

Anna Neshchadymenko
D.S. Malashkevych, research supervisor
V.V. Gubkina., language adviser
National Mining University, Dnipro, Ukraine

Comparative Analysis of Alternative Sources of Energy

In the 21st century, people cannot imagine their life without energy. Almost all of us use such organic fuels as coal, oil, and gas every day. We are accustomed to such modern conveniences as electricity, the Internet, cold and warm water at home and all other facilities. But organic reserves are commonly known to be limited. That is why the issue of searching new alternative energy sources is becoming more urgent and attracting more attention. Moreover, the deficit of fossil fuels facing a world community now is the most important reason to develop new and effective approaches for creating new types of energy. A list of different alternative sources have already been used is rather extended and commonly applicable. Such types as the wind, solar, water, geothermal energy, and biofuel should be mentioned.

A great majority of these resources are considered to be quite profitable and, as a rule, can be called as friendly environmental. One of the most popular sources is wind power using airflow to create mechanical power by means of wind turbines. But this technology requires not only high investment costs but it produces a lot of noise, depends on the wind strength and is dangerous for such living organisms as birds.

The next alternative approach is solar energy based on using solar radiation to obtain the energy in any form. However, it involves high production costs for energy storage, usage of rare and expensive components and creates environment pollution

The energy of water created due to special turbines by rivers, lakes, seas, oceans or being accumulated in reservoirs to generate the energy, is in common practice as well. But its implementation results in attracting high investment costs, and significant areas of land are subject to flooding to create water reservoirs, and besides, the water energy resource is greatly dependable on natural conditions.

The geothermal energy is characterized by accumulating energy based on the production of thermal and electric energy due to the energy contained in the bowels of the earth, at geothermal stations. However, it is very important to find a suitable place for the building of the geothermal station, and through the production well toxic gasses or minerals can be released.

Biofuel is another alternative source of energy. This type of fuel is obtained from vegetable or animal raw materials in the form of products of the organism's vital activity or organic industrial wastes. But, unfortunately, there are also some problems with this alternative source as areas of animal habitation are decreasing, existed micro-ecosystems are destroyed and problems associated with growing monoculture are arisen.

But despite all above-mentioned limitations, these sources of energy are under great consideration now and the extension of their usage is hopefully predictable.