Energy from Fossil Fuels

Coal, **oil** and **gas** are
called "fossil fuels" because they have been formed from the organic remains of prehistoric plants and animals.

How it works:

Coal is crushed to a fine dust and burnt.
Oil and gas can be burnt directly.

The main bit to remember:

Burn Fuel → Heat water to make steam → Steam turns turbines → Turbines turn generators → Electrical power

The steam that has passed through the power station's turbines has to be cooled, to condense it back into water before
it can be pumped round again. This is what happens in the huge "cooling towers" seen at power stations.
Some power stations are built on the coast, so they can use sea water to cool the steam instead. However, this warms the sea and can affect the environment, although the fish seem to like it.

Coal provides around 28% of our energy, and oil provides 40%. Mind you, this figure is bound to have changed since this page was written, so check the figures if you want to quote them. Burning coal produces sulphur dioxide, an acidic gas that contributes to the formation of acid rain. This can be largely avoided using "flue gas desulphurisation" to clean up the gases before they are released into the atmosphere. This method uses limestone, and produces gypsum for the building industry as a by-product. However, it uses a lot of limestone.

Crude oil (called "petroleum") is easier to get out of the ground than coal, as it can flow along pipes. This also makes it cheaper to transport.

Natural gas provides around 20% of the world's consumption of energy, and as well as being burnt in power stations, is used by many people to heat their homes.
It is easy to transport along pipes, and gas power stations produce comparatively little pollution.

Other fossil fuels are being investigated, such as bituminous sands and oil shale. The difficulty is that they need expensive processing before we can use them; however Canada has large

reserves of 'tar sands' , which makes it economic for them to produce a great deal of energy this way.

As far as we know, there is still a lot of oil in the ground. But although oil wells are easy to tap when they're almost full, it's much more difficult to get the oil up later on when there's less oil down there. That's one reason why we're increasingly looking at these other fossil fuels.