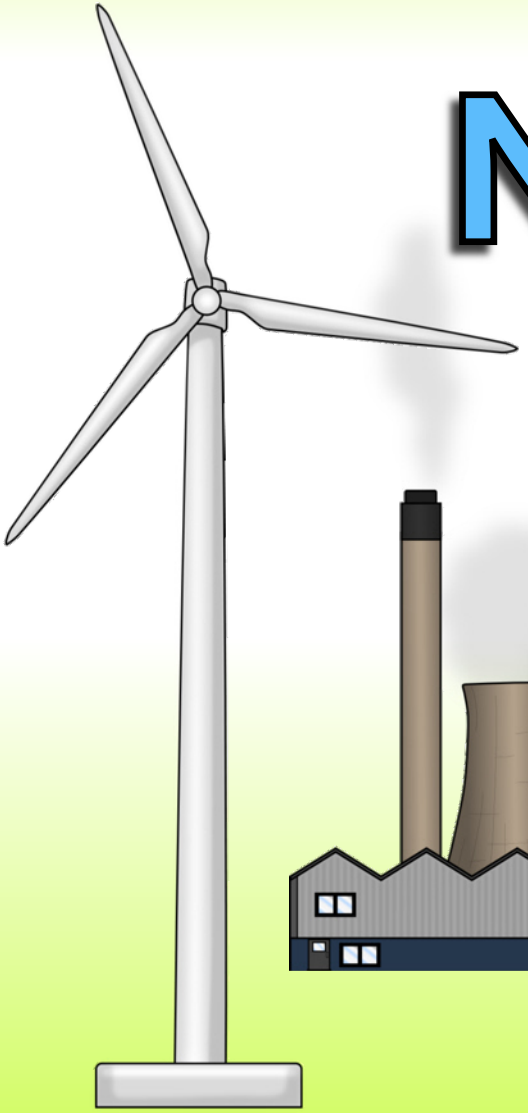
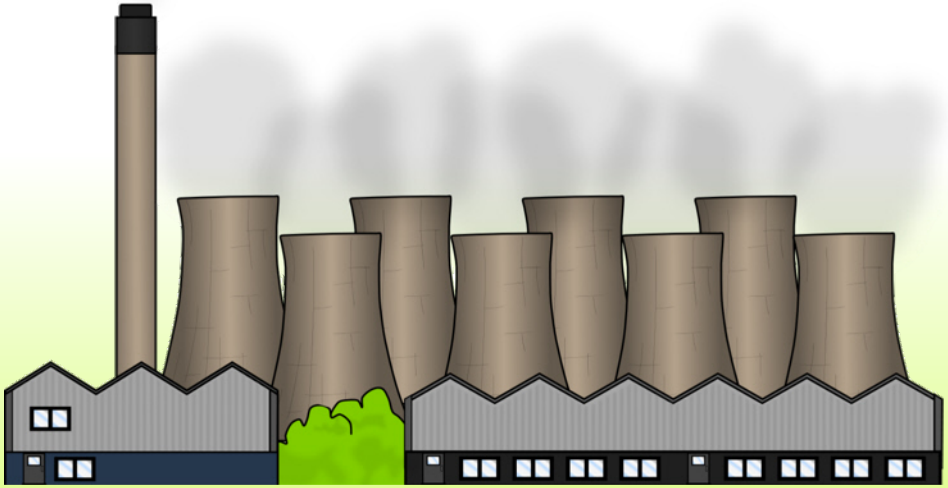
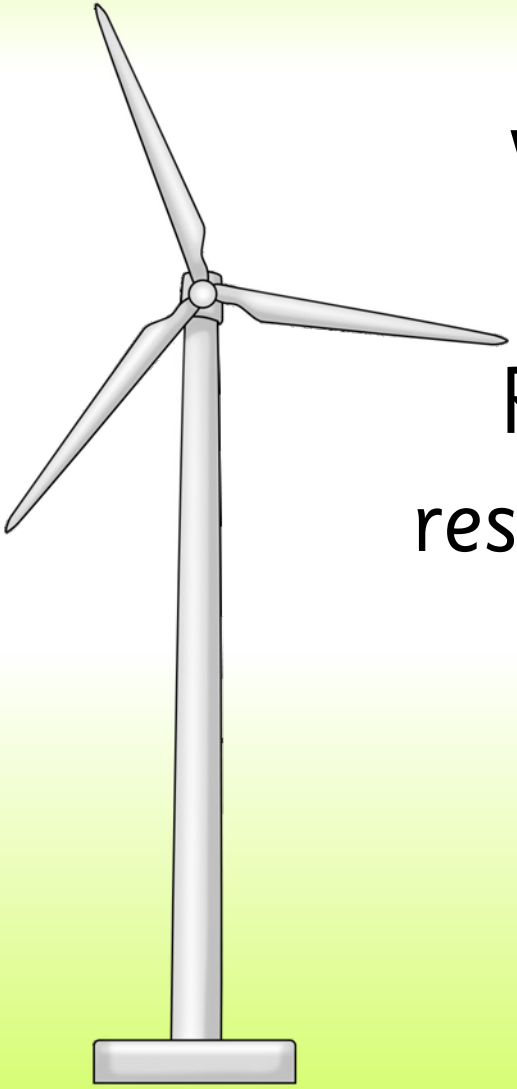
Renewable and Nonrenewable Energy





