3 Climate heating and renewable energy

READING HYDRO

From here you can see the turbine house built by Reading Hydro volunteers.
It contains the equipment that converts the power of the water to electricity.

Information board sponsored by the University of Reading

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Why do we need renewable sources of energy?

Climate heating means we are causing the Earth to get hotter. Some places are predicted to get too hot to live in. Sea levels are rising. The weather is harder to predict. There are more storms and heatwaves. This makes farming more challenging.

Climate heating happens because our day-to-day activities produce 'greenhouse gases' like carbon dioxide. These gases trap heat in the air around us. One activity that produces carbon dioxide is generating electricity by burning fossil fuels such as gas, coal and oil. We need to use more renewable sources of energy to generate electricity without producing carbon dioxide.

Can you describe one difference between electricity produced by fossil fuels and electricity produced by a hydroelectricity scheme?

Water power
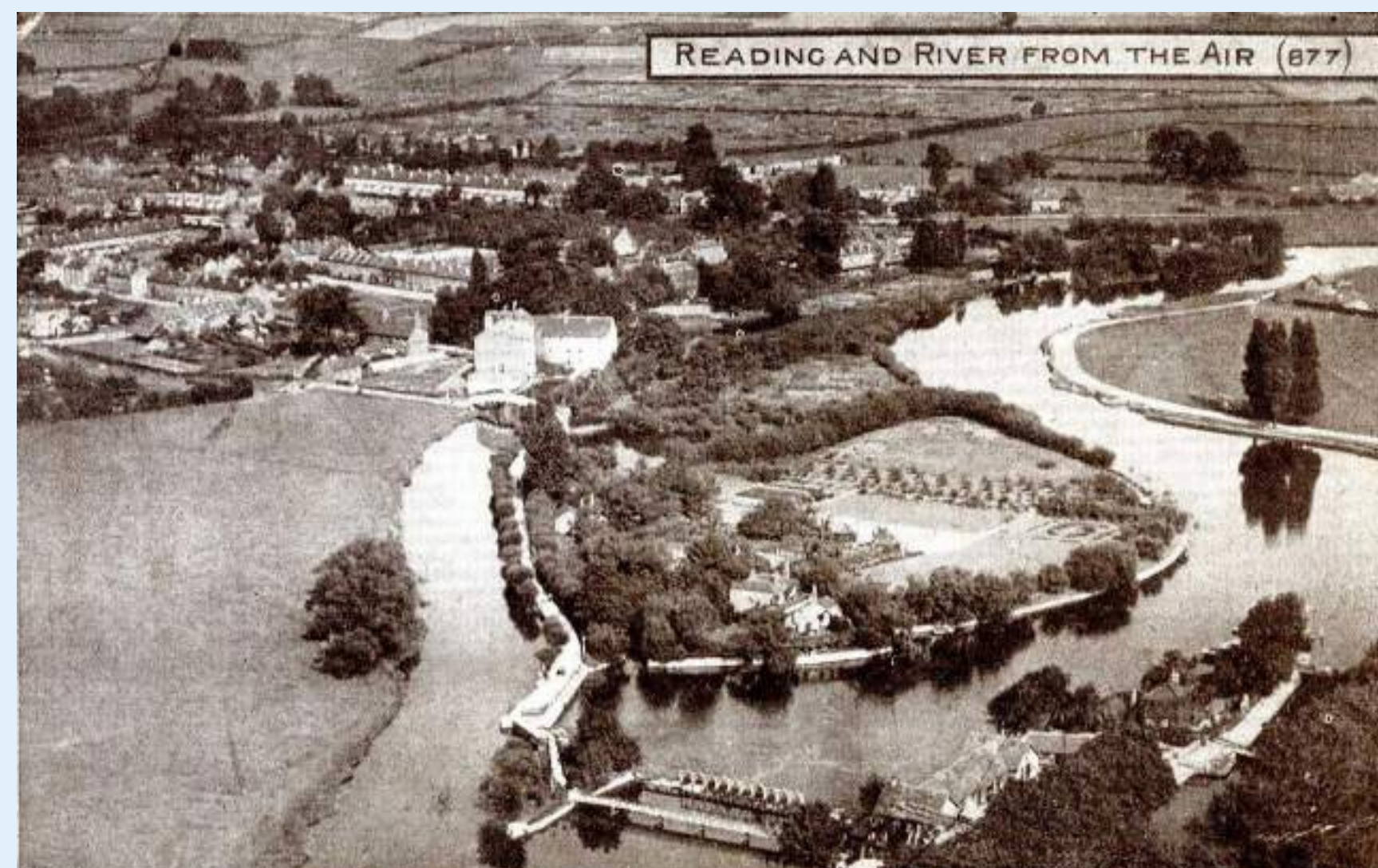
Aerial view of Caversham Lock and Surrounding Area (about 1920). Photo kindly provided by Reading Library's Illustrations Commission.

