

How does an onshore wind farm work?

5 The **high-speed shaft** (+1,500 revolutions per minute) transmits this speed to the generator*.

6 The **generator** converts mechanical power into electrical power.

1 The force of the wind turns the **blades**.

2 The blades are attached to the turbine through the **hub**.

3 The **low-speed shaft** spins at the same speed as the blades (7-12 turns per minute).

7 A **converter** transforms the direct current into alternating current.

4 The **gearbox** increases this speed more than 100 times and transfers it to the high-speed shaft.

8 The **transformer** increases the voltage (20-66 kV) to be able to transport the current through the wind farm.

11 The **evacuation line** transfers the electricity to installations connected to the distribution network.

9 The energy is transmitted along **medium voltage cables** to the substation.

12 The **distribution network** transports the electricity to homes.

10 At the **substation**, the energy is converted into high voltage current (+132 kV).

* Some technologies use low speed turbines coupled directly to the low-speed shaft.