



Satpayev University

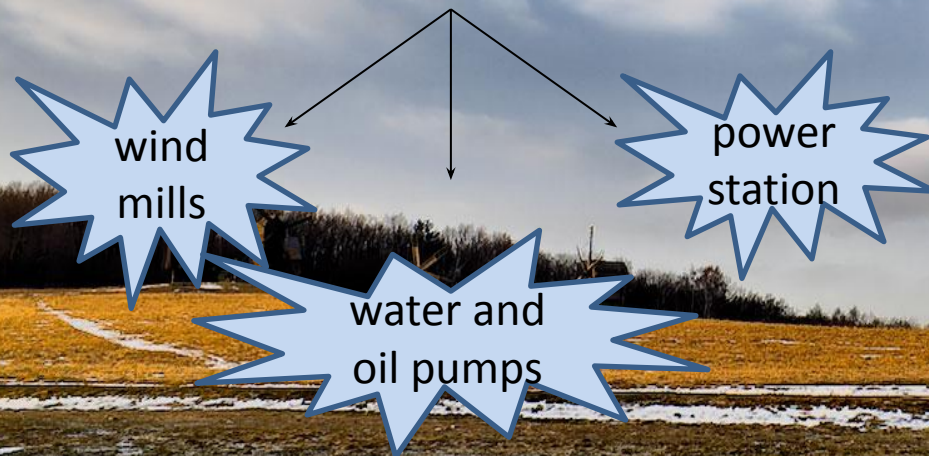
Wind energy

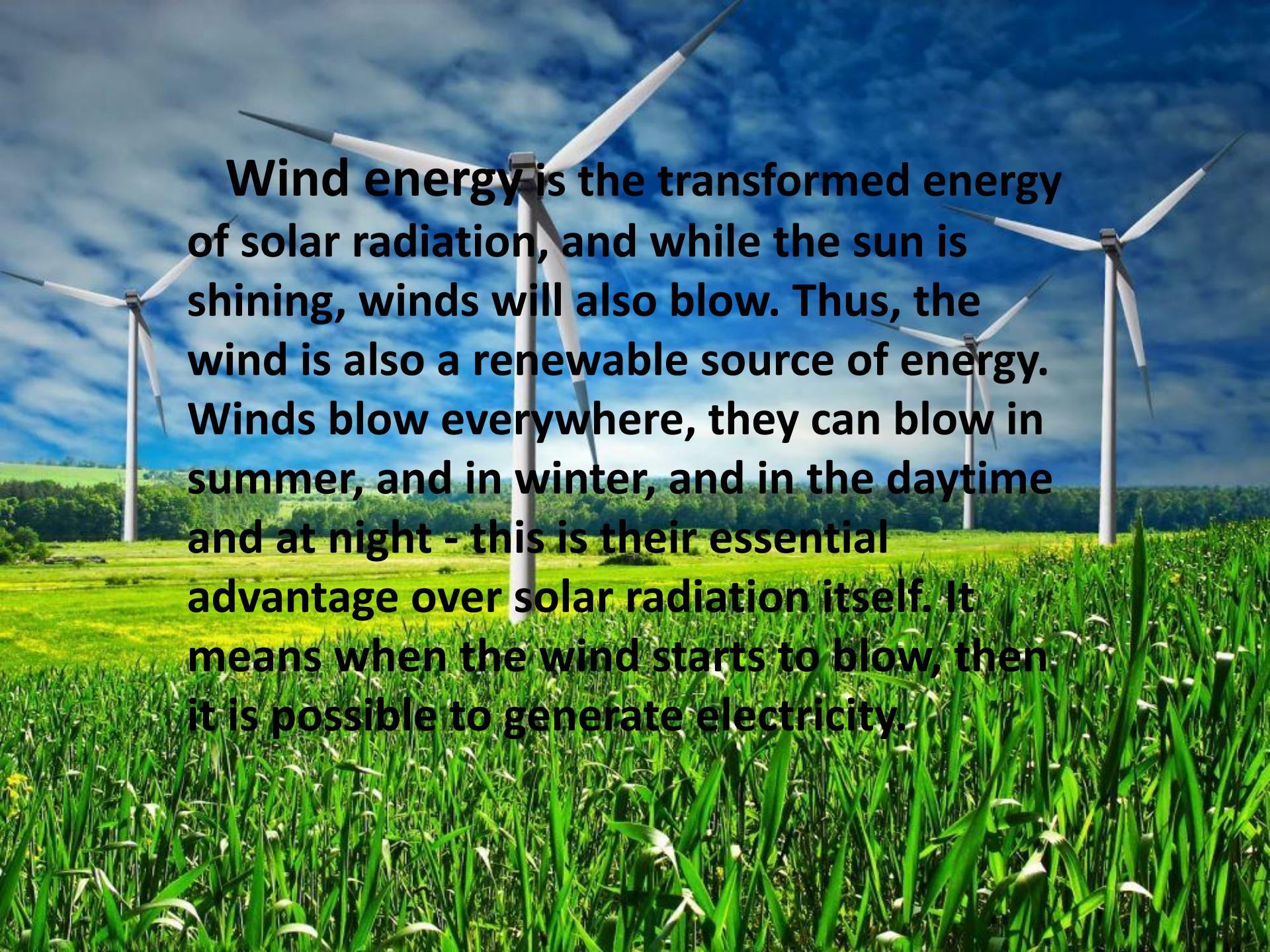
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Wind energy on earth is inexhaustible. For many centuries person has been trying to turn wind energy into his own favor, building wind farms that perform various functions:

