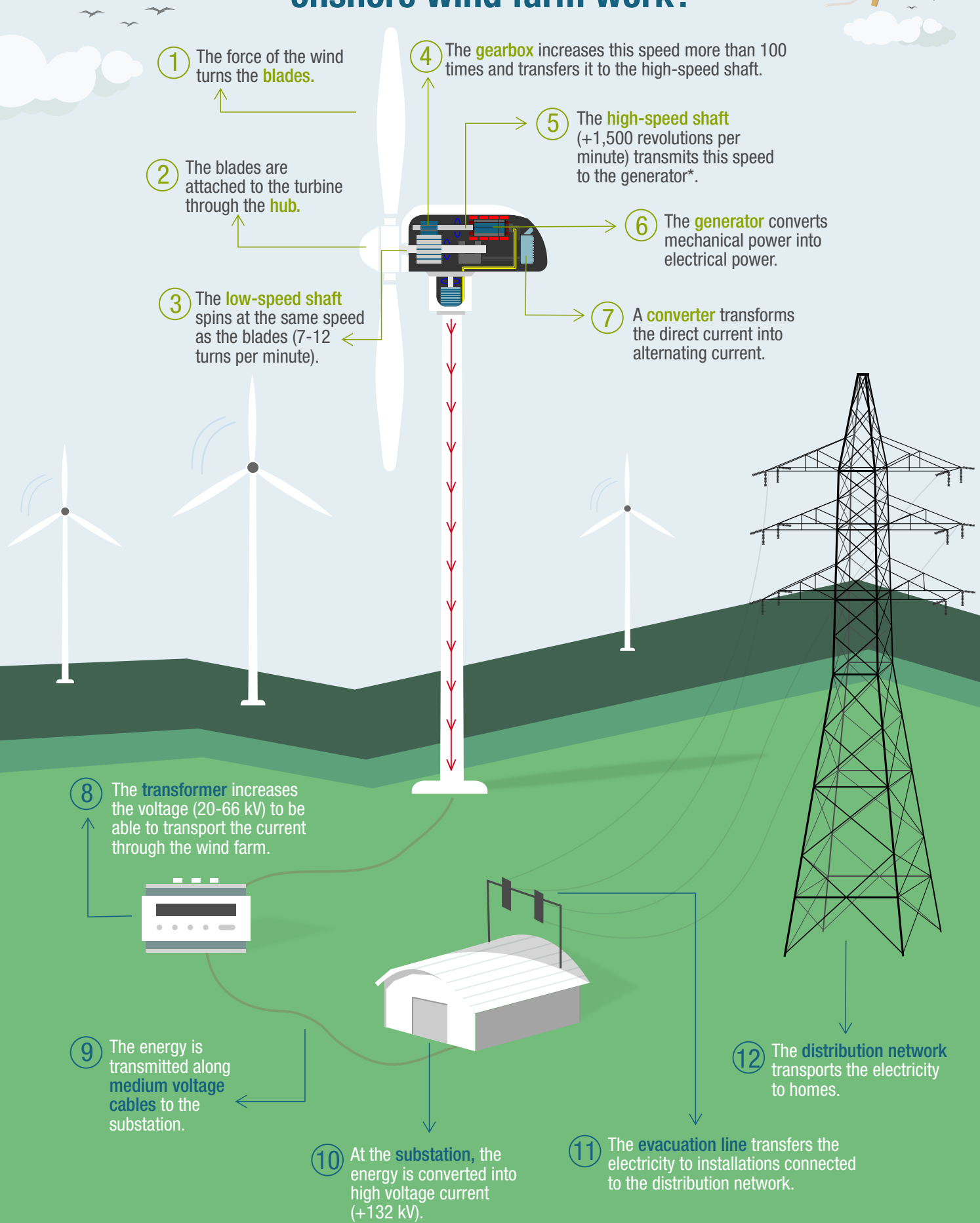


How does an onshore wind farm work?



- 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).
- ④ The **gearbox** increases this speed more than 100 times and transfers it to the high-speed shaft.
- 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.
- ⑦ A **converter** transforms the direct current into alternating current.

- ⑧ The **transformer** increases the voltage (20-66 kV) to be able to transport the current through the wind farm.
- ⑨ The energy is transmitted along **medium voltage cables** to the substation.
- ⑩ At the **substation**, the energy is converted into high voltage current (+132 kV).
- ⑪ The **evacuation line** transfers the electricity to installations connected to the distribution network.
- ⑫ The **distribution network** transports the electricity to homes.

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