Fossil Fuels

Fossil fuels include oil, gas and coal. The UK is lucky enough to have its own sources of fossil fuels, and we have been relying on them for hundreds of years to provide cheap and convenient energy.

However, fossil fuels release carbon dioxide into the atmosphere. In recent years we have been needing to find other sources of these fossil fuels as our own supplies are running low.

We get our fuel supplies from places all over the world. One problem of relying more on imports is that we have become dependent on other countries for something that is essential for our everyday lives.

As fossil fuel supplies run low across the world, the price of oil, coal and gas will increase. The price of these is also unpredictable, making it hard to plan for spending.

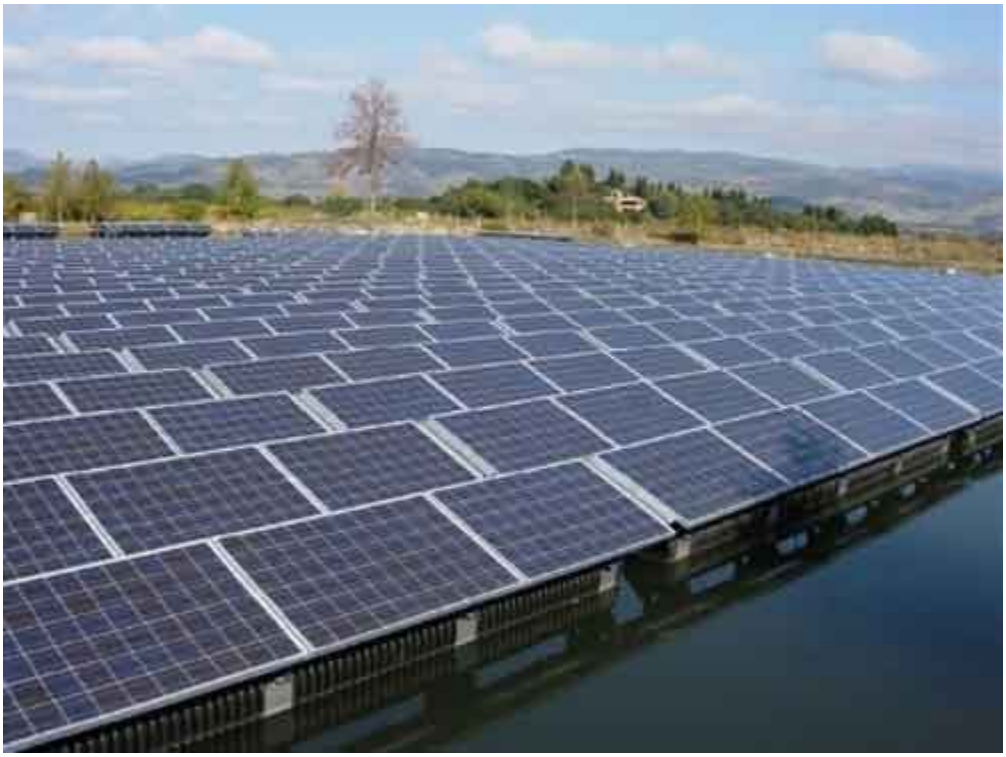
Solar Power

Solar panels, which use the Sun's energy to produce electricity and hot water, are already appearing on roofs around the UK.

Solar panels only make energy during the day, and we need a fairly large area of solar panels to generate decent quantities of energy.

Solar energy is renewable, and is a good way of generating clean energy with no emission gases.

However, solar panels are not very efficient at the moment, and they are often seen as an expensive way to generate electricity.