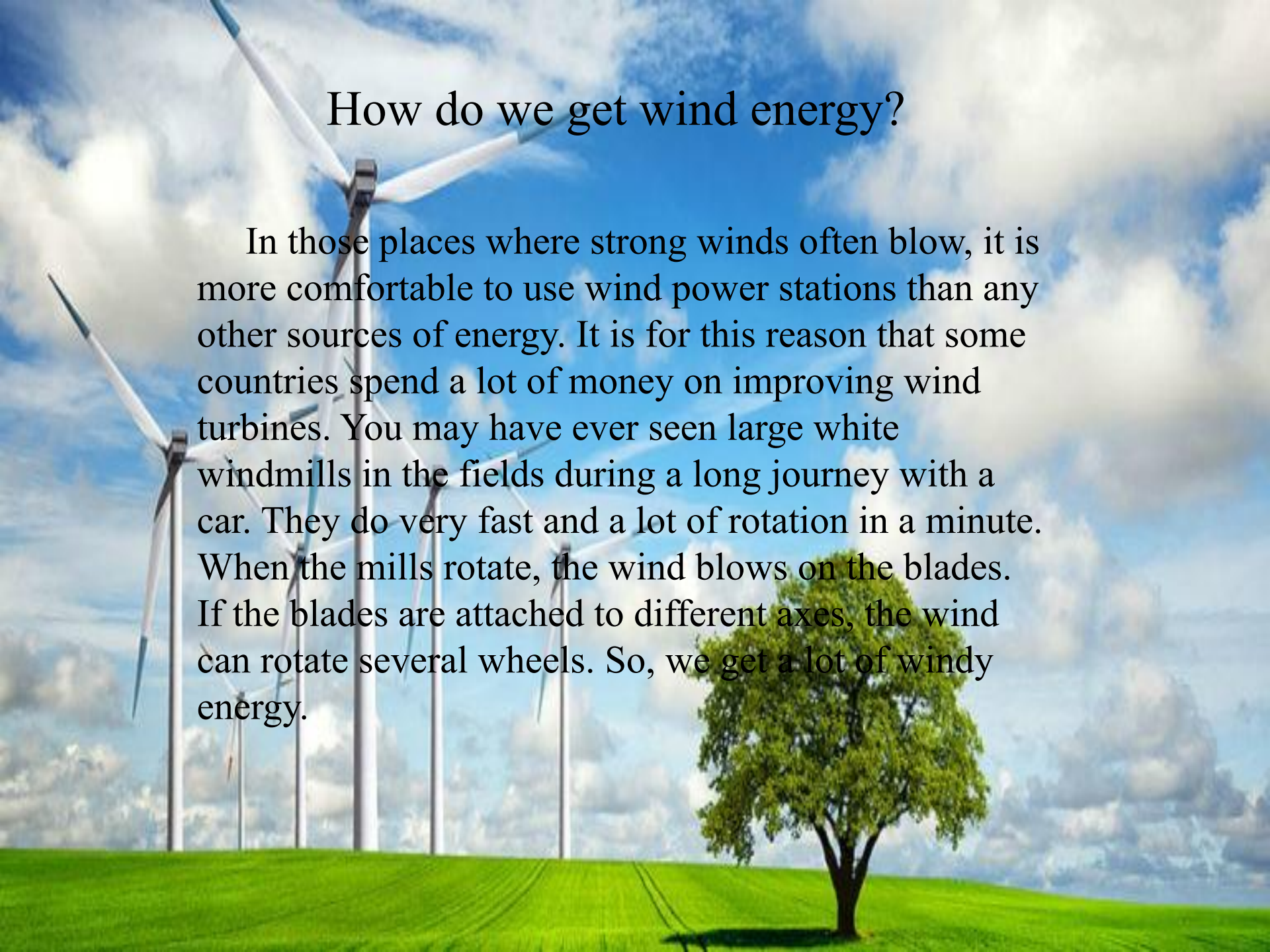




Wind energy is the transformed energy of solar radiation, and while the sun is shining, winds will also blow. Thus, the wind is also a renewable source of energy. Winds blow everywhere, they can blow in summer, and in winter, and in the daytime and at night - this is their essential advantage over solar radiation itself. It means when the wind starts to blow, then it is possible to generate electricity.

How do we get wind energy?

In those places where strong winds often blow, it is more comfortable to use wind power stations than any other sources of energy. It is for this reason that some countries spend a lot of money on improving wind turbines. You may have ever seen large white windmills in the fields during a long journey with a car. They do very fast and a lot of rotation in a minute. When the mills rotate, the wind blows on the blades. If the blades are attached to different axes, the wind can rotate several wheels. So, we get a lot of windy energy.



Advantages and Disadvantages???

Advantages:

- No pollution.
- Lowest prices renewable resources.
- Don't produce atmospheric emissions that cause acid rains and green house effects.

Disadvantages:

- Depending on how energetic a wind site is, the wind farm may or may not be cost competitive.
- Wind energy cannot be stored (unless batteries are used).
- Good wind sites are often located in remote locations.
- Wind resource development may compete with other uses for the land and those alternative uses may be more highly valued than electricity generation.
- Sometimes birds have been killed by flying into the rotors.

Wind energy in Kazakhstan

Due to technological considerations and the energy needs of developed countries, certain scale use of wind power stations in Kazakhstan.

The most promising regions, based on the availability of factors that contribute to the development of wind energy, as follows:

southern zone – Almaty, Zhambyl, South-Kazakhstan region;

Western zone – Mangistau and Atyrau regions;

Northern zone – Akmola oblast;

Central zone – East-Kazakhstan region.

Kazakhstan has sufficient economic potential for the active development of renewable energy.