PROSPECTIVE ASPECTS OF USING SOLAR ENERGY

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Abstract: This article presents the effective aspects of the use of solar energy by world countries. The use of solar energy leads to greater economic efficiency in the use of fuel energy in the current period.

Keywords: solar energy, alternative energy, heating,efficient building.

At the moment, interest in"sunny houses" is growing every day, and the number of them is growing. Naturally, there are also questions that interest many in this regard. So what device is installed on the roof of such houses? On cold winter days, especially at night and on cloudy days, is the warm temperature in the rooms maintained at one rhythm?

Let's talk about them as widely as possible. It should be noted that the original architectural and constructive solution in "sunny houses" — allows you to maintain heat without additional devices. [1,2] therefore, moderate temperatures are provided in the rooms for a certain time, even on reclusive and cloudy days. A sharp cooling of the air, rain or snowfall cannot negatively affect this.

For solar heating, it is not necessary to install expensive and inconvenient to use equipment on the roof of the building. The fact is that a windowed porch, skillfully designed and built facing south, taking into account the heliotechnical requirements, transforms natural light into 25-35 degrees of heat. As you know, in the winter season, the days are shortened, and the oftob goes out for 8-9 hours. Therefore, in the evening and at night, the room temperature can drop sharply. In"sunny houses", this aspect was taken into account. That is, the moderation of room temperature is ensured. Also, ordinary stones used in construction work have the property of retaining heat.[3,4,5]

The methods that are used in science as passive-solar heating systems were widely used in ancient times by our ancestors. For example, great importance was attached to the direction of the sun at the construction of imurat. Especially in our villages, regardless of the direction of the streets, it is intended to ensure that more sunlight gets into the rooms of the houses. [6,7,8] so far, in many places there is a reason for such sentences as "kungay yard", "kungay House".

Over time, the use of natural light as an energy source became popular and began to go global. This is evidenced by the fact that now there is an extremely increased attention to "sunny houses", in particular, hundreds of thousands of such settlements

have been built in the USA, European countries and other regions, and governments also seriously support this direction.

In addition, a sharp increase in costs associated with the use of fuel in buildings necessitates a repeated consideration of economic issues in architecture. Because earlier the focus was on the costs allocated to the construction. And now the questions of how much fuel is spent on the use of the structure, to what extent its negative impact on the environment will be, are raised, and these aspects are taken into account in the construction work.[9,10,11,12]

The natural climatic conditions of our country are unique, especially the long duration of the off-peak days gives the opportunity to use this invaluable blessing as an alternative source of energy. It is noteworthy that a number of experiments have been carried out in this direction, when positive results are also achieved. In particular, it was found that in a one-story building built from local raw materials in 1994-1997 (the walls are chamfered) and with a passive-solar heating system, 60 percent less heat energy is used than in ordinary houses. [3] in 2007, within the framework of the SOLARON–1 project in Tashkent, a passive-solar heating system was applied to a certain part of a one-story building. As a result, energy consumption decreased by 8-10 times. It turned out that it is also economically profitabl.

By 2008, the first "sunny houses" in energy-saving Uzbekistan were built (in the scheme) in the village of Burchmulla, Tashkent region, meeting the requirements of modern architecture and construction. The project was implemented by local builders, benefiting from inexpensive, easy-to-build materials.

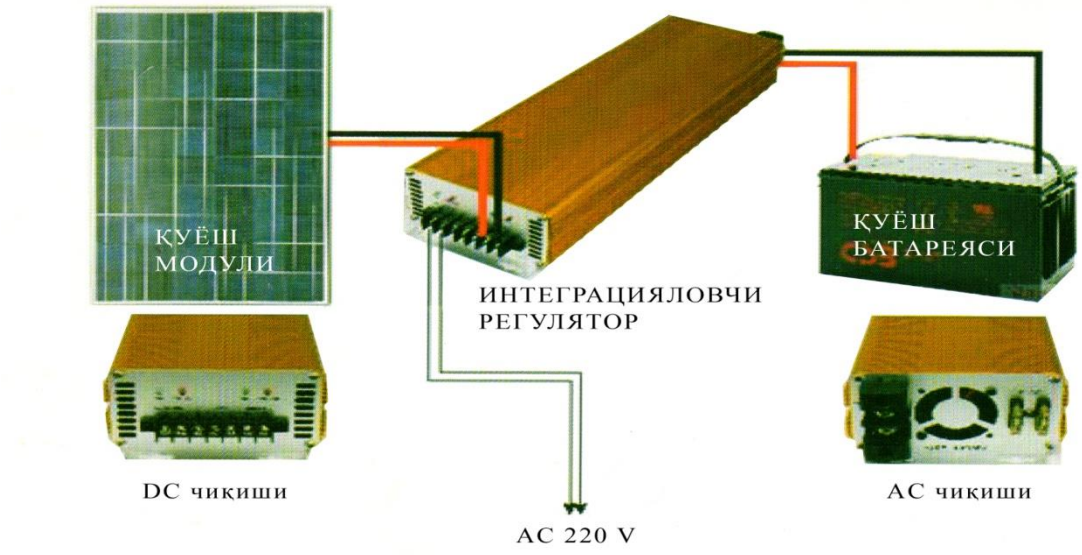

Figure 1. Environmentally friendly solar device scheme

This, the mirrored porch, installed in the house and with a picturesque mountain landscape, began to give the sun's light, turning it into thermal energy.