Renewable Energy



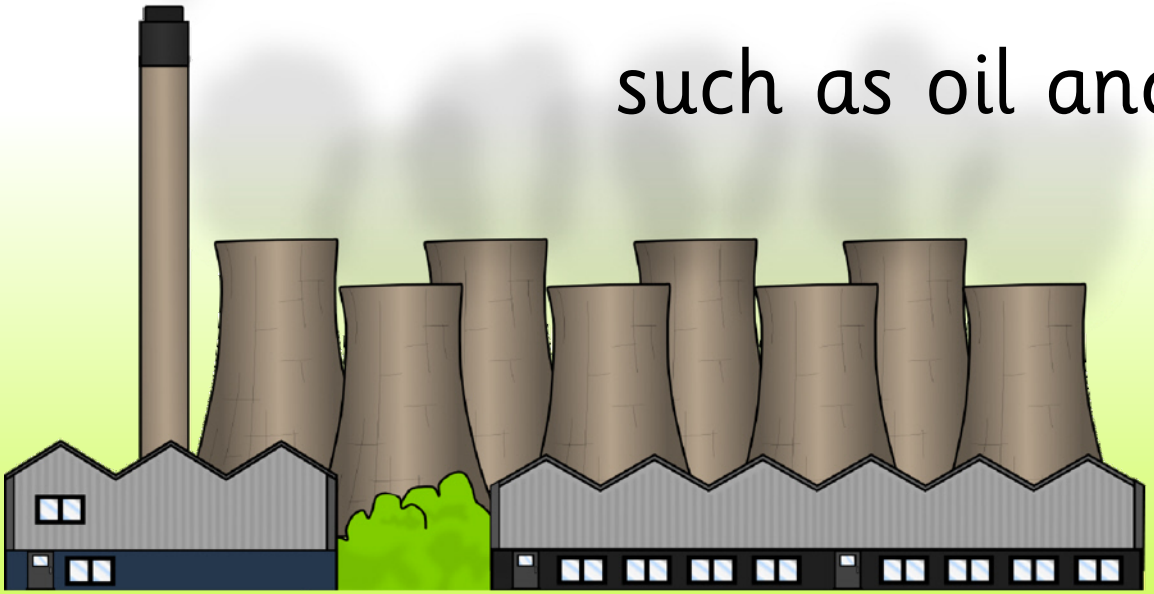
What is renewable energy?

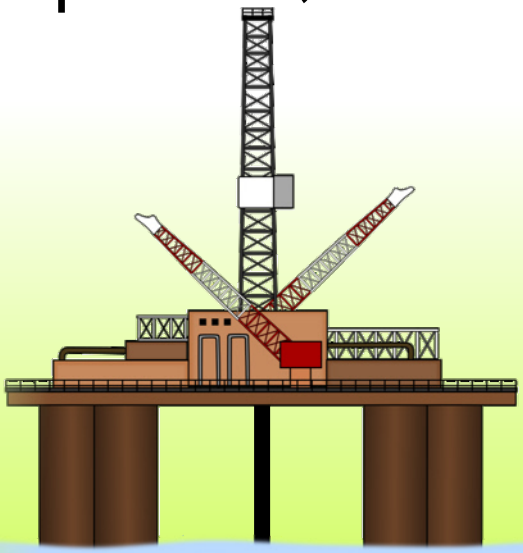
Renewable energy is made from resources that are naturally replaced, like wind, water and sunshine.

