

Electrical Power

Electrical Power

We have seen how energy changes occur in various processes.

Electrical devices are designed to convert electrical energy into other forms of energy.

What energy changes are going on in the following examples?











Electrical Power

Power is the *rate* at which energy changes from one form to another.

The more powerful a device is, the faster the rate at which it transforms energy.

Power is measured in **Watts (W)**.

Electrical Power

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- 12W kettle
- 60W light bulb
- 1W torch
- 10kW cooker

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1 Watt means that 1 Joule of energy is being transferred every second.

$$(1 \text{ W} = 1 \text{ J/s})$$

$$P = \frac{E}{t}$$

P = Power of device (Watts, W)

E = Energy transferred (Joules, J)

t = time taken (seconds, s)