He also successfully passed the test. For example, until December 2010, the home hapopath did not fall below 20 degrees. On December 2-8, the air cooled sharply, and snow fell from the rain. Outside, at night, the temperature dropped to -10 degrees, and during the day it did not exceed Q3 degrees. From time to time, a strong wind blew. Nevertheless,the temperature of the house is stable — Q19.5 degrees, without the need for additional heating. Visiting French architect Mark Bellanger Burchmulla, an expert at the World Bank, gave a high assessment of "Sunny houses"and said: "this building is the first in Uzbekistan and is a sign that the foundation for an energy-saving system that has no analogues in Central Asia."

In his opinion,this will be the same term in achieving the effectiveness of the residential pill. Also, in the future, enepgia will serve as a cornerstone for the creation of new generations of saving buildings.[14,15,16]

In addition, the construction of such creative complexes suitable for the climate of our country, including spending on passive-solar heating systems, has been covered for 4-5 years and fully justifies itself. Materials are also produced in ourselves. Omnipresent and their use does not cause excessive difficulty.

Figure 2 daily radiation depending on the season of the year and the width of the location

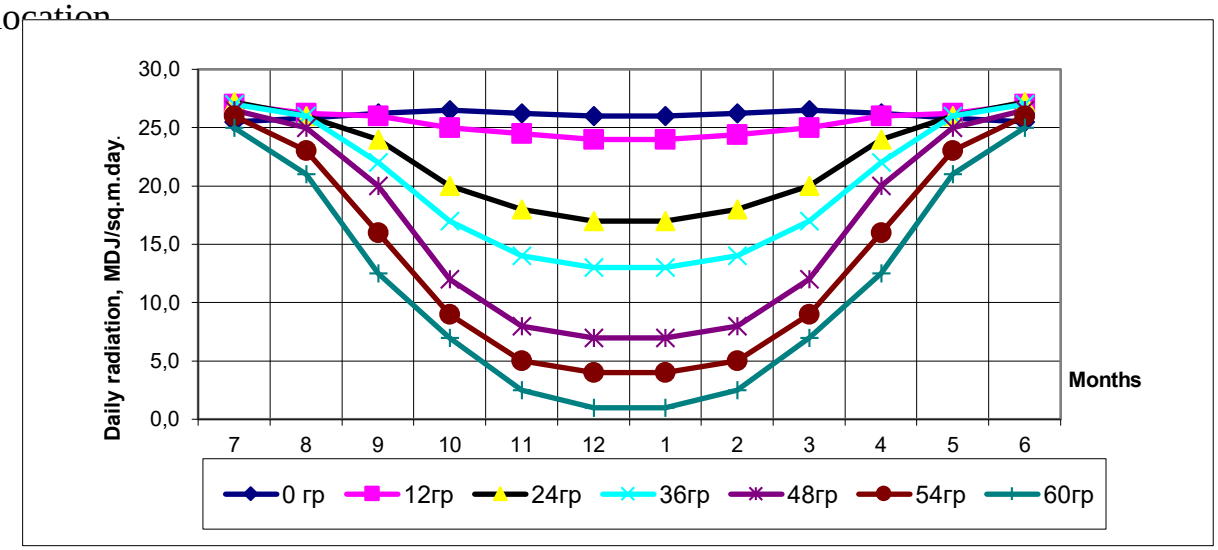

Figure 2. Daily radiation graph

In short, in our country, the possibilities are incomparable for the owners of one-story country houses to feel the comfort of an economical system that converts sunlight into thermal energy in the first place.[17,18,19,20]

The experience of a number of solar-powered countries shows that they have stepped into a significantly coordinated future, including that the strategy for using solar energy has been developed at the state level and targeted government programs have been implemented.

In Japan, as part of the program" 70,000 sunny roofs " (1994), the investment in the use of photoelectric devices in the household will be subsidized. Solar battery manufacturers and its installers are granted a tax credit and subsidy. Also in 2002, strict technical and environmental standards were introduced to renewable energy sources.

In Germany, laws such as "about power supply" (1991), "about renewable energy sources" (2000) were passed, with the obligation to purchase the energy network and utilities from renewable energy sources. The cost of energy to be purchased is set by the government.

In the US, 1 million solar roofs were built in 1997 as part of the initiative. system and solar collectors Installation purpose SET. The federal government does not provide targeted funding, states make their own laws. As part of the Purple program, businesses are required to purchase renewable energy. The purchase price is set by the state governments, slightly above the cost. In addition, according to the 1978 Energy Tax Act, a 10 percent credit tax was applied to investments by solar, wind, and geothermal energy firms. One part of the act provides tax incentives to those who contribute small shares in the purchase of solar energy equipment. For example, if an oil company spends $10,000 on solar energy equipment, the income tax can be reduced by $2,200. A $2,000 tax credit equals 30 percent of total expenses.[21,22,23]

The current capacity of the incident Sunlight is perpendicular to this current and is 150 million above the atmosphere. km is equal to the solar constant located far from the sun G0=1.35 3 kW/m2. This-the so-called solar cosmic radiation.

Solar radiation is associated with a nuclear reaction in the solar core, where the temperature is 10 million. Reaches K.

The solar spectrum consists of 3 parts:

1-ultraviolet radiation – wavelength up to 0.4 microns) - 9 % intensity;

2-visible radiation (0.4 -0.7 microns at Wavelength is 45% intensity;

3-infrared radiation (wavelength greater than 0.7 microns) is 46% intensity.

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