Submitted by

 Submitted to

 Assignment

 Date

Wind energy pros and cons

Wind has been one of the most energy-intensive sources of energy for the production of electricity in recent years, and the interest in wind energy is growing, due to the fact that the oil, as well, has become more expensive and expensive. There are various ways to exploit the wind, and wind turbines are one way, as well as the wind itself to utilize the wind for energy production. The design of a single wind turbine is very simple. In short, it can be said that the wind is able to measure the wind, some of which are installed to one generator, which produces electricity.

Advantages

The windmill occupies a point position and does not require any territory for functioning complete safety for the environment. The wind generator only receives energy without giving anything in return, therefore it cannot make any changes to the ecology. no need for any fuel; all system operation is completely autonomous. High maintainability of wind turbines, especially in comparison with hydroelectric power stations. energy costs are stable and predictable. minimal energy loss during transmission, the ability to install wind turbines near consumers.

Disadvantages

Environmentalists make many claims to wind energy. These are noise, infrasound vibrations and vibrations created by the operation of the blades, which negatively affect people, equipment and animals. Windmills do not just violate the usual, cute-looking landscapes, huge rotating blades affect the human psyche. In the area of wind farms animals and birds cease to settle. There are risks associated with the separation of the blades and other accidents at large wind farms. In addition, when many wind generators operate over large areas, a local decrease in strength and a change in the configuration of the winds are possible. An additional problem is the need to dispose of blades that have exhausted their resources.

Constant noise and whistling appears in the settlements closest to the installation site of the wind farm - this is one of the most common myths about wind energy. In fact, wind farms do not make much noise - the sound pollution produced by the blades and wind turbine equipment is much lower than that which a person is exposed to in urban conditions. As for the development of large-scale wind energy, it is hindered primarily due to the high metal intensity, the complexity of wind turbine designs, the need for large areas, low productivity and insufficient stability. In addition, such incentives for the development of wind energy as the depletion of hydrocarbon reserves and anthropogenic climate warming may be at risk. There is a lot of evidence that hydrocarbon reserves are large, and the role of humans in global climate change, and indeed climate change itself, are controversial issues.

How it works ?

According to experts, in Europe over the next 10 years, the amount of wind energy generated will increase by 140 GW. Wind, as an inexhaustible source of clean energy, is increasingly used. However, along with the indisputable advantages, wind energy has its drawbacks (Snyder, Brian, and Mark 1567). According to some studies, the deployment of wind energy to at least 33 percent of the current level of global power generation will lead to worse consequences for the climate than doubling the carbon dioxide content in the atmosphere (Blanco1372). Meanwhile, according to modern scientific ideas, doubling the carbon dioxide content in the atmosphere will inevitably cause truly catastrophic climate changes and the mass extinction of species.

Amount of energy production

 Wind farms are clearly lagging behind nuclear power plants and hydroelectric power plants in terms of installed capacity utilization. If for nuclear power plants it is 84%, for hydroelectric power stations - 42%, then for wind farms - only 20%, which is due to the nature of the energy source itself: the wind does not always blow with sufficient force (Boyle456) . That is, wind farms are 2–4 times less productive than traditional types of power plants, and to get the same amount of electricity, they need to be built 2–4 times more. These are additional areas and materials, which means greater environmental damage (whatever it may be) in terms of kilowatt of electricity generated (Stehly, Tyler J., et al..27)

All forms of energy production have an impact on the environment, on people and animals living near power plants. But the influence of wind energy is one of the lowest of the existing ones. Some of the fears described above contain some truth, but wind energy is a young technology that is developing rapidly and is constantly becoming more efficient and safer.

Works cited

Blanco, María Isabel. "The economics of wind energy." Renewable and sustainable energy

reviews 13.6-7 (2009): 1372-1382.

Boyle, Godfrey. "Renewable energy." Renewable Energy, by Edited by Godfrey Boyle, pp. 456.

Oxford University Press, May 2004. ISBN-10: 0199261784. ISBN-13: 9780199261789 (2004): 456.

Stehly, Tyler J., et al. 2017 Cost of Wind Energy Review. No. NREL/TP-6A20-72167. National

Renewable Energy Lab.(NREL), Golden, CO (United States), 2018.27

Snyder, Brian, and Mark J. Kaiser. "Ecological and economic cost-benefit analysis of offshore

wind energy." Renewable Energy 34.6 (2009): 1567-1578.