



WIND POWER PLANT

Basic informations
Pros & Cons
Compares
Attractions

How does, a wind turbine works?


Wind starts spinning blades; together with blades the low turn rotates the shaft in the gear unit will increase the speed of rotation. High turn shaft is directly coupled to the generator where electricity is produced.

Parts of wind power plant

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- An exploded view diagram of a wind turbine's internal components, showing the rotor, gearbox, generator, and tower. The parts are numbered 1 through 12. A large white arrow points from the rotor towards the tower, indicating the direction of rotation or power flow. The diagram is set against a background of a blue sky with white clouds.
1. Tower
 2. Rotor blades
 3. Rotor
 4. Brake
 5. Low speed
 6. High speed
 - 7., 8. The system for winding in the direction of wind
 9. Transmission
 10. Generator
 11. Anemometer
 12. Windy drive

A photograph of a coal power plant with four large cooling towers emitting white steam.

1. = 470.

A photograph of a modern wind power plant with three blades.

At this time, mostly in the world build Wind power plant with an output of 1.8 MW to 3 MW. Tie-performing are predominantly located on the coast where the wind force is higher. In land are most often currently building Wind power plant with an output of around 2 MW.

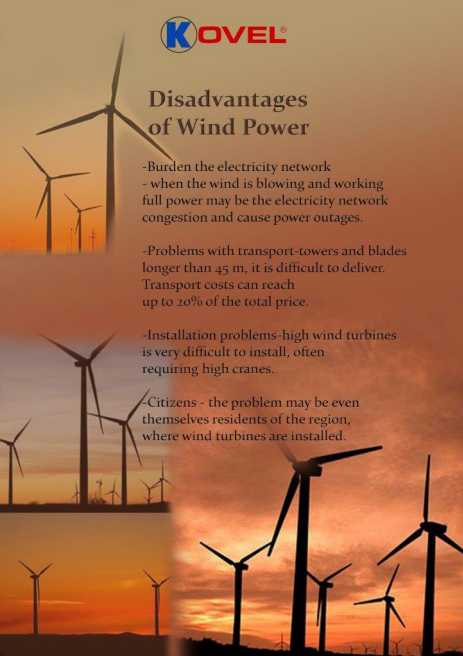
Advantages of wind power plants - why the wind?

- Competitiveness - wind turbines are already present at a level that can compete with such a source of energy such as oil, natural gas or coal.
- The wind is predictable-we all know that fossil fuel prices are volatile, but the cost of wind is predictable and permanent - wind is free in each currency. This is the main reason for people and companies seeking safer forms of investment into energy.
- Is independent wind energy - wind knows no national borders, it is an inexhaustible source of energy and blown even in countries without mineral wealth. Wherever blown, can bring new jobs and boosting the economy of the country.
- Wind energy is fast - from initial plans to start production of electricity are often expire 12 months. This course cannot be compared with other plants where the time goes several years. For example, 3 MW Vestas V90 wind turbine is so effective that it will pay for itself more than 35 times during its lifetime.
- Wind energy is clean - emits no greenhouse gases, no CO₂, no dangerous legacy for future generations. Wind turbines do not need to run a lot of water, such as thermal or nuclear power plants. A further benefit is that 80% of the wind turbine can be recycled

The following table shows the average amounts of greenhouse gases, dust and radioactive waste, which would have saved annually by installing 6 MW wind turbines (3 turbines of 2 MW):



Carbon dioxide	13 600 000 kg
Carbon dioxide	20 720 kg
Nitrogen oxides	10 220 kg
Carbon monoxidate	8 550 kg
Dust	560 kg
Radioactive waste	72 kg

The background of the entire page is a photograph of several wind turbines silhouetted against a bright orange and yellow sunset sky. The turbines are of varying heights and are scattered across the landscape.

Disadvantages of Wind Power

- Burden the electricity network
 - when the wind is blowing and working full power may be the electricity network congestion and cause power outages.
- Problems with transport-towers and blades longer than 45 m, it is difficult to deliver. Transport costs can reach up to 20% of the total price.
- Installation problems-high wind turbines is very difficult to install, often requiring high cranes.
- Citizens - the problem may be even themselves residents of the region, where wind turbines are installed.

Attractions

Produce a price for 1 kWh of electricity is already comparable to other types of plants. For the past 25 years the price dropped by 80%. This price is declining and it is clear that in the future wind power the cheapest source of electricity. Wind power is the only device to generate electricity, which during its production did not, required any human sacrifice.

Most height most currently is in the range of 80 to 100 m and average propeller also in the range of 80-100 m.

Wind power plant starts working from the wind speed 3-4m/s and going off at 20-25 m/s in order to prevent damage.

Power wind turbine Vestas V100 1.8 MW (100m diameter propeller) depending on the wind strength

Wind speed	Power
m/s	100 kW
5m/s	300 kW
6m/s	500 kW
7m/s	900 kW
8m/s	1250 kW
9m/s	1600 kW
11-20m/s	1800 kW





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