



## 5.1 Blow me down: Wind power facts and figures

- Wind power involves turning energy from the wind into other forms of useful energy.
- Wind power can be harnessed in different ways. Windmills create mechanical energy, sails move boats, and wind turbines generate electricity.
- Windmills have been around for a long time, they were used in Persia (Iran) in 200 BC.
- In 2002 a 14 year old boy in Malawi, Africa, built a 5m high wind turbine from scrap to make electricity and help his village community.
- Wind energy is clean, free and renewable (it won't run out).
- Wind farms consist of many turbines. Onshore (on land) or Offshore (in sea).
- A huge offshore wind farm in the Baltic Sea can supply 600,000 homes in Denmark.
- China has the highest wind generating capacity in the world, 342 GW.
- Wind turbines and solar panels can be placed together to make best use of wind (mostly in autumn and winter) and sun (mostly in spring and summer).
- Smaller turbines are used to charge batteries or as backup power in isolated homes, caravans and sailing ships.
- Sometimes wind turbines generate more electricity than the grid network can transport away. Wouldn't it be good if this extra energy was all stored in a battery rather than wasted?
- Modern wind turbines usually have 3 blades which can reach speeds at the tip of 320 kph.
- If it's too windy the blades stop turning automatically to avoid damage.
- The average life of a turbine is 25 years.
- The world's oldest turbine, in Denmark, has been working for 41 years.
- The tips of large wind turbines can reach heights up to 200 m.
- Some owners are replacing their turbines with more modern ones that can capture the wind better and make more electricity. It's called "repowering".
- A trial is taking place now (Autumn 2021) at a wind farm in Co Antrim to use its generated electricity to split water and produce Hydrogen gas (H<sub>2</sub>) to be used to fuel Translink buses. Some scientists hope H<sub>2</sub> will be the clean green fuel of the future.
- Battery storage allows electricity generated on a windy day to be used when the wind isn't blowing.

**One thing we know:**

**One thing we would like to find out:**