

USING RENEWABLE ENERGY SOURCES IN UKRAINE

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At this moment, humanity is already in a state where they understand the importance and value of ecology, and that is why we are already seeing steps in the direction of nature conservation. An example of this is that we are gradually switching to renewable energy sources. For example, sun, wind, water movement, biomaterials from which many substitutes for petroleum products are made.

Not so long ago, Ukraine also began to take steps in the direction of environmental protection. For example, of these steps is the "Green Tariff" which motivates people to save environment and use solar panels. Not only does a person

who participates in the "Green Tariff" project save the environment, he also saves money, and in cases when solar panels produce more energy than they consume, they can sell it to the electricity grid for a certain price, in the period of the largest amount solar radiation, the power of such installations will be the highest. (Knush, 2021, p.11)

Hydropower is also a renewable energy source, but it still causes some damage to the environment. An example of this is the fact that due to hydroelectric power stations, riverbeds change, which has a great impact on animals living in areas not far from these stations. Hydropower has quite high hopes and the reason for this is that they are quite powerful and can be improved, which will lead to an increase in the benefit relative to the harm it causes. Among the sources of renewable energy, it is hydropower that has the greatest efficiency. (Yatsyk, 2018, p.1-3)

The mini-hydroelectric station is also part of the "Green Tariff" project, its essence is to create an electric current by making a power station in the channels of small rivers. To generate current at such "stations" the energy of the stream flow is used. Such stations are not powerful enough, and due to capricious conditions and difficulties in implementation, this format is not quite popular, but it can satisfy the needs of a small user. (Gopchak, 2019, p.477-490)

Wind energy is also one of the sources of renewable energy. At the moment, wind energy is developing at an incredible pace, and its efficiency is approximately equal to the efficiency of modern coal power stations, which is an incredible indicator for sources of eco energy in principle. Wind energy in Ukraine has huge prospects, the total capacity of which, according to scientists' calculations, can be achieved by building wind power stations in the south of the country exceeds 5,000 GW, which is a third of what our country currently consumes. Another advantage is that wind energy does not harm the environment. Wind power stations can harm the environment only at the construction stage, damaging the land surface, thereby affecting the biodiversity of these soils. (Gopchak, 2019, p.408-415)

In general, there are two types of wind generators, the first in which the blades of the generator rotate horizontally and the second in which the blades rotate

vertically. Generators with a horizontal axis of rotation are more common, the reason for this is that they have the highest efficiency and operate at a large number of revolutions. Generators with a vertical axis of rotation are less common and the reason for this is that they operate at a lower number of revolutions than with a horizontal axis of rotation. (Gopchak, 2019, p.431-440)

A wind turbine usually uses either 3 blades to spin with the wind flow or a large number, but generators with a large number of blades are usually used in less windy locations, 3 blade generators are the opposite. (Gopchak, 2019, p.436)

Nowadays, renewable energy sources are rapidly developing, gradually replacing traditional energy sources such as power stations, which use energy from burning coal, coke, peat and other energy sources for energy conversion, which cause enormous damage to our environment, ecosystem and nature in general. In my opinion, in the future, people will be able to achieve indicators where more than half of electricity will be produced precisely with the help of renewable energy sources in order to preserve the environment. An example of such intentions is that the European Union plans to produce half of its electricity by 2050 with the help of renewable energy sources, which is quite a good sign for our descendants. (Yatsyk, 2018, p.2)

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