

DEVELOPMENT OF GREEN ENERGY IN UZBEKISTAN

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Abstract: Green energy means ensuring a sustainable future. Green energy is energy obtained from natural resources. This energy is regenerated over a period of time and has a minimal negative impact on the environment. No harmful gases are released into the environment when electricity is produced through devices of green energy sources. Green energy sources include a variety of sources and each has its own advantages and disadvantages. But they all contribute to a sustainable energy future.

Keywords : *Solar energy, wind energy, hydropower, geothermal energy and bioenergy, mechanical energy, electric energy, generators.*

In the countries of the world, the development of industry, population growth, rapid economic growth are causing the need and demand for energy resources to increase. According to the data, thermal and hydroelectric power stations still occupy a significant place in the production of electricity.

We know very well that thermal power plants work by burning coal, gas or fuel oil, releasing carbon dioxide into nature. In 2022, 35.4% of global energy was produced by burning coal. In this regard, natural gas is in second place, and 22.7 percent of the world's electricity was produced through "blue fuel".

Hydropower plants accounted for 14.9% of global electricity, nuclear power plants for 9.2%, wind power plants for 7.2%, and solar power plants for 4.5%. Electricity produced by liquid fuel made up 2.5% of the total, while the contribution of electricity obtained by other methods was equal to 2.7%.

It should also be noted that in 2022, renewable sources such as wind, solar and geothermal accounted for 14.4% of total electricity generation.

From these statistical data, it can be seen that today humanity is faced with important global issues such as environmental protection, effective use of natural resources, ecological preservation, and delivery of a clean natural environment to the next generation.

The solution to these global problems is largely the use of non-traditional, renewable, environmentally friendly energy sources.

For example, the amount of energy of radiation coming from the sun to our planet m^2 is on average 1.3-1.4 kW/. If we do not take into account the amount of radiation returning from the atmosphere to space, on average 1 kW/ m^2 of energy falls on the surface of the earth.

Therefore, it is natural that in Uzbekistan, where there are more than 300 sunny days in a year, obtaining electricity from solar rays and introducing photoelectric plants will become one of the promising areas.

In order to further accelerate the work being carried out in this regard, according to **the decision of the President of the Republic of Uzbekistan No. 57 of February 16, 2023**, renewable energy will be installed in social sphere objects, state agencies, business entities, residential buildings, newly built multi-storey buildings in 2023. introduction of devices was determined and a number of practical works were carried out.

As a result, according to the data included in the "Green Energy" information system, today (as of October 27, 2023) 8,960 objects of the social sphere and government agencies have 176 MW, 11,879 buildings and structures of entrepreneurs have 135 MW, and 35,669 households. 70 MW per apartment, and 4.4 MW solar panels were installed on the roofs of 341 multi-storey buildings commissioned in 2023.

During the past year, 3 million kilowatt-hours of electricity were produced by solar photoelectric power plants and transferred to power plants for their own needs and household needs. Acknowledgment of receipt.

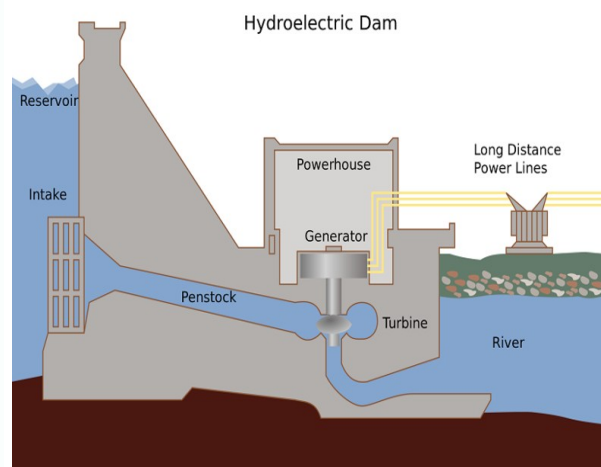
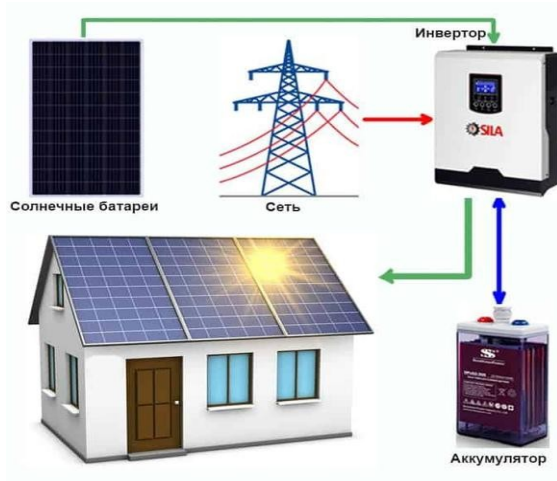
According to experts' calculations, solar power plants can produce a total of 600 billion kilowatt-hours of electricity in Uzbekistan. This is eight times more than the country's current electricity needs.

