Energy stores

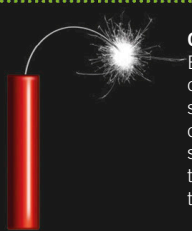
Energy isn't just stored in batteries—it can be stored in many different ways, from the kinetic energy stored in a moving car to the potential energy of a diver on a high diving board. When energy moves from one store to another, we say the energy is transferred.

Key facts

- ✓ **Energy can be stored in many different ways, including thermal energy, chemical energy, gravitational potential energy, kinetic energy, elastic energy, and nuclear energy.**
- ✓ **An energy transfer is the movement of energy from one store to another.**

Thermal energy
When energy is stored in hot objects, we call it heat energy or thermal energy. When you heat water to make tea or coffee, its store of thermal energy increases.

Kinetic energy
A moving object has kinetic energy. The faster it moves or the greater its mass, the greater its store of kinetic energy.



Chemical energy
Energy stored in chemical bonds is called chemical energy. The energy stored in batteries and food is stored as chemical energy. Explosives and fuels store large amounts of chemical energy that transfers to thermal energy when they burn.

Elastic potential energy
Stretch a rubber band or squeeze a spring and it will store elastic potential energy until you release it. Elastic potential energy can also be stored in objects when they're squashed or twisted.

Nuclear energy
The energy stored inside atoms is called nuclear energy or atomic energy. This store of energy powers nuclear reactors, nuclear bombs, and the Sun.

Gravitational potential energy
An object or a person raised to a high position stores gravitational potential energy (GPE). When a diver falls, their GPE is transferred to kinetic energy.

Hydroelectric power

Hydroelectric power stations use gravitational potential energy to make electricity. A dam is built to hold back a river in a valley, forming a deep artificial lake. Water from the lake flows downhill through pipes inside the dam, turning machines called turbines, which drive electricity generators. Gravitational potential energy transfers to kinetic energy in the turbines and ultimately to electrical energy, which is used to power homes.