Nonrenewable Energy

What is nonrenewable energy?

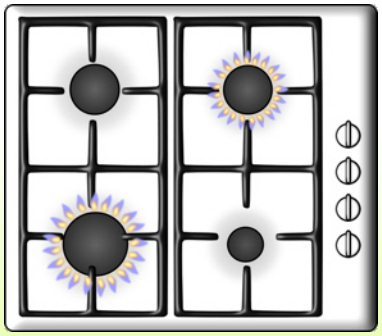
Nonrenewable energy is made from natural resources that can't be replaced, such as oil and coal.



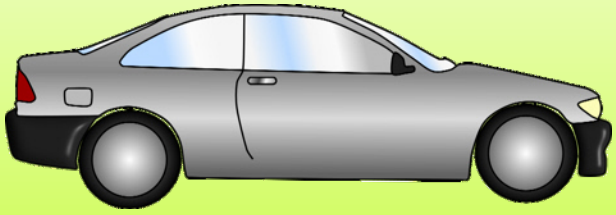


What do we use energy for?

Electricity to power our lights, computers and lots of things around the home.



Gas to heat our water and cook our food.



Petrol to power our cars.

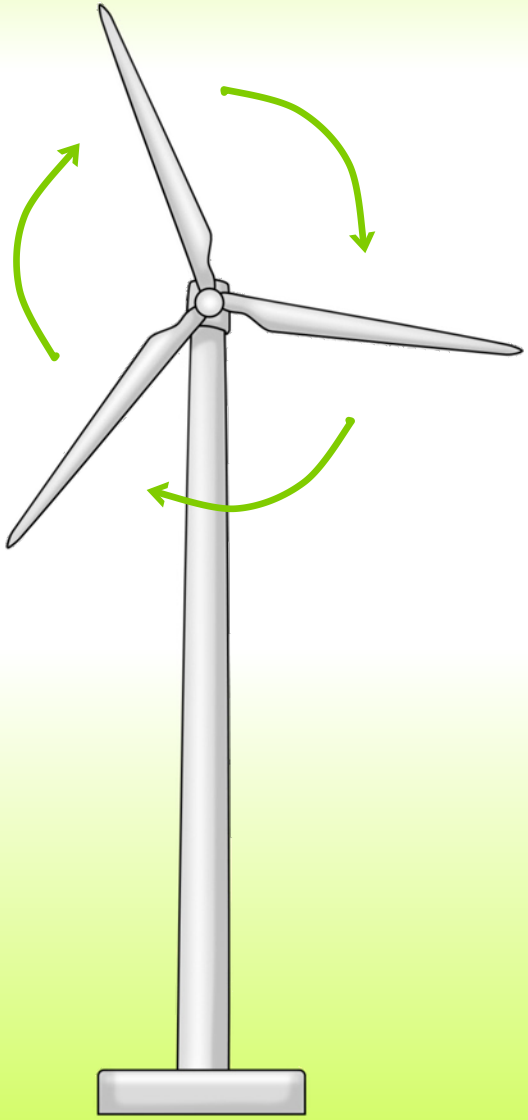
Why don't we use renewable energy all the time?

Renewable energy, like wind or sunshine, can't be stored to be used whenever we need it. If the wind doesn't blow, or the sun hides behind the clouds, there wouldn't be enough power for everyone. But nonrenewable resources, like coal or oil, can be stored to be used whenever we need them.

Nonrenewable energy is cheaper than renewable which means a lot of people could not afford to use only renewable energy.

