



# OUR CHANGING PLANET



## HOW IS HUMAN ACTIVITY IMPACTING ON OUR WORLD?

### What can YOU do about Climate Change?



**Electricity:** If you're leaving lights on when you don't need them, turn them off. Switch off electrical appliances at the wall, don't leave them on standby.



**Turn down the heat:** There's a good chance that your central heating and hot water use a gas boiler, so whenever the boiler is on, it's burning gas and releasing more carbon dioxide into the atmosphere. Try turning your heating thermostat down to 20C. If you feel a bit chilly indoors in winter, try putting on a jumper first, don't just turn up the heat!



**Switch to renewable energy:** You could look at switching to a green energy supplier for your home's electricity and gas. You could think about installing renewable energy for your home. You can use solar heating panels to make hot water and photovoltaic panels to generate electricity. You could also consider greener heating alternatives like air- or ground source heat pumps, which use much less energy and emit less carbon dioxide than gas boilers.



**Avoid fast, cheap fashion:** 100 billion items of clothing are produced each year to keep up with changing fashion trends. It is estimated that 85% of all textiles are thrown away every year, from clothes that lose their quality to clothes that go out of trend; clothes that end up in landfill can take up to 200 years to decompose. Where possible, when you grow out of your clothes, donate them instead of throwing them away and consider buying pre-loved clothes.



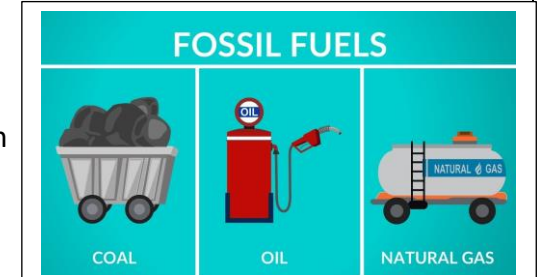
**Think about the food you eat:** Cows and sheep produce large amounts of methane, a greenhouse gas that's over 80 times more powerful than carbon dioxide over a 20 year period. But that's not all, because many farm animals in the UK are fed with soya, much of which is grown in South America on land that has been cleared of rainforest. Eating less meat makes a big difference to the climate crisis and to loss of habitats and wildlife around the world.



**Think about how you travel:** Could you walk or take a bus or train, rather than going in the car? And when you go on holiday, think about staying more locally, and try to cut down on air travel. For example, a return flight from London to Los Angeles produces 1.64 tonnes of CO2 per passenger, whilst a return from London to Perth produces 3.15 tonnes per passenger. That's almost half of the annual CO2 emissions of an average UK citizen!

### What are fossil fuels?

Trees breathe in carbon dioxide and store the carbon in their trunks. Millions of years ago many trees sank into the swampy ground where they had been growing and disappeared, taking the carbon they had absorbed with them. Under pressure from above, they turned in to a kind of fossil which we call **coal**. Now we are digging it up to use as a fuel because the carbon which was stored in the fossils burn really easily. The same thing happened with **oil** and **gas** except these were originally tiny sea creatures which stored the carbon in their bodies and shells and took it with them when they died and their bodies got buried. The trouble is that when we burn fossil fuels to make electricity, run our cars and for many other uses the carbon is released back into the atmosphere where it contributes to the **greenhouse effect**.



### What is renewable energy?

**Renewables** come from our planet's unlimited sources of energy, like wind, sunlight, waves and the earth's internal heat. They are incredibly valuable energy sources, also known as "clean energy" as they do not pollute the environment.

Here are 5 main sources of renewable energy and why they are so important to us.



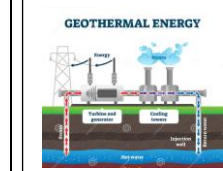
**Solar Energy:** This is energy produced directly from sunlight through smart solar panels placed outside of buildings facing the sun. Solar can be used to heat up buildings, water, and be turned into electricity.



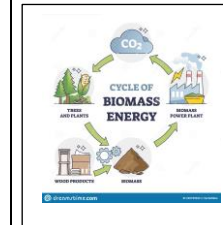
**Wind Energy:** The blades of large windmills are moved by the power of the wind. These blades spin a turbine inside a generator to produce electricity.



**Hydroelectric Power:** Water from dams and rivers can be used to spin powerful turbines and generate what we call hydroelectricity. Several provinces in Canada produce over 90% of their energy through hydropower.



**Geothermal Energy:** Huge pumps extract the heat and steam from below the Earth – mainly from volcanoes and geysers – and use these to heat up homes and buildings as well as to generate electricity. About 25% of the total electricity of Iceland is produced by geothermal energy, thanks to the country's several hot springs.



**Biomass Energy:** This is the oldest source of renewable energy on the planet. With biomass, we refer to all organic matter that has stored energy through the process of photosynthesis. Think wood, crops, seaweed, and animal wastes. This energy is converted to electricity and heat.