

Science Read

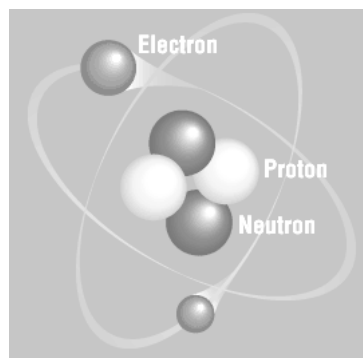
This article is about:

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Energy and Electricity

What is electricity?

Electricity is a form of energy. Electricity begins with the smallest of all particles, the atom. Atoms, although too small for our eyes to see, are in everything. Atoms also contain protons and neutrons in their nucleus (the centre of the atom). Electrons are contained around the protons and neutrons, and move quickly around them. This quick movement is what makes the energy in electricity.



Types of electricity

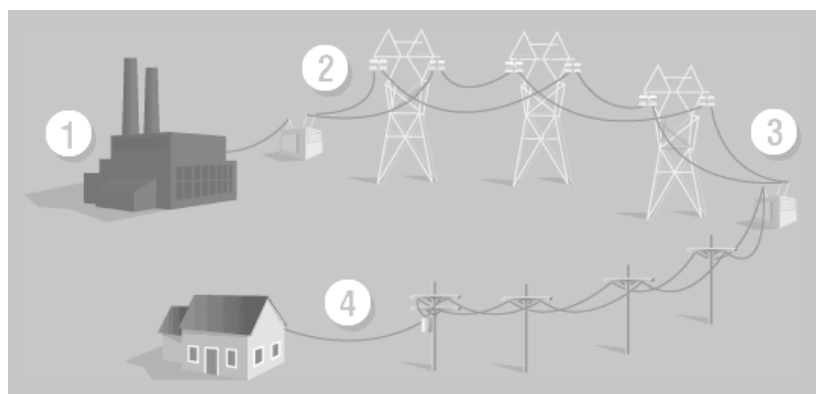
Electricity can come in many different forms. For instance, think of the electricity that is produced when someone receives a shock, or when laundry gets stuck together... this is static electricity, and is the same type of electricity that causes lightning when there is a thunderstorm.

The type of energy that we use in our homes, schools, and businesses is different than static electricity. This type of electricity is called current electricity. Current electricity is a stream of

electrons flowing through a conductor. The way we get the electricity in our homes is from current electricity. Power plants use electromagnets inside copper wire (a conductor) to produce the electricity that is sent through wires to our homes, schools, and businesses.

How is electricity transmitted to our homes?

Every time you turn on a light switch, or your television, electricity is there working for you. But did you ever wonder how this energy gets to your house whenever you need it? Did you ever notice all the poles and wires outside near your street? Do you know what these are for? These poles and wires are the electrical transmission and distribution system. In other words, these wires and poles are the way that energy can come into our homes so we can use it. Here's how it works:



1. First, the electricity needs to be made somewhere. Power plants make electricity by using generators. These generators use coal, natural gas, water or wind to create electricity.

2. Once the electricity is created, it is sent through a transformer, which increases the voltage so that it can be sent long distances. The transformer then sends it over high-voltage transmission lines, which run all through the country.

3. Once the electricity nears its destination, it goes through a substation that will return the electricity to low-voltage electricity so that it can be sent over the smaller power lines that run to homes, schools, and businesses. These wires further reduce the voltage so that by the time it reaches our homes, schools, or businesses it is safe to use.

4. The electricity enters the building in the service panel in the basement or garage. This panel uses breakers or fuses to protect the wires from being overloaded. The electricity then travels through the wires in your home to the outlets and switches so that there is always electricity for you when you need it!

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