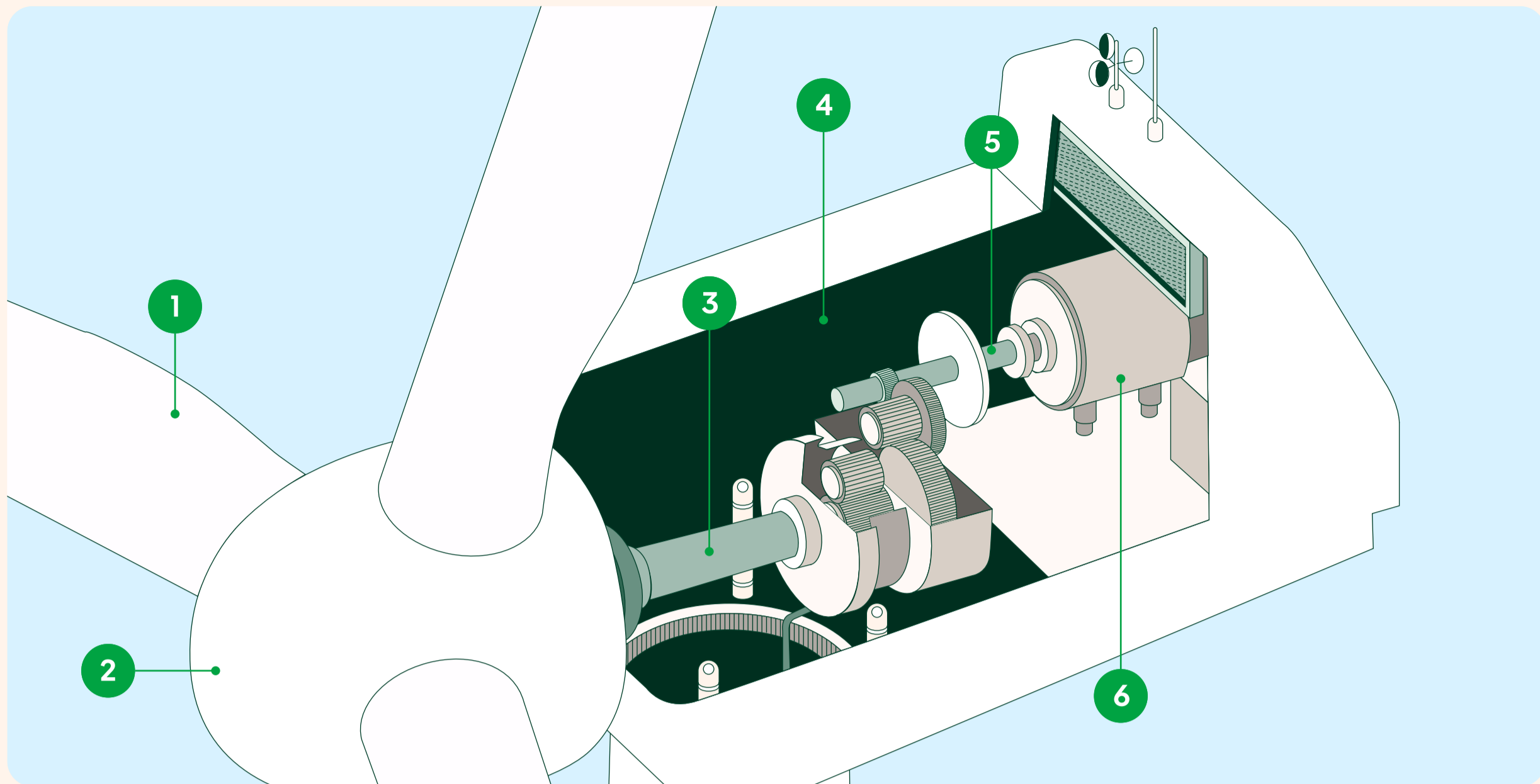


How does an offshore wind farm work?