Using the flow of water to generate power is not new. Over 2,000 years ago people used water to turn millstones to grind corn to produce flour. The Domesday Book of 1086 mentioned a watermill near this site. The channel behind you took water to this mill, now it takes water to our hydroelectric plant.

From the 18th century the industrial revolution led to improvements in the efficiency of water-generated power and it was used to run machinery, such as cotton spinners.

Our hydroelectricity replaces electricity generated from fossil fuels. This helps cut climate heating. The energy in flowing water is 'renewable' – it won't run out when we use it to generate electricity.

How has the way we use water to provide power changed?

Other sources of renewable electricity

- Wind turbines
- Solar cell
- Water-power plant

Wind and sunshine are other forms of renewable energy used to generate electricity. But wind turbines work only when the wind blows, and solar panels only when the sun is out. However, the Thames flows all year round. This means that our hydroelectric plant should generate electricity 24/7 for much of the year.

Most electricity is generated a long way from the homes and businesses that use it. Reading Hydro's scheme is in the centre of a town, so all the electricity we generate is used nearby. This reduces the waste that happens with long distance transmission.

What is one advantage of hydro power compared to wind power and solar power?

Find our information boards

Key
- Reading Hydro
- Fish pass
- Renewable energy
- Helping wildlife
- Hydroelectricity
- Trees and plants

Heron Island

Car Park

River Thames

View Island

You are here

READING HYDRO

Caversham Weir

Electricity in the UK

Electricity supplied by fuel type 1990 to 2020

Renewable sources
Gas
Coal
Other & net imports
Nuclear

Many nations committed to tackling climate heating in 1990. Since then the UK has made big cuts in the carbon dioxide produced from generating electricity. We've done this by using much less coal and much more renewables.

But we need to produce more renewable electricity to reduce generation from gas. And in future we'll need even more to run all-electric cars and heat homes.

What's on the walls of the turbine house?

Each climate stripe represents the average global temperature for a single year. The dark blue stripes are the coldest years and the dark red stripes are the hottest. The first stripe on the left is for 1850 and the last one is for 2017. We have left a space to add stripes up to 2030.

The climate stripes were created by Professor Ed Hawkins MBE. He is a climate scientist at Reading University.