Wind Power

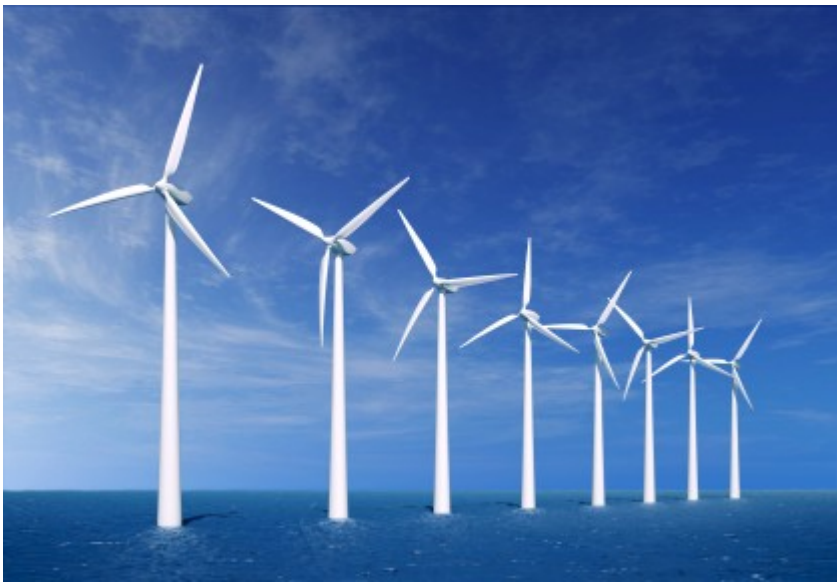
Wind farms are great for reducing emissions of carbon dioxide, because they generate power without releasing any gases at all.

As a windy island, the UK has good wind resources, and this would allow us to be less dependent on other countries for our energy supplies.

However, the turbines are very dependent on weather conditions. If the wind stops, or doesn't blow hard enough, they won't generate any energy. If there's nothing to back them up, the lights start going out!

Wind turbines also take up a lot of space. 20,000 wind turbines, spaced evenly along all Britain's motorways, dual carriageways and trunk roads, would mean one every 600 metres.

Some people are also worried that building lots of wind farms would have a big visual impact on our landscape, and that we should consider carefully where to build them so that our landscape is not spoiled.



Biomass

The biomass used for energy – or biofuel – comes in many different forms. Our forests and farmlands are important sources of biofuels (e.g. wood off-cuts, straw, manure, crops). This can also include household food waste and human sewage.

Biofuels could play an important part in generating energy without releasing extra carbon dioxide gas. An important thing to remember, though, about crops grown for biofuels is their effect on the wider environment, and the space needed to grow them.

As the global population grows, there will be a tension between using land to grow biofuel crops and finding the space to grow enough food crops. Growing lots of biofuels in the UK would mean we should have to import more food.

Growing biofuels would also change the landscape – some biofuel crops grow to over 9 feet tall before they are harvested!

Nuclear

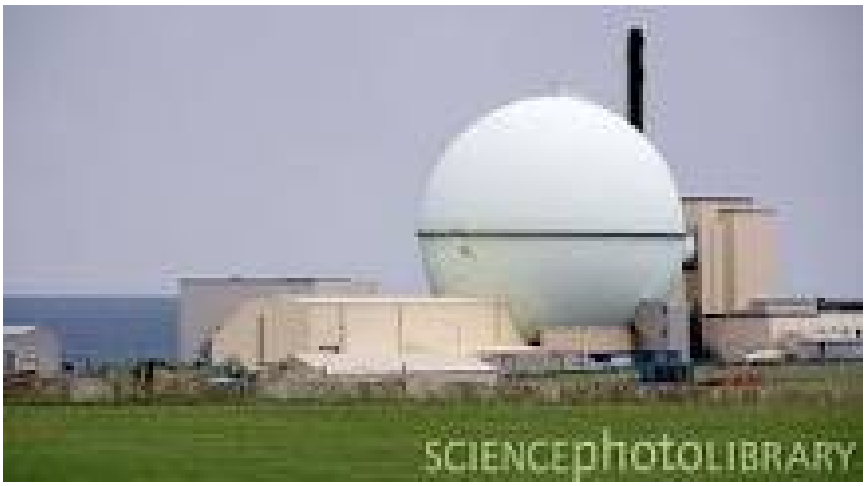
Nuclear is a proven source of large amounts of energy with very low carbon dioxide emission. Nuclear power gives off about the same amount of carbon dioxide as wind, and works in all weathers.

Nuclear power stations (like Sizewell B) in the UK have been generating electricity since the 1950s, and currently generate about 20% of our electricity.

Although we understand how to generate safe and efficient nuclear power, we need to think about what to do with the nuclear waste produced, some of which will remain dangerous to humans and the environment for thousands of years.

Nuclear reactors use uranium, and this will last for thousands of years, much longer than fossil fuels. We need to rely on imports for uranium, but lots of countries have it.

To generate **all** of our energy by nuclear, we should need to build 50 large nuclear power stations by 2050.



Tidal

Geothermal

Hydroelectric