Wind Energy

Renewable



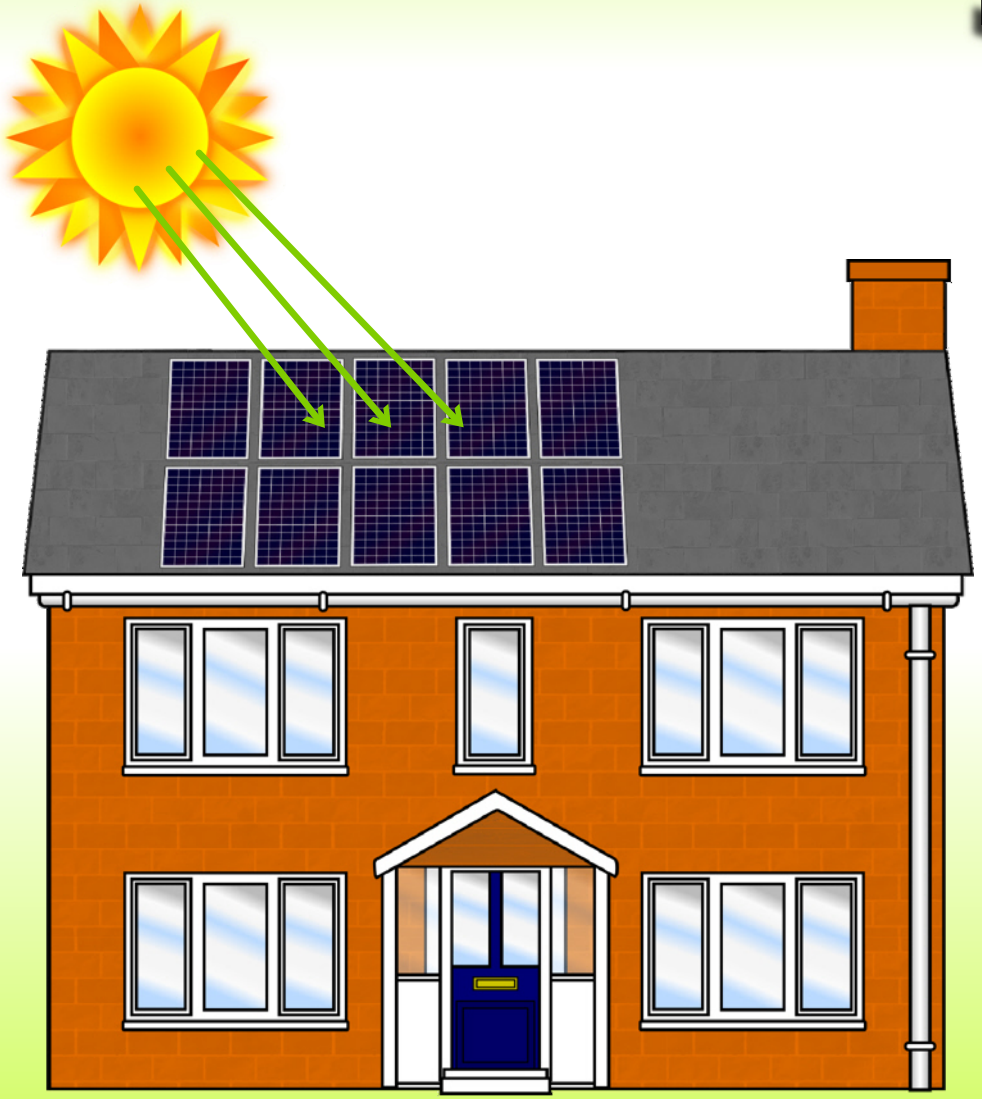
Giant wind turbines can be used to convert wind energy to electricity.

The wind blows the blades around and this movement can be converted into electrical power.

A collection of lots of wind turbines is called a **wind farm**.

Solar Energy

Renewable



Solar energy is energy that comes from the sun.

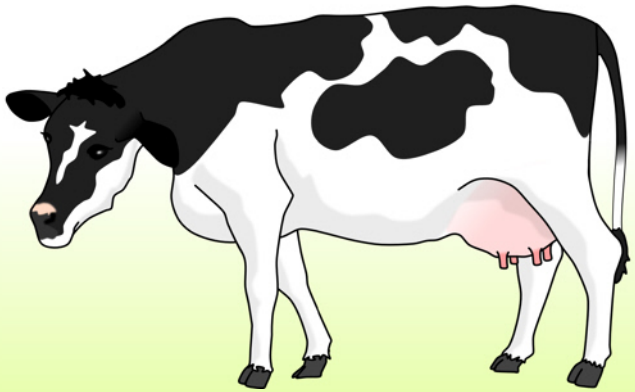
The sun can be used to give us heat energy.

Special solar panels can also convert sunlight into electricity.

Biomass Energy

Renewable

Biomass means ‘natural material’. Energy can be obtained by burning natural waste materials such as leftover wood from sawmills, leftover paper from paper mills or parts of crops, such as the stalks, that can’t be eaten.



We can even make energy by burning the gas that comes from cow manure!

Hydro Energy Renewable

Hydro energy is energy that comes from moving water.

