be economically compared. In the project at the Egyptian textile factory, the optimal design of the two configurations was studied, taking into account the optimal area of the collector and the flow rate. They found that the second configuration (that is, direct feeding of the painting process with low-temperature hot water produced by the solar system) is much more economical and effective. (Abdel-Dayem and Mahammad, 2001). There are other examples of the use of solar energy in the processing of textile products, for example, Muneer in Pakistan and so on. (2006).

Conclusion

Energy in the textile industry is one of the main cost factors. Increasing energy efficiency should be one of the main concerns of textile factories, especially in the period when the energy price fluctuation is high. In textile factories, there are various energy saving options, many of which are cost-effective. In textile factories, economic options are also not used, mainly because of the limitations of data on the implementation of economic austerity measures. In particular, these facilities have limited resources to obtain this information. The know-how on energy efficiency technologies and practices should be prepared and distributed in textile factories.

This article provides information on energy saving technologies and measures used in the textile industry. the article contains examples of textile factories from all over the world, which provide information on energy savings and costs when available. The guide to some measures shows the savings and repayment periods found under different conditions. Always the reader should keep in mind that the values given in this manual are presented as an instruction. The cost of operation and energy savings will be different, it depends on the configuration and size of the plant, the location of the plant, the characteristics of the plant's operation, production and Product Characteristics, local raw materials and energy supply, and many other factors. For example, for some measures to save energy, a large part of the costs are labor costs. Thus, the cost of these measures developed and developing can vary

significantly. Therefore, for all energy-saving measures listed in this manual, individual plants need to conduct additional research on the economy of measures, as well as the application of various measures in specific production practices, in order to assess the expediency of measurements. implementation.

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