Where does electricity come from?

The power plant sends electricity through a grid of power lines. First, transmission wires on tall towers carry electricity to places called substations in different neighborhoods. These substations contain equipment that reduces electricity's voltage so it can travel on smaller power lines that branch out down streets, either on overhead power lines or lines that are buried underground.

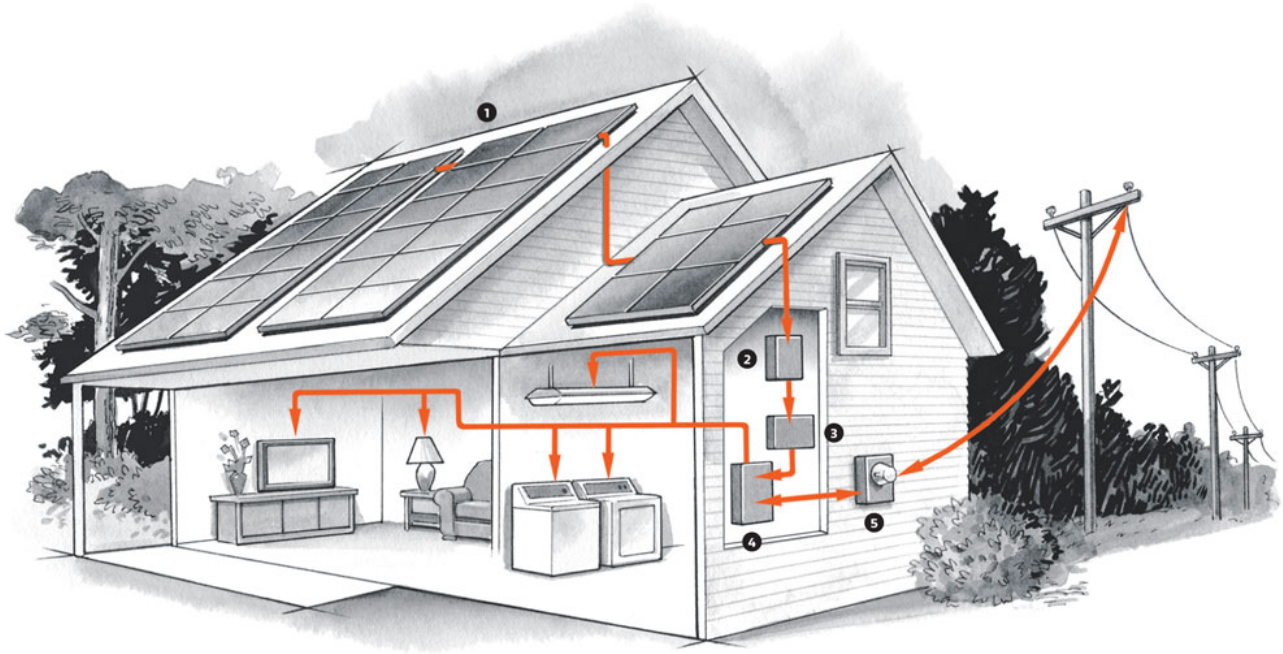
Overhead and underground power lines carry electricity to transformers on poles or on the ground, where the voltage is reduced again so people can use it safely.

From transformers, electricity travels into buildings through wires called service drops. These connect to a meter box, which measures how much electricity is being used, and to all the wires that run inside walls to outlets and switches.

When you plug something in and turn it on you complete electricity's circuit. Electricity flows from the wires in the wall, through the plug's metal prongs, and through the appliance cord to the motor of the appliance. Then it flows back through the appliance cord to the outlet and out to the wires and into the grid again.

Ice Storm March 2010

http://www.newfoundlandpower.com/Outages/March2010IceStorm.aspx

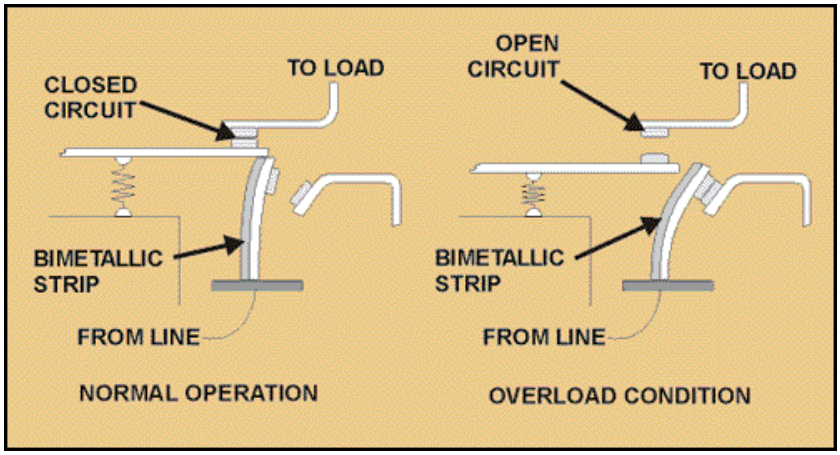


4 wires from meter...

Circuit breakers & Fuses...

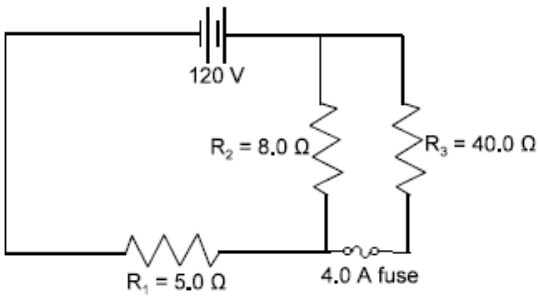
-protects against overheating and stops the flow of unsafe currents
-circuit breakers contain a bimetallic strip that can be reset
-fuses contain a thin strip of metal that melts leaving an open circuit so fuses must be replaced

Circuit Breakers...



Value

5% 52.(c) In the circuit shown:



i) calculate the total resistance.

ii) calculate the voltage across resistor 2.

iii) determine whether the fuse will blow.