

Measures for the Development of the Use of Solar Energy in the Household and Communal Economy of Uzbekistan

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Abstract: In the last years in the Republic of Uzbekistan, the basic direction of the development of solar energy has been developed. Here, in its future, there is a large-scale method of economic reform in the country. The following note shows that the President and the Government of the Republic pay special attention to the development of solar and wind energy. The steady improvement of the material and cultural standard of living of the population in our country, the rapid and balanced development of our economy create a solid foundation for the gradual improvement of living standards and quality of life.

Keywords: Energy, utilities, solar energy, electricity, price.

Introduction: The consistent improvement of the material and cultural standard of living of the population in our country, the rapid and proportionate development of our economy creates a solid foundation for the consistent improvement of the standard and quality of life of the population. One of the social criteria for such consistent improvement is the provision of centralized heating, water, gas and utilities to cities and other settlements. Because a person's free time health, mood, work activity depends on how the comforts in the living conditions are arranged. Therefore, improving the management of the housing and communal economy system is defined as an important socio-economic task in order to increase the welfare of the people. Effective performance of this task strengthens the rational combination of work and rest of employees, delivery of material goods to consumers, that is, service to the process of demand for material goods.

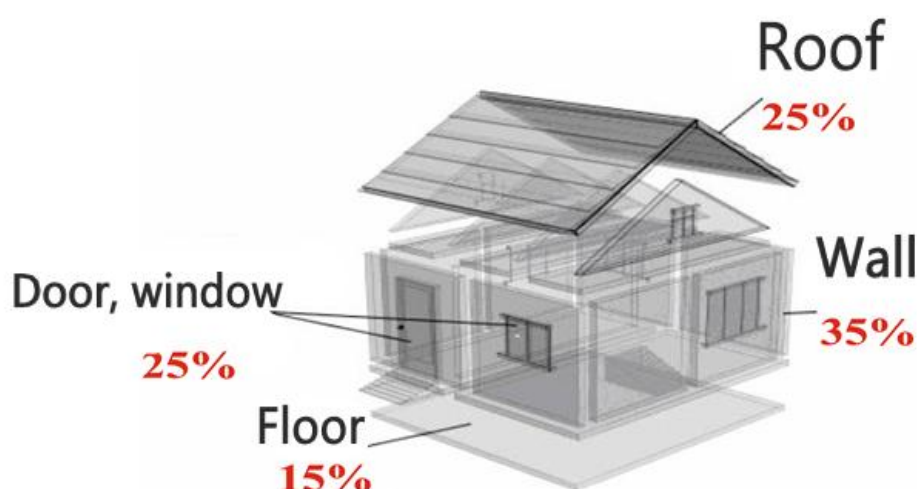
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Main part: A number of problems that arose in the process of reforming the public utility sector and improving the quality of services made it necessary to make drastic changes in the sector and start a new phase of economic reforms. One of the social criteria of such consistent improvement is the provision of centralized heating, water, gas and utilities to regions and other settlements. Therefore, improving the management of the housing and communal economy system is defined as an important socio-economic task in order to increase the welfare of the people. In order to further develop science in the Republic of Uzbekistan, to continue our work on forming a competitive economy, and to raise it to a new, modern

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level, a lot of work is being done in our country. In the world, "green" projects are entering the fields in order to achieve ecological purity and transition to renewable energy systems. Scientists say that the basis of active systems for the use of solar energy is solar cells - a set of modules that receive and convert solar energy. Solar batteries are distinguished by their simple structure, ease of installation, low maintenance and long-term use. It does not require additional space for installation. Such batteries can produce energy not only on sunny days, but also on cloudy days. Modern solar cells retain their ability to work for decades. Such a system, distinguished by its safety, efficiency and long-term operation, is rare.

Solar energy is being used for lighting, heating, air conditioning, ventilation, and electricity generation. In the world, the number of solar power stations - modern stations that convert solar energy into large amounts of electricity - is increasing. ***Solar energy is definitely the energy of the future!*** Today, the world is moving away from conventional fuels due to rising gas and oil prices. All countries have developed state programs for the development of solar energy use.(1,2)



