



Carbon

What are fossil fuels?

Fossil fuels are non-renewable energy sources such as coal, oil and natural gas. All three were formed from the fossils or remains, of decomposing animals and plants that were buried under mud many millions of years ago. Heat from inside the earth and increasing pressure from the weight of the increasing sediment caused the fossils to change into rock. The plant and animal remains were altered chemically by this process, and slowly changed into oil, coal and natural gas.

Because it takes millions of years for fossil fuels to form, they are known as 'non-renewable fuels'. When humans use fossil fuels they are using the fuels that were made more than 65 million years ago. Once they have been used up, they cannot be replaced as they are no longer being made or are being made very slowly.

Carbon footprint

When we use fossil fuels, like heating oil, to keep our house warm or we put petrol in our car, carbon dioxide (CO₂) is created, which is a greenhouse gas. As a greenhouse gas, carbon dioxide traps heat in the earth's atmosphere, contributing to global warming.

Our carbon footprint is the total amount of CO₂ we create. A big carbon footprint means we are producing a lot of CO₂ and are having a bigger impact on the planet.

Carbon dioxide (CO₂) is waste energy

Every time we use energy that comes from fossil fuels, we create CO₂, increasing our carbon footprint. Think of CO₂ as waste energy; it's what we create as we undertake our daily activities.

Electricity

The electricity we use in our home is the largest contributor to our carbon footprint. Although electricity doesn't create greenhouse gases at the time we use it, the processes that power plants use to create electricity by burning fossil fuels do as they release greenhouse gases into the atmosphere, such as carbon dioxide.

Heating your home

Keeping warm in the winter is the second biggest source of CO₂ and it contributes to our carbon footprint. Our houses use fossil fuels like oil, gas or electricity to run central heating systems to keep us warm. The amount of CO₂ our home creates depends on the type of fuel we use and how high we set our heating thermostat.

Other sources of carbon dioxide

There are both natural and human sources of carbon dioxide emissions. CO₂ is naturally released during respiration (released as a waste product when animals and humans breathe out) and during the process of decomposition. Human activities inadvertently release CO₂ through activities such as cement production, chemical production, deforestation as well as the burning of fossil fuels. Human activities have been the main cause of rising carbon dioxide levels in our atmosphere since the Industrial Revolution.



Moving to other forms of energy to achieve net zero carbon emissions

Great Britain is aiming to achieve 'net zero' carbon emissions by 2050. That means getting rid of fossil fuels and switching to clean technologies like renewables. Renewable energy sources are being used and developed to help us get there. Renewable energy sources such as wind, solar and hydro power don't produce carbon emissions as part of the electricity generation process. Instead they harness the natural energy from the sun and weather. Increasing nuclear energy production, which does not release greenhouse gases, so is a low-carbon fuel is also being investigated.

Reducing your carbon footprint

The best way to reduce your carbon footprint is to use less electricity and therefore less fossil fuel. For example:

- Be sure to turn off the computer when not in use.
- Turn off the television and lights when not in use.
- Only turn on the heating when you really need it. Why not cuddle up under a rug instead?
- Ensure the walls, roof, and floors in your home are insulated, helping you to cut back on heat waste and reduce your carbon footprint.
- Use public transport instead of making a car journey, or even better cycle or walk.
- Every product we buy has a carbon footprint. Energy will have been used in making that product and getting it to you, resulting in carbon emissions. Reduce the impact by reducing the amount you consume. Where possible, re-use and recycle when you no longer need something.
- Think about what you eat and waste. Food that has been grown locally and in season will travel fewer 'food miles' before it makes it to your plate. Waste food ends up in landfill, where it decomposes and releases greenhouse gases speeding up the impact of climate change. Throwing less food away is good for your wallet as well as the planet.
- Plant trees. Planting trees is an effective way to lower your carbon footprint. While they are growing, trees absorb carbon dioxide from the atmosphere through the process of photosynthesis and store it as carbon in the form of wood. Whilst a tree is healthy and growing it will continue to hold on to the carbon and absorb more throughout its life.

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