

# Offshore wind energy

Did you know that energy from the wind can be turned into electricity to power our homes? Here's how it works...

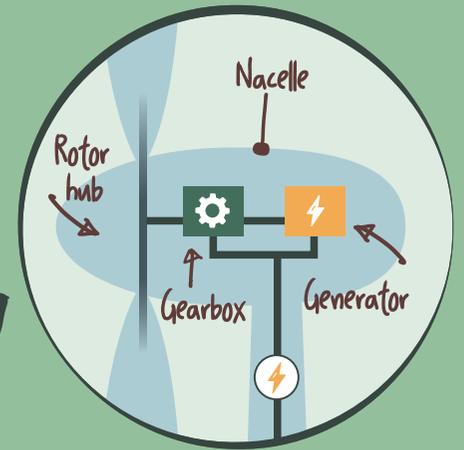
1

Offshore wind turbines are very big windmills built in the ocean.

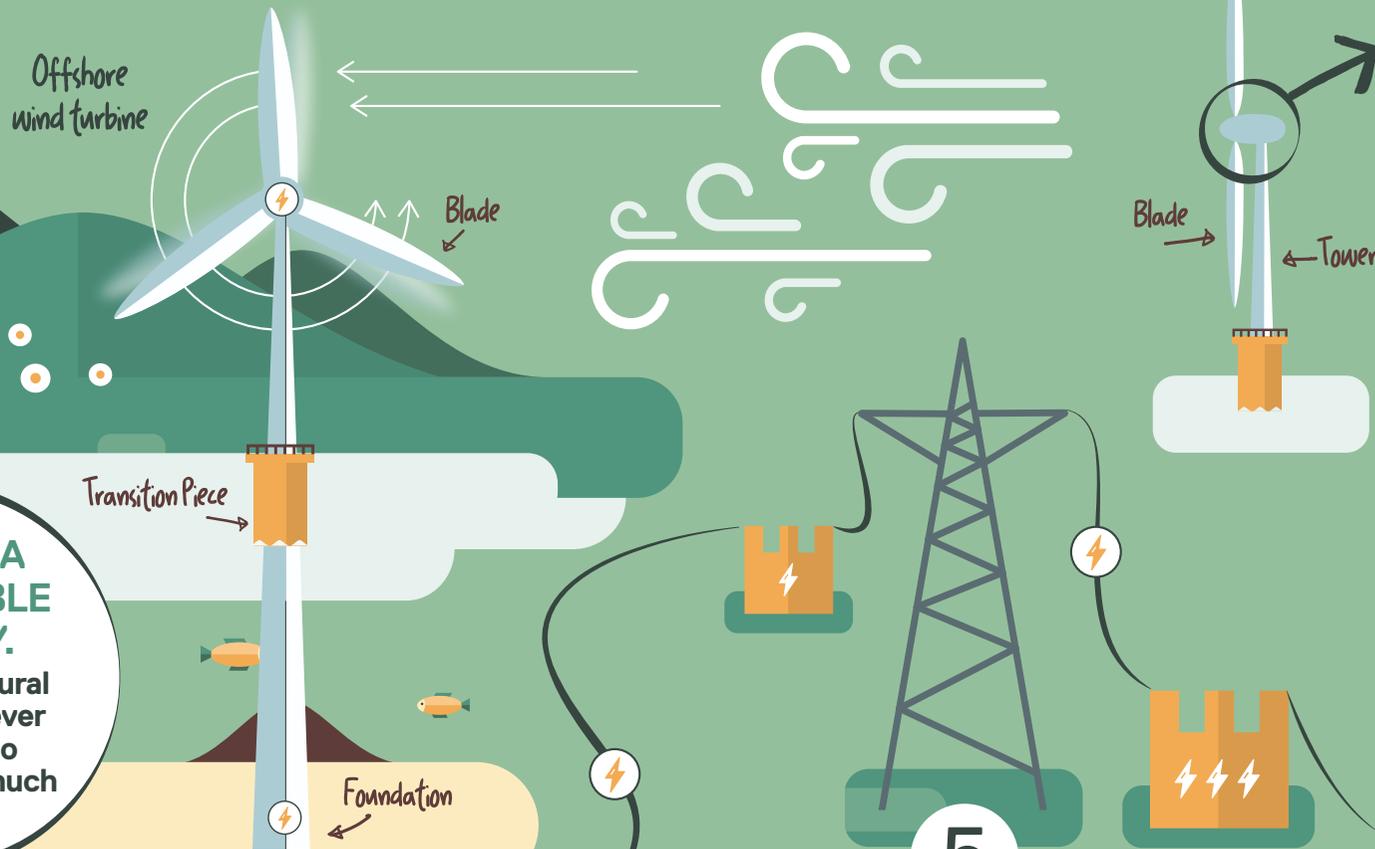
2

Long blades on the turbine catch the wind and spin around. This is called kinetic energy.

3



When the blades spin, they turn a gearbox and a generator inside the nacelle (the big box on top of the tower). This converts the kinetic energy into electricity.



**WIND IS A RENEWABLE ENERGY.**

Wind is a natural force that never runs out, no matter how much we use.

4

The electricity travels down the tower and connects up to a transmission network.

5

The transmission network is made up of power lines and substations. This moves electricity safely from one place to another.

6

Finally, electricity reaches your home. It may have travelled a long way to get there!

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## Turbines in the ocean

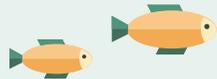
The ocean is one of the windiest places on earth, making it an excellent place for wind turbines to make lots of electricity. Turbines used in the ocean are bigger and heavier than those on land because they need to hold up to the windiest, waviest conditions. They are installed by big ships.



Electricity  
Gippsland  
Power  
Kinetic

Renewable  
Turbine  
Blades  
Nacelle

Substations  
Network  
Ocean  
Wind



## What if the weather changes?

If the wind isn't blowing, turbines can't produce electricity. That's why it's important to build wind farms in different locations where there are different weather patterns. Different types of renewable energy, like wind, solar and hydroelectric energy are used together, to be ready for many different types of weather.

### FUN FACT!

Some turbines have blades as long as a soccer field! Bigger blades catch more wind and create more electricity.

## Australia's most advanced offshore wind project

Right now all wind turbines in Australia are built on land, but a big offshore wind farm is proposed to be built in the ocean, off the Gippsland coast. It's called the Star of the South. Look up [southerlyten.com.au](http://southerlyten.com.au) to find out more.

### Ask us your questions!

Do you have questions about wind energy or Australia's most advanced offshore wind project? Work with a teacher, parent or carer to email your questions to [info@southerlyten.com.au](mailto:info@southerlyten.com.au) We'll write back and do our best to answer your questions.