Water that flows down large fast-flowing rivers can be used to spin turbines that generate electricity.

Out at sea, the movement of big waves can be used to harness power too.

Geothermal Energy

Renewable

The temperature underground always stays warm, even if it is very cold above.

We can collect the heat from underground and use it to heat our houses.

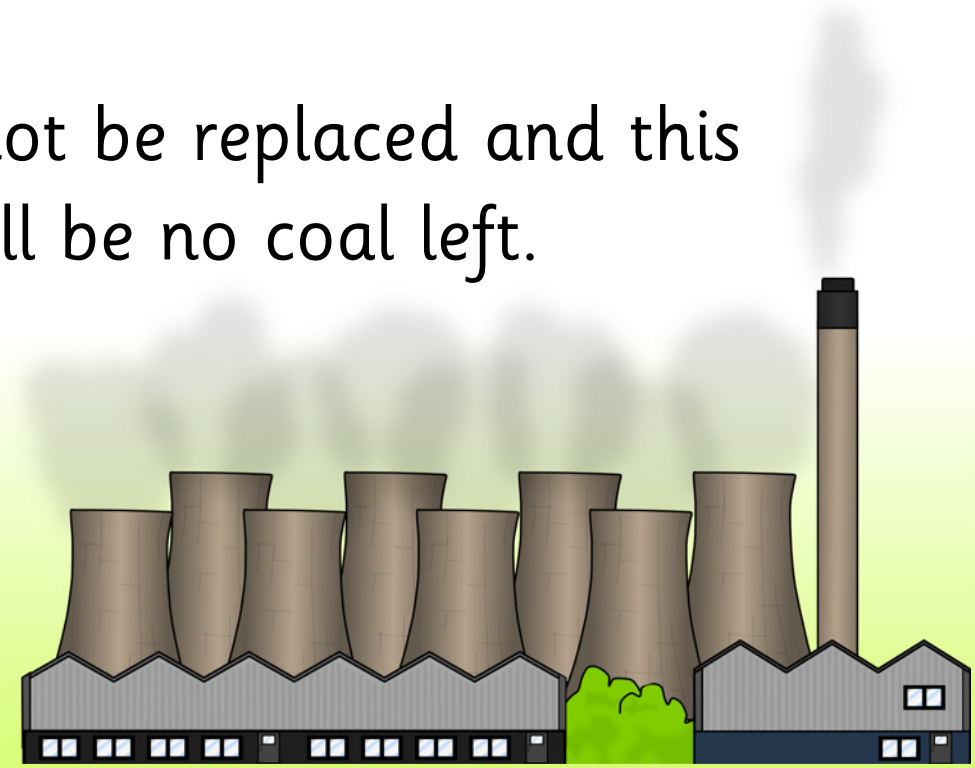
The lava from volcanoes show how hot it is deep underground!

Coal Energy Nonrenewable

Coal is mined from under the ground and burned in large power stations to produce electricity.

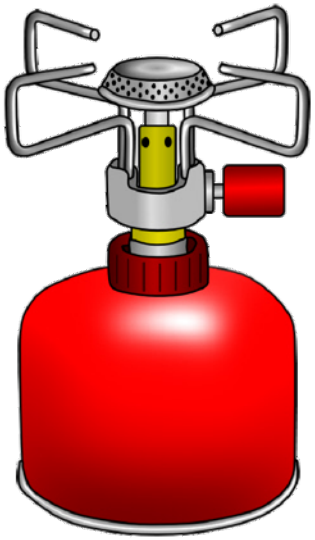
But the coal that we use cannot be replaced and this means that, one day, there will be no coal left.

Burning coal is also bad for the environment because lots of carbon dioxide gas is released.



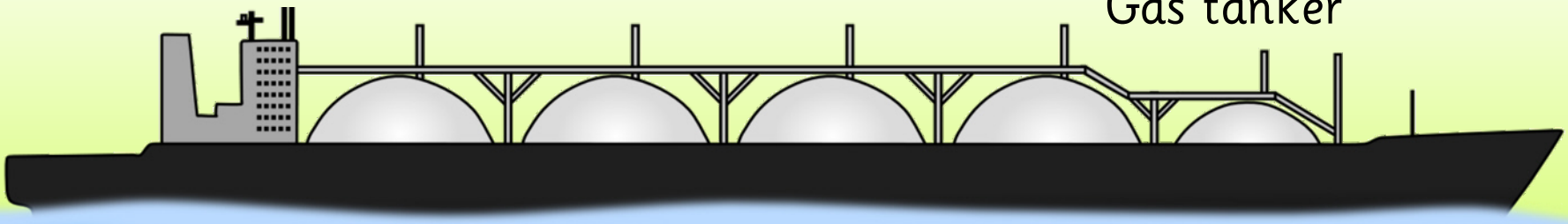
Gas Energy

Nonrenewable



Natural gas is found deep underground and is pumped into our homes where we burn it in a boiler to heat our water.