Picture 1. Amount of heat lost from buildings in %

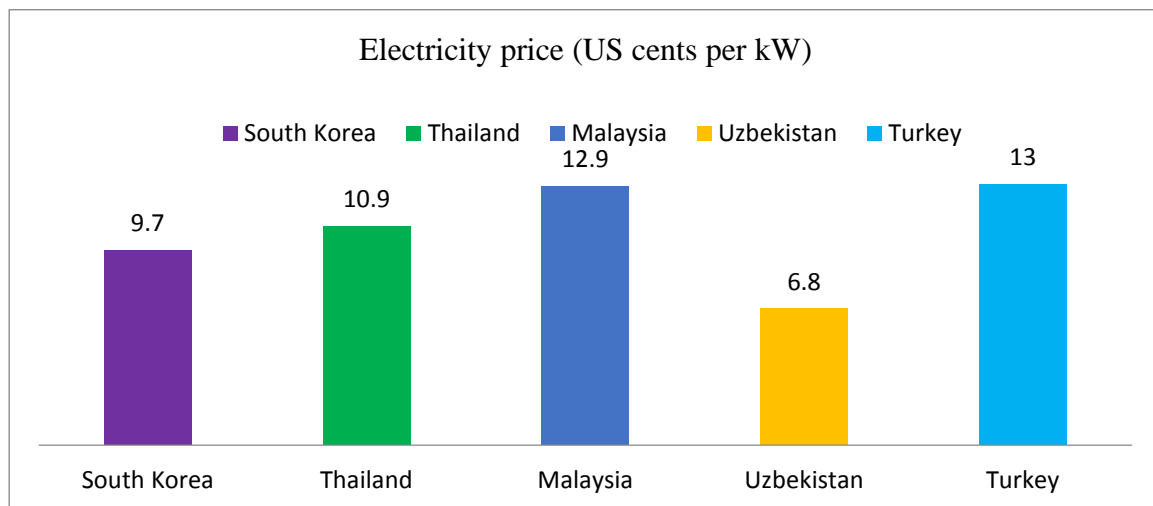
Today, the supply of energy to mankind is at different levels in different countries.

Table 1. level of energy supply in countries

Countries	Energy supply in KW/person-year
USA	18170
Germany	11420
France	10661
England	9761
Japan	12944
Australia	9163
Mexico	2364
Brazil	2643

Argentina	2601
South Korea	3775
Costa-Rica	2251
China	12546
India	11336
Pakistan	1358
Ethiopia	128
Kenya	1134
Zambia	1744
Ruanda	1227

It can be seen in Table 1 that the United States has the highest level of electricity supply and consumes 18,170 kW of energy per person per year, followed by Japan with 12,944 kW, India with 11,336 kW, China with 12,546 kW, etc. Among the countries that consume the least electricity are Ethiopia 128 kW, Kenya 1134 kW, Rwanda 1227 kW. This indicator increases every year, as the number of people increases from year to year, the demand for electricity also increases. Today, Central Asian energy is the most developed. Uzbekistan is a country that has achieved energy independence, Tashkent IES, Angren IES, Navoi IES, Syrdaryo IES are operating in the republic. The level of energy supply of Uzbekistan is high. These stations are much more environmentally friendly due to their operation on gas fuel. [3,4] In the Republic of Uzbekistan, connecting to the electricity supply system and providing the population with electricity is a complex process. The price of electricity in Uzbekistan is low (\$ 6.8 US cents per kW), but the process of connecting to the electricity supply system is very expensive and takes a lot of time. Despite this, the Republic of Uzbekistan has risen from 112 to 27th place in the "Connection to the Energy Supply System" indicator within a year, surpassing countries such as Turkey, Kazakhstan and Georgia. Electricity price, US cents per kW Picture 2.



Picture 2. Electricity prices, US cents per kW for 2022

The price of electric power is 9.7 cents in South Korea, 10.9 cents in Taiwan, 12.9 cents in Malaysia, 6.8 cents in Uzbekistan, and 13 cents in Turkey. During the year, the price of electricity increased by 0.8 cents, but it remains low in Uzbekistan compared to other countries.[2,3]

After the investment, it is planned to build a new power station based on solar energy in Samarkand region in 2023. It, in turn, stimulates the development of all spheres of life economy and reduces the cost of electricity production by 40-48%. **Today, in the field of electricity**, it is important to regulate the consumption of heat energy by residential buildings. Using the German experience, it is also necessary to create a legislative and regulatory framework for energy saving by developing criteria that encourage the adoption of energy saving and building energy efficiency measures. It is 6% in Samarkand region. Solar energy is used for building lighting, heating, air cooling, ventilation, and electricity generation. In the world, the number of solar power stations - modern stations that convert solar energy into large amounts of electricity - is increasing.

On the basis of the energy that is currently sufficient and based on traditional energy types, the efficient use of energy and the achievement of a high level of the quality of life indicator depend on the management system. Today, this management system determines the goals and tasks of the open joint-stock company "Samarkand Regional Electric Networks". The society performs the following types of activities and services to achieve its goals:- is to distribute electricity to consumers and receive profit (income) at the expense of selling them at the rates approved by the Ministry of Finance of the Republic of Uzbekistan and "UZBEKENERGO" JSC;

- ✓ gives power supply enterprises the right to conclude power supply contracts with consumers in accordance with the established procedure;
- ✓ sells electricity to consumers based on the electricity supply contract and ensures security of electricity supply to consumers, etc.

Conclusion

In 2023, a new power station based on kuyosh energy is planned to be built in Samarkand region. It, in turn, stimulates the development of all spheres of life economy and reduces the cost of electricity production by 40-48%. Solar energy is definitely the energy of the future! The introduction of 5G data transmission technologies is a must, it is the basis for building a "Smart City" in the digital economy. According to our forecast, the municipal service sector of Samarkand will fully meet world standards in 2030.

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