

Electrical Energy

To calculate the quantity of electrical energy converted by an appliance we must know

- i) the _____ of the appliance
- ii) the _____ for which it is switched on.

We can then use the equation

$$\text{Energy converted} = \underline{\hspace{10cm}}$$

$$E = \underline{\hspace{5cm}}$$

If the power is in *Watts* and the time is in *seconds* then this equation will give us the number of _____ of energy converted.

In other words, 1 Watt means 1 _____.

In practice the quantities of electrical energy are large and a *larger unit of energy* is more suitable.

The unit is called the _____, kWh.

1 kWh is the quantity of energy converted by a _____

Experiment: Using an Electrical Energy Meter (“compteur EDF”)

The energy converted by an appliance is measured by an “energy meter”.

One revolution of the disc inside the meter corresponds to _____Wh or _____Ws (J) of energy converted.

Various appliances were connected to the meter and the time taken for one revolution of the disc was measured. These times were used to calculate the power of the appliance. The results for the power were compared with the figures written on the appliance by the manufacturers (the *nominal* power).

Results

Appliance	Time for one rev /s	Measured power /W	Nominal power /W

The power was calculated using the equation $p = E/t$ where E represents the energy corresponding to one revolution of the disc.

Conclusion
