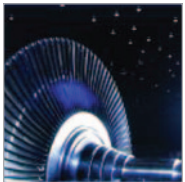


How Electricity is Produced



1

Most of our electricity is generated by turbine-generators in large power plants.



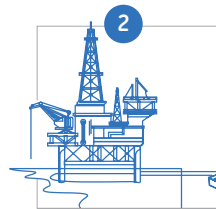
To produce electricity, a turbine-generator converts mechanical energy into electrical energy. Mechanical

energy is created by moving steam or gas across the blades of a turbine which is revolving approximately 3600 times per minute.



The spinning turbine is connected to a metal rod in a generator that turns a large magnet surrounded

by coils of copper wire. The spinning magnet creates a powerful magnetic field around the coils. The magnetic field lines up the electrons in the copper coils and starts them moving. The movement of these charged electrons through a wire is electricity.



2

The energy for heating this gas or the water to create the steam comes from burning fuels such as coal, oil or natural gas. Other turbines can be fueled by nuclear energy, falling water (for hydro generation), solar power, wind power... or even garbage and agricultural waste products.

Thick wires carry the electric current from the generator to a transformer, which increases the pressure or voltage of the current. The electricity leaves the power plant at 500,000 volts or higher, traveling many miles through high voltage transmission lines.



3



6

Electricity enters your house through a meter which measures the amount of electricity you use... passes

through an electrical control panel which controls its distribution through wires in the walls... and finally to lights, wall switches and outlets. When you "switch on" or "plug in" an appliance, you complete the circuit from the power plant and electricity operates the lights and appliances in your home.

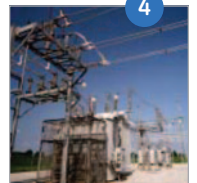


5

In your neighborhood, smaller transformers mounted on poles or concrete pads on the ground further reduce the electrical voltage to 110 – 220 volts

which can be used safely in your house.

When the electricity arrives where it is needed, it passes through a substation where other transformers decrease the voltage to levels that can be used by factories, shopping malls and schools. Distribution lines – mounted on poles or buried underground – carry electricity from the substation to where it is used.



4