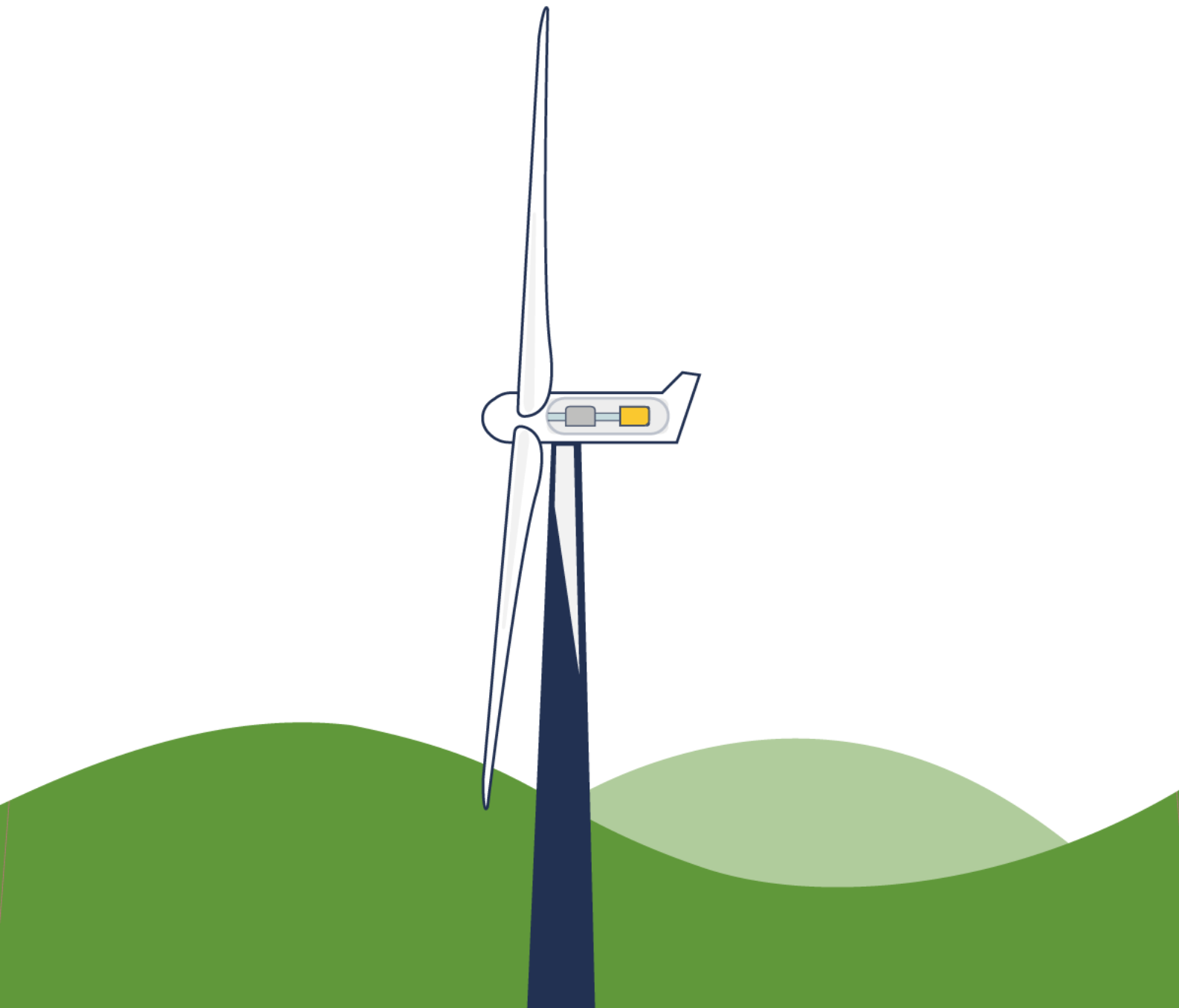


Investigating Renewable Energy

How do wind turbines work?

The diagram below shows a wind turbine. Use the description labels and arrows on the next page to show what happens at its different parts.



Blades

Tower

Gearbox

Generator

Wind Sensors

The wind pushes the blades causing them to spin; the spinning motion is carried to the gearbox via a shaft. The blades swivel to capture more or less energy depending on wind speed. The twisting shape means the blades capture wind from root to tip.

Sensors send signals to motors and the wind turbine always faces the direction of the wind.

The arrangements of coils and magnets in a generator converts the spinning motion from the gearbox into electrical energy.

The tower holds the blades high above the ground where the wind is stronger.

Gears transform the slow rotation of the shaft into a fast rotation suitable for the generator.