The gas that we pump from underground will one day run out and there will be none left to use.



Gas tanker

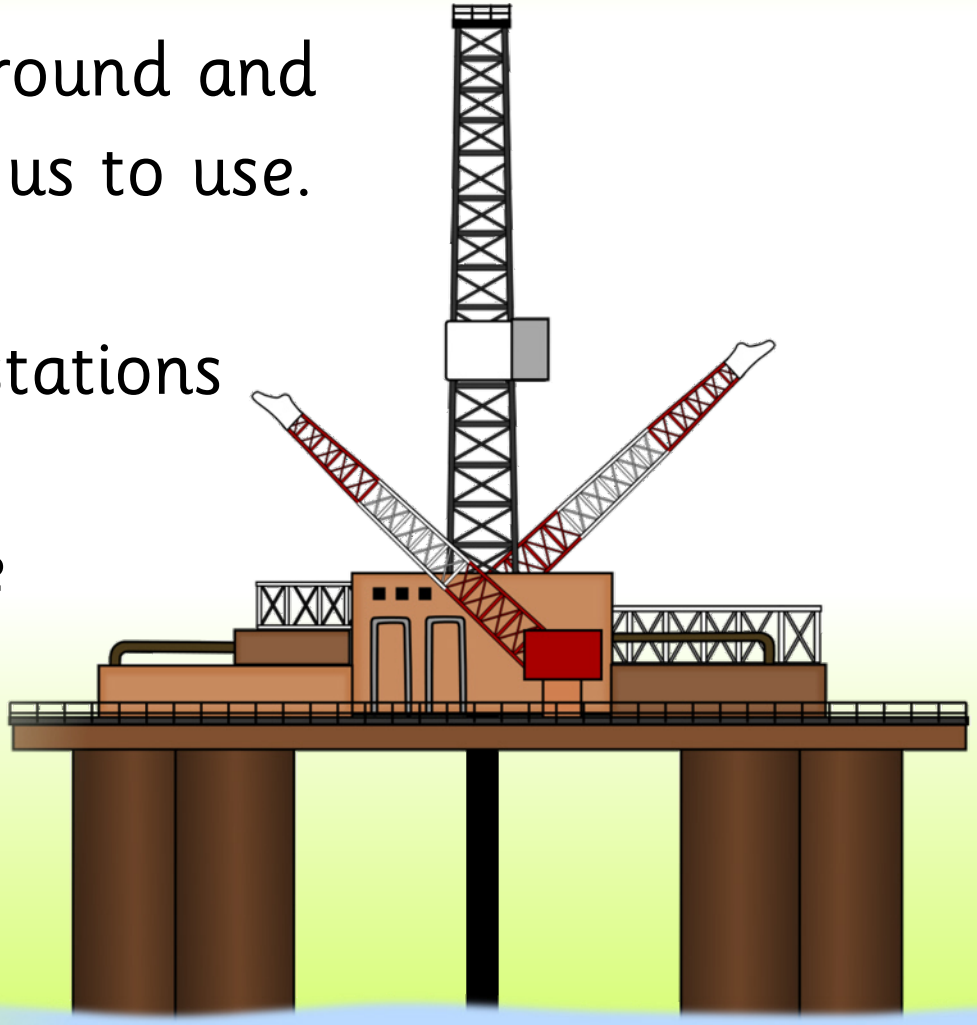
Oil Energy

Nonrenewable

Oil is found deep under the ground and pumped up to the surface for us to use.

Oil is burned at some power stations to make electricity and is also used to make petrol which we use in our cars.

If we keep on using oil there will eventually be none left.



Nuclear Energy

Nonrenewable (but very clean!)

Nuclear power stations use uranium as fuel to make electricity. Uranium is a natural resource taken from the ground which is why nuclear energy is not renewable.

But nuclear power doesn't produce much waste which means it is very clean.