

The heat pump is the near future.

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Annotation: Energy saving is considered today one of the most relevant areas of development of the Republic of Uzbekistan. To date, there are widely known ways to save energy, in which low-potential heat is used as a heat source. The main element of such systems are heat pumping units (TNUS)

Keywords: energy efficiency, heat pump, low-potential heat energy source.

Today, many leading experts in the field of renewable energy sources are wondering whether we need alternative energy, which will take a leading place in the world in the renewable energy system. The question is far from idle, given the huge desire of all economically leading countries of the world to turn towards the transition to alternative energy sources. All except the Republic of Uzbekistan.

Our country is sitting on a gas pipe, earns on oil, coal, and these funds, apparently, are quite enough to satisfy the Uzbek economy. That is, we are making plans to introduce alternative energy sources, although a number of circumstances force us, nevertheless, to look for new ways to extract harmless, economically profitable energy sources: the earth's fossil reserves are not infinite, the climate surprises with its strangeness due, as world science claims, to the excessive use of coal and oil. There is a way out – alternative energy sources that surround us in water, air and underground (geothermal energy).

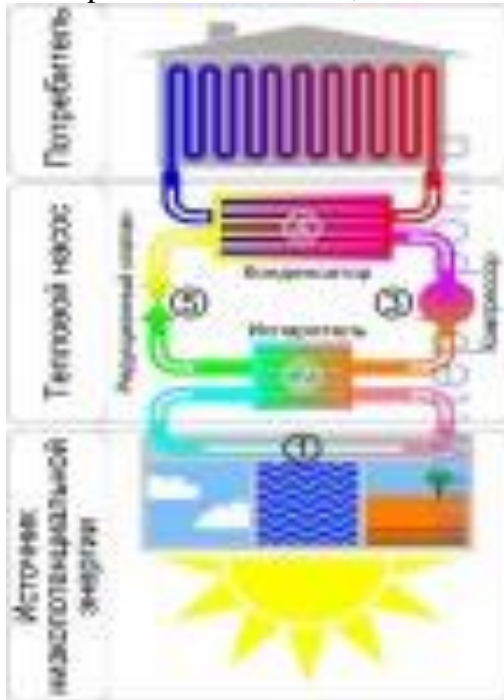
Of all the types of renewable energy sources known to us, the most relevant, in terms of continuity of work, is geothermal energy. Simply put, a heat pump. Firstly, the heat pump is equipped with an automatic control system. The heat pump system can work with any heating structure. Secondly, the electricity consumed in 1 kW/hour produces energy 4-5 times greater than the consumed one. That is, the cost of electricity goes only for the operation of the compressor. Thirdly, the system works automatically, giving out heat constantly.

What you need to purchase in order to install the heat pump system yourself. It's simple. Here is its principle of operation (see photo 1, you can click to enlarge).

The whole process runs in a closed loop. The coolant passes through tubes placed underground at a depth of 1.5-2 meters, enters the heat exchanger (evaporator), transfers heat to the internal circuit of the pump, which is filled with liquid freon (refrigerant). It boils because it has a very low boiling point, turns into a gaseous state, enters the compressor, compresses, as a result of which its temperature jumps to 60 degrees and above. The gas goes to the condenser, where it heats the water in the heating system of the house. It cools down, becomes a liquid again. The cycle repeats.

Efficiency of application of geothermal energy sources. The supply of urban apartments, country houses, cottages with geothermal heat pumps already during the construction of new houses

is the time of the near future. In order to introduce renewable energy sources into the construction of the Republic of Uzbekistan, it is necessary to draw up a document in which builders will be instructed to include the installation of a heat pump in the project of the future house.



Take Sweden, a cold northern country, and geothermal heat pumps operate in half of houses and buildings. In Stockholm, 12% of the premises are heated by geothermal heat pumps. According to government decrees in America, during the construction of buildings, it is necessary to initially equip them with geothermal heat pumps. Without them, the commissioning of buildings is not allowed. Every year, millions of heat pumps are produced in the USA for these purposes. We are just thinking about adopting such rules, but in America they have been doing it for a long time.

The German government grants subsidies to organizations that install heat pumps, which encourages their production and operation. Even such a small country Switzerland has used 60,000 geothermal heat pumps. All the facts show that the world is steadily moving towards the use of alternative energy sources. This is especially evident in the examples of the introduction of heat pumps.

Such a system requires 1 kW of electricity, as already mentioned here, but it gives out 4-5 kW of heat and it does not care about price hikes for gas, coal, fuel oil. The geothermal heat pump reliably performs the function of an air conditioner in summer and a heater in winter.

In conclusion, I would like to say that houses should be built immediately with the installation of alternative energy sources. The most suitable for this is a heat pump that works continuously, all year round, in automatic mode.

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