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

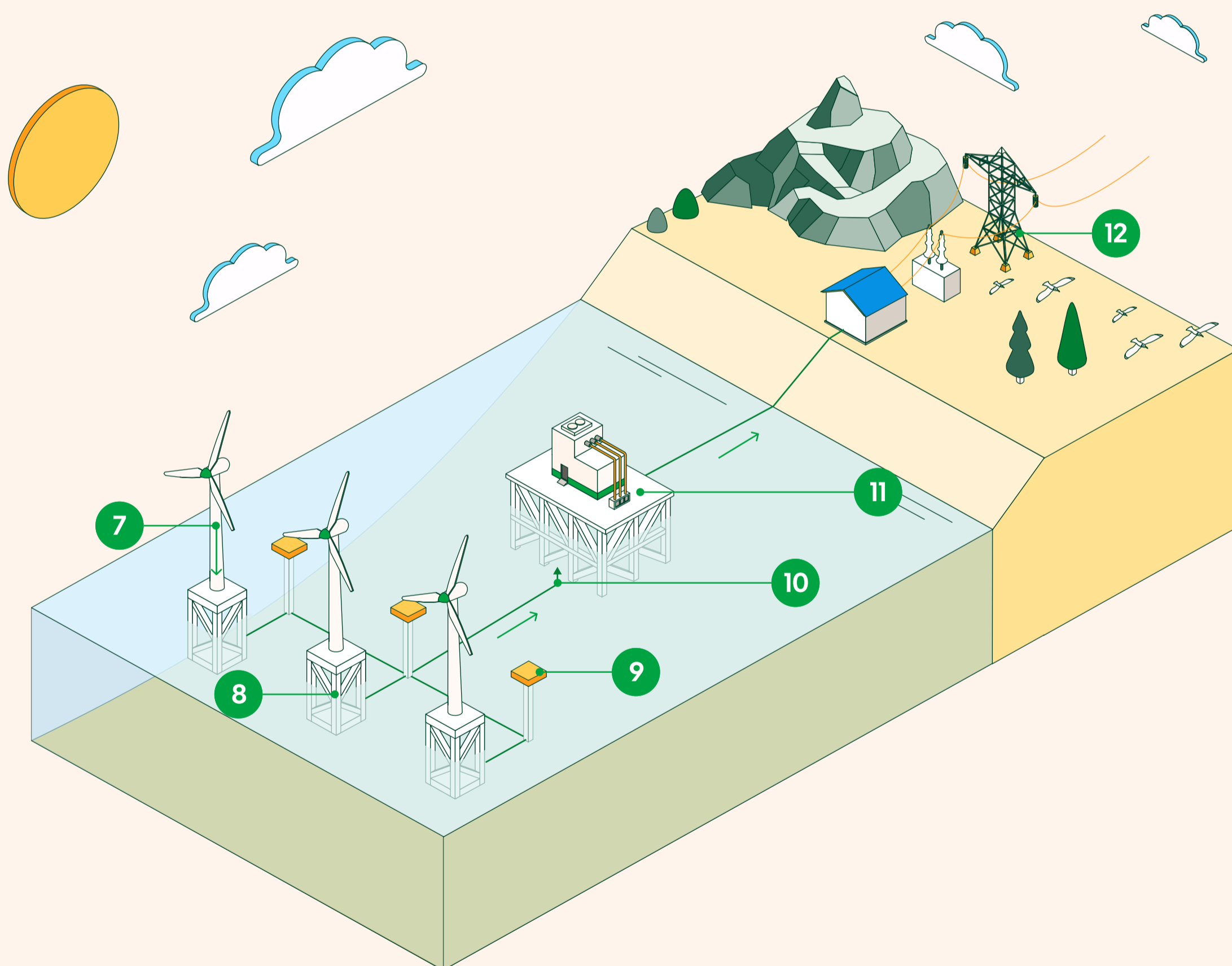
2 The blades are attached to the nacelle through the **hub**.

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** transforms the kinetic energy it receives into electricity.



7 The electricity produced by the generator is fed down through the inside of the **tower**.

8 The **converter** converts the direct current into alternating current.

9 The **transformer** raises the voltage (33 kV – 66 kV) in order to transport it across the wind farm.

10 The electricity is transmitted via **underwater cables** to the substation.

11 The **substation** receives electricity from the wind farm and raises its voltage in order to transport it.

12 Electricity is transported through the **distribution network** until homes.

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