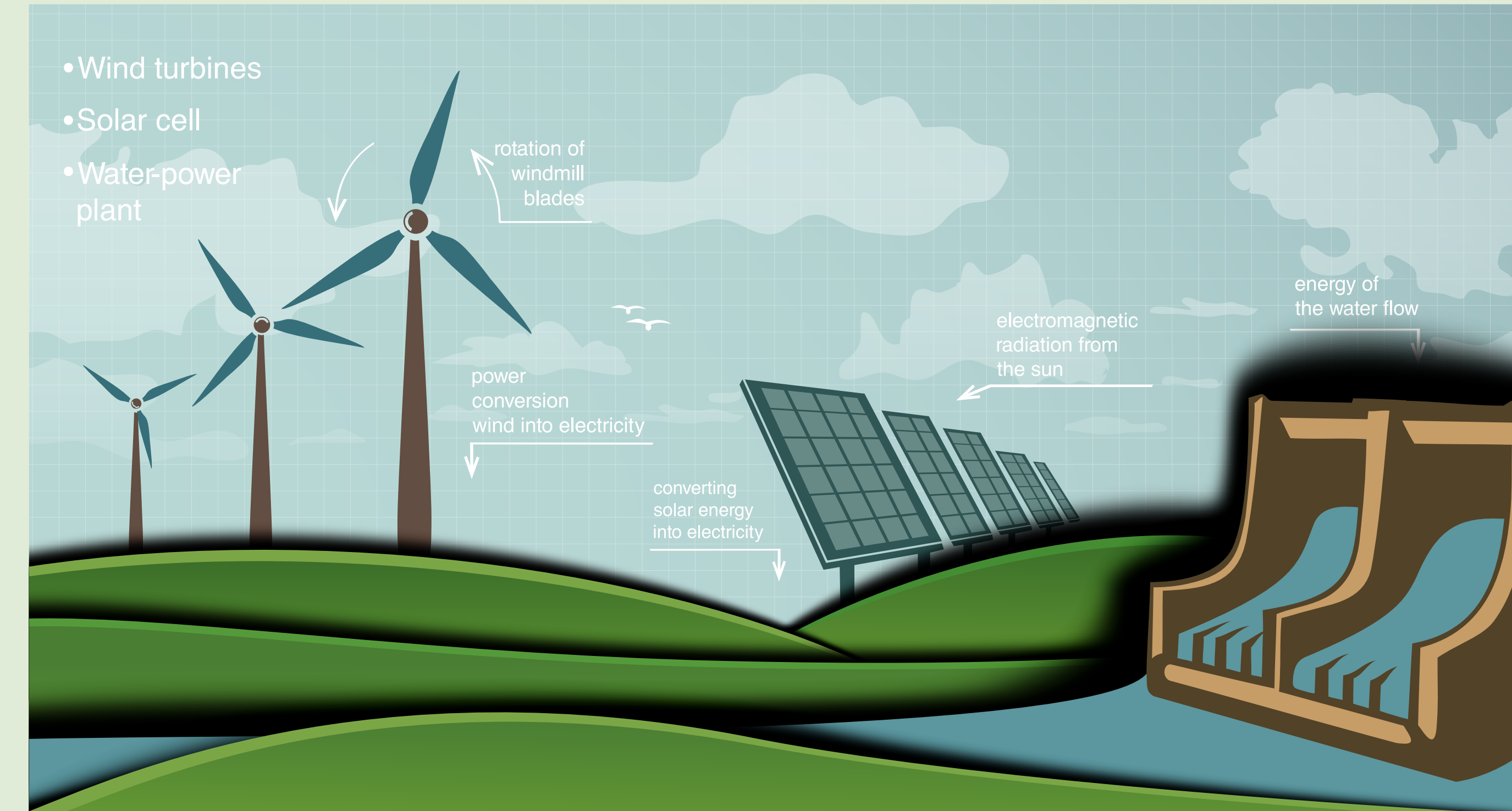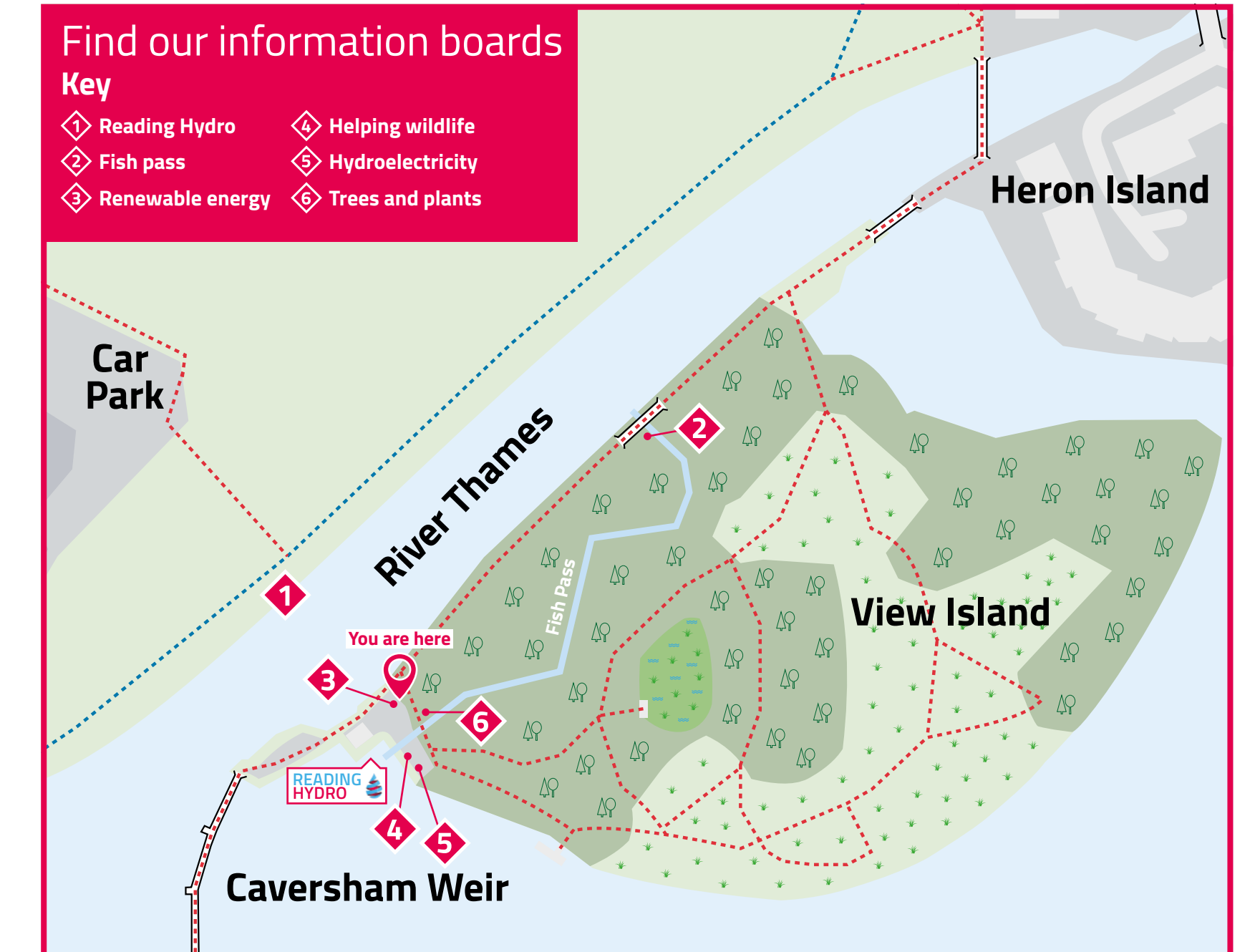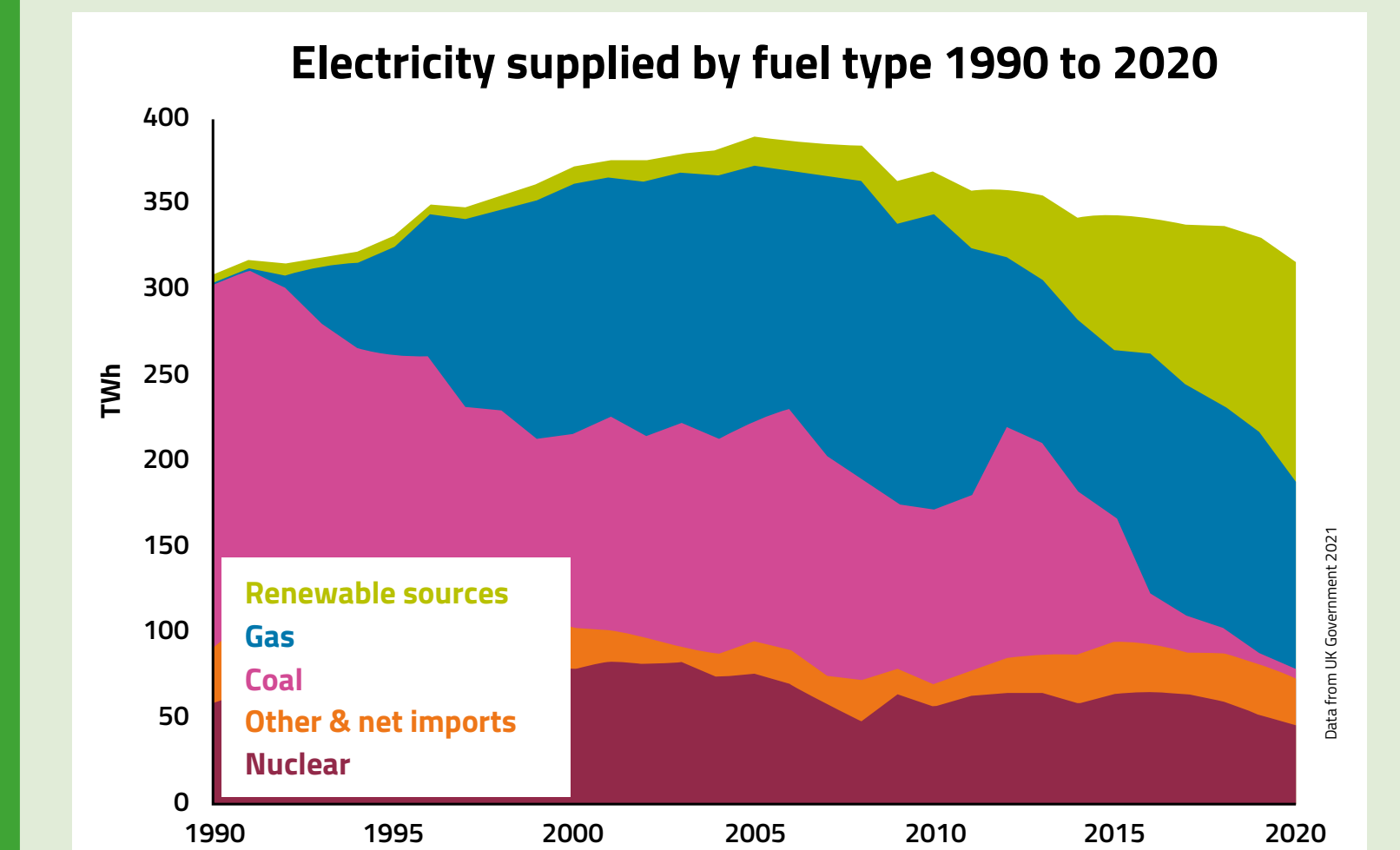*What do the climate stripes tell us about how the temperature is changing?*

The mural is called 'Community Energym'. It imagines drops of water from the River Thames going to the gym! They use exercise machines to generate electricity. Archimedes and Mother Thames both help.

Guglielmo Miccolupi, of Commando Jugendstil, won our competition to design the mural. Guglielmo and other volunteers painted the mural and the climate stripes.

Why is Archimedes pictured in the mural?

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Generating renewable electricity from the power of water
Reading Hydro thanks the 150 volunteers and 750 investors who made this possible