СЕКЦІЯ
ЗАХИСТ НАВКОЛИШНЬОГО СЕРЕДОВИЩА;
ПРОБЛЕМИ ТАТЕХНОЛОГІЇ

CLEAN ENERGY SOURCES

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Energy is the most needed resource in the world.Without it, almost all modern appliances stop working. Fortunately, we generate enough energy to power the whole world. But most of the ways to extract energy pollute the environment. There are also environmentally friendly sources of energy, such as solar energy; wind energy; water energy and geothermal energy.These energy sources are the cleanest in the world and almost do not pollute the environment.

The sun is an almost inexhaustible source of energy that is available to us on an almost unlimited scale - pure and free energy.Sun radiates 960 billion kilowatt-hours to Earth every day. This amount of energy could theoretically satisfy the world's energy needs for 180 years. Electricity itself is produced using solar panels.The main advantages of solar energy are:

-sun is inexhaustible source of energy;
-solar energy is free;
-no problem with CO2 emission;
-can be integrated into existing installations

Using just 1 kg of silicon,it can get as much energy as a thermal power plant with 75 tons of oil produced [1]. The amount of electricity consumed is much less than the amount generated by the panels, so their payback in some cases occurs within a year.The disadvantages of solar energy are the following:

-there is no way to get energy at night;
-great cost;
-need a big place to extract a lot of energy

Wind mass flows can be successfully converted into any energy: mechanical, thermal, electrical, using it in various industries.Wind energy is converted by means of wind generators - installations with vertical / horizontal axis, equipped with two, three or more blades, on which it is mounted. One such design with a capacity of 1 MW allows saving about 30 thousand tons of coal, about 12.5 thousand tons of oil over 20 years of operation.There are certain advantages this type of energy,namely:

-use of safe raw materials - natural wind masses;
-relatively fast payback when used on an industrial scale - 1-2 years;
-no harmful emissions

Wind farms produce 25-30 times more energy in the same period of time than they consume in the same period.But there can be mentioned a number of disadvantages:

-volatility of produced resources due to the variability of wind strength;
-need to provide infrastructure for the transmission of the received electricity to the consumer due to the remoteness of windmills;

-use of expensive equipment (battery, inverter) when using small wind farms at home;

-significant noise interference

The most powerful kind of energy is considered to be geothermal energy.Its is a type of renewable energy based on the use of heat that exists in the bowels of our planet. That is, to use the heat of the inner layers of the Earth and generate energy with it [2]. This is precisely the disadvantage, because the places where geothermal stations can be installed and limited. And the geothermal power plants themselves are installed near sources of hot water.This type of energy certainly has both advantages and disadvantages.

Most countries are already striving to completely switch to clean energy sources in order to reduce harm to the world around us. After all, in the end, our descendants will live in it, so they strive to preserve it in the best possible way.

References

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HISTORY OF UNCONVENTIONAL ENERGY SOURCES

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Good day, dear colleagues and teachers! I hope, that you are fine today and you are glad to listen to my report. Let me introduce myself. My name is Natalie, I`m second year student at National Technical University "Kharkiv Polytechnic Institute". I am studying non-traditional energy sources and high voltage electrophysics. The second part is difficult for me even talking about it in Ukrainian. So, as you can see on the screen, our topic today is history of untraditional energy sources. Many people know and use them, but few know how it all began. I chose the two most popular and famous sun and wind to tell about them. If you have any questions, feel free to interrupt me at any time.

First of all, I'd like to give you an overview of solar energy. Besides heating the palace with heated water; many examples of useful applications of this power were used to. For example, Archimedes used a system of "incendiary" mirrors, which burned the entire enemy fleet at Syracuse.

Solar energy began to develop rapidly in the 18th century. Then in France, insolation was used to quickly light a large fire. Let me explain more about insolation. This is concave mirrors focused reflected sun rays at a single point. This allows you to collect the energy of the sun.

The first water heater appeared around the same time in Sweden: water placed inside a wooden box with a glass lid was heated by the sun to 88 degrees.