There is a shortage of electricity all over the world and the demand is constantly increasing, it is necessary to make effective use of the huge natural opportunity and scientific potential in Uzbekistan. Because in a time when natural reserves are decreasing and demand is increasing geometrically, "green energy" is economic development. is becoming our main support.

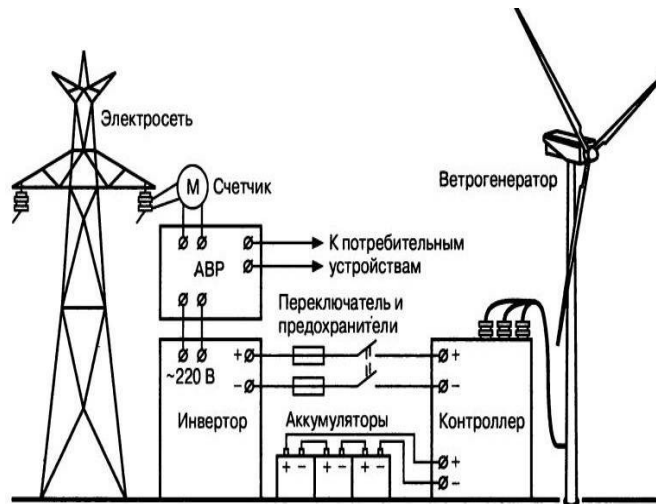
Green energy, also known as clean energy or renewable energy, refers to energy sources that are derived from natural resources, replenish naturally on human timescales, and have minimal environmental impact. These sources include:

Solar energy : Solar panels convert sunlight into electricity using the photovoltaic effect.

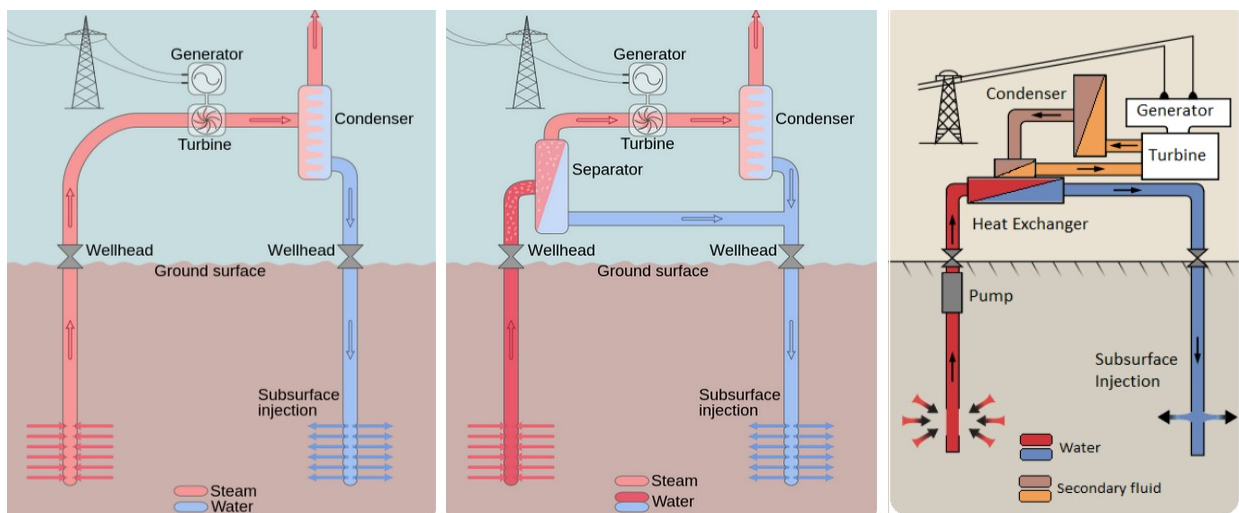
Hydropower: Hydropower uses the movement of water in rivers or dams to generate electricity.



Wind Energy : Wind turbines use the force of moving air to generate electricity.



Geothermal Thermal Energy: Geothermal energy is derived from heat stored beneath the Earth's surface and can be used to generate electricity or heat buildings.



Biomass: Bioenergy is derived from organic matter such as plants, wood, and animal waste. Biomass Power Plant Green energy is becoming increasingly important as we strive to reduce our dependence on fossil fuels and mitigate climate change. It offers a number of advantages, including: Reduced Greenhouse Gas Emissions: Green energy sources produce virtually no greenhouse gases that contribute to climate change.

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