GENERATING ELECTRICITY

Project Sheet 2

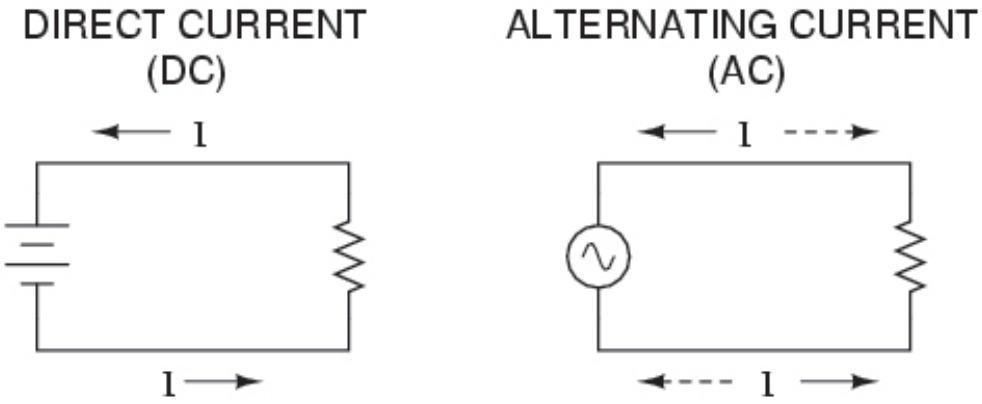
Electrical Currents

We now know that a single wire passing through a magnetic field can produce a small pulse of electricity, but on such a small scale it would be impossible to create enough energy to power even a small light bulb.

At power stations, this basic concept is taken one step further by using a generator – a rotating magnets field passes through coils of wire at high speed, producing a flow of electricity.

The continuous onward movement of electrical energy around the loop is called a current. The electricity flows backwards and forwards with every complete revolution of the coil – this is known as Alternating Current (AC).

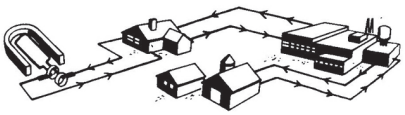
When a current of electricity flows backwards once, it is called a cycle, and the number of cycles per second is known as frequency. In Queensland, the standard frequency is around 50 cycles per second.



A current that flows continuously in one direction is called a 'Direct Current' (DC). An example of a direct current is the electricity supplied by batteries.

Electricity always flows in a circuit. We can compare it to water flowing through a pipe. If you stopped the flow with a plug at the end of the pipe the water will stop flowing, but by constructing a unit with a water pump to force the flow of water through a closed system of pipes, you create a path or circuit for the flow of water that can run a hydraulic motor.

Generators work like pumps, creating pressure (voltage) to keep the electrons moving through an electric wire to our homes and workplaces before returning to the generator.



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