

## Energy Revision

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The sun is the source of almost all the energy on the Earth. There are only two types of energy that do not come from the sun. These are nuclear and geothermal energy. The rest come from the sun and all take different amounts of time for that energy to be stored.

Some types of energy take very little time to be replaced and these are said to be renewable. This means that they will never run out. Other types of energy take many millions of years to form. This means that they will become scarce and too expensive to find. There is only a certain amount that can be used. Once that amount is used there will be no more. These types of fuel are said to be non-renewable or finite.

Photovoltaic electricity is formed when sunlight hits solar cells. The sun's energy is converted into electricity. Space satellites have been powered using solar cells. Recently NASA has been experimenting with a solar powered aeroplane.

If you get into a car that has been sitting in the sun you will experience the heat energy of direct solar heat. Greenhouses are designed to use this heat. Solar collectors are used in many countries to trap this energy and to heat water.

The sun heats the earth and the reflected energy heats the air close to the earth. This air rises and cooler air from nearby areas rushes in to take its place. This moving air is known as wind. This energy has been used to sail ships, turn windmills that pump water or grind grain, or to generate electricity.

In the water cycle, the sun heats water on the Earth's surface. Some of this water evaporates, condenses to form clouds and eventually precipitates as rain or snow. As the water makes its way to the sea along rivers, its energy can be used to turn turbines that will generate hydroelectricity.

Plants trap the sun's energy in the process of photosynthesis. This energy can be used as food or fuel. A fuel is something that stores chemical energy. Wood releases this energy when it is burnt. Plant energy is called biomass.

Geothermal and nuclear energy do not get their energy from the sun. Most of their energy comes from atomic reactions within the Earth.

The most important form of energy used today comes from the remains of dead plants and animals that have formed over millions of years. These are known as the fossil fuels and the most common are peat, oil, coal and natural gas.

### Word box

aeroplane, atomic, biomass, coal, direct solar heat, expensive, finite, fossil fuels, geothermal, hydroelectricity, millions, natural gas, non-renewable, nuclear, peat, photovoltaic, renewable, satellites, sun, turbines, water cycle, wind, windmills, wood