

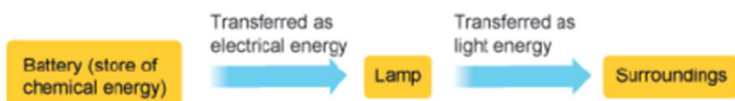
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Energy Transfer

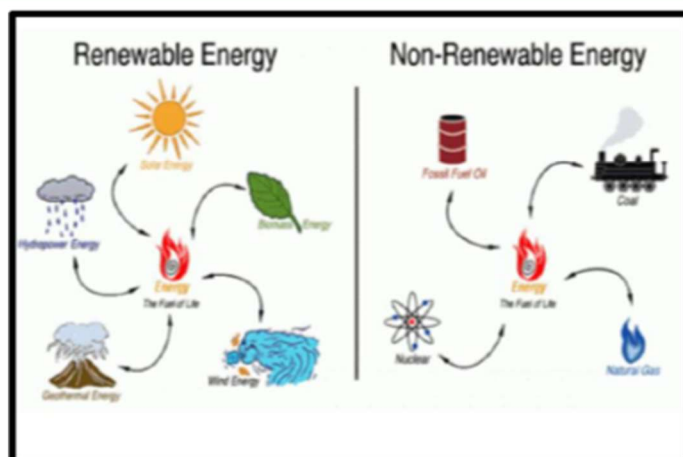
An energy transfer is when energy changes from one store to another. VERY IMPORTANTLY, the **total amount of energy does not change**. Energy cannot be created or destroyed. All that can be changed is how it is stored. This idea is called **the law of conservation of energy**.

Energy is transferred, so it changes store, in loads of situations. Examples to know:

- When a fuel is burned, the chemical potential energy in the fuel ends up stored as thermal energy in the surroundings;
- When an object falls off a shelf, the gravitational potential energy it stores is transferred (changed) to kinetic energy while it is falling.
- When the object hits the floor, all the gravitational potential energy it had to start with ends up stored as thermal energy in the surroundings.
- When a spring that's been stretched is released, the elastic potential energy it stored is transferred to kinetic energy then to thermal energy.



This shows how energy changes where it is stored twice while you use a light bulb (lamp):
From chemical potential energy to electrical energy to heat (thermal) energy in the surroundings.



Type of energy	Description
Kinetic 	The energy in moving objects
Chemical 	When a substance undergoes a chemical reaction
Magnetic 	When 2 objects attract or repel
Elastic potential 	When an object is stretched or squashed
Light 	From a bright object (not stored)
Thermal (Internal) 	The heat stored in an object
Gravitational potential 	When an object is raised to a height
Electrostatic (electrical) 	Allows an electric current to flow
Nuclear 	Energy stored in an atom (not needed till GCSE)
Sound 	From a vibrating object (not stored)