

<p>Fossil fuels</p> <p>Solid: Coal</p> <p>Liquid: Oil</p> <p>Gas: Natural gas</p>	<p>Law of conservation of energy</p> <p>Energy cannot be <i>created</i> or <i>destroyed</i>, it can be <i>transformed</i> from one energy store to another.</p>	<p>Non-renewable fuels are fuels that cannot easily be replaced.</p> <p>Uranium and all fossil fuels are non-renewable.</p>
<p>Forms of energy</p> <p>Chemical energy</p> <p>Thermal (heat) Energy</p> <p>Nuclear energy (in atoms)</p> <p>Kinetic (movement) energy</p> <p>Elastic potential (strain) energy</p> <p>Gravitational potential energy</p> <p>Light energy</p> <p>Sound energy</p> <p>Electrical energy</p>	<p>Electric cars have batteries which can be recharged. They get their energy from power stations</p> <p>Energy: measured in joules (J)</p> <p>1 <i>kJ</i> = 1 <i>kilojoule</i> = 1 000 J</p> <p>1 MJ = 1 megajoule = 1 000 000 J</p> <p>Power: measured in watts (W)</p>	<p>Disadvantages of renewable fuels</p> <p>Biomass: needs land, must be re-planted</p> <p>Geothermal: hot rocks - only in certain places</p> <p>Solar: only when the sun is shining, expensive</p> <p>Wind: noisy, only when there is wind</p> <p>Waves: near coast, not in calm waters,</p> <p>Hydro-electric: needs mountains</p> <p>Tidal: needs estuaries, affects wildlife</p>
<p>Efficiency: how much of the input energy is useful?</p> <p>all energy input is either <i>useful</i> or <i>wasted</i>.</p> <p>Efficiency = $\frac{\text{useful energy}}{\text{total energy input}}$ (%)</p>	<p>Coal is made from the remains of long dead plants</p> <p>Oil and natural gas are made from the remains of long dead marine creatures.</p> <p>fossil fuels need millions of years at high temperature and pressure</p>	<p>Most UK power stations are fossil fuel.</p> <p>Fossil fuels produce carbon dioxide, a greenhouse gas \Rightarrow global warming.</p> <p>Coal: produces sulfur dioxide \Rightarrow acid rain</p> <p>Nuclear fuels produce dangerous radioactive waste which has to be carefully stored for a very long time.</p>