



## Electricity and Your Home

Now that we have a better understanding of how electricity is made and how it moves through conductors, we can take a look at how it actually gets to our homes.

Because electricity cannot be stored easily, power stations run

24 hours a day to keep producing the electricity that then travels through a complicated network of overhead lines and underground cables to our homes.



## The Journey to Your Home

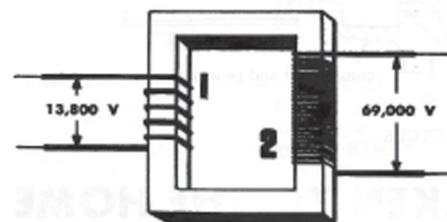
When the electricity leaves the power station it has to travel long distances and be distributed to many different users. For the electricity to be able to do this, it must be given a large “push”. The size of this “push” is known as voltage.

When the electricity leaves the power station, it flows through wires (conductors) to a special device called a step-up transformer. This transformer increases the voltage or “push” to 275,000 volts.

A simple transformer is made of a soft iron core and two coils of wire. When electricity from the generator flows through the small coil, the core is magnetised and produces an AC current.

The amount of voltage produced in the larger coil depends on the number of windings compared to the smaller coil. If the larger coil has five times as many turns, the voltage will be five times as great.

The electricity then travels along heavy wires suspended between large towers known as the high voltage transmission network to a substation transformer where voltage is lowered to between 2,000 and 11,000 volts.



Once the electricity reaches a town or city, the voltage is reduced again by a step-down transformer. The voltage is now between 415 and 240 volts, ready for local distribution companies to deliver electricity from the system to our homes using a low-voltage network - the poles and wires you see along your street.

Finally, the electricity comes into our homes through a service box with a meter that indicates how much energy we use.