

## Science Reading for Success Passage One Energy Sources



Source: [http://www.eia.gov/kids/energy.cfm?page=about\\_home-basics](http://www.eia.gov/kids/energy.cfm?page=about_home-basics)

### Energy Sources Can be Categorized As Renewable or Nonrenewable

When we use electricity in our home, the electrical power was probably generated by burning coal, by a nuclear reaction, or by a hydroelectric plant at a dam. Therefore, coal, nuclear and hydro are called energy sources. When we fill up a gas tank, the source might be petroleum or ethanol made by growing and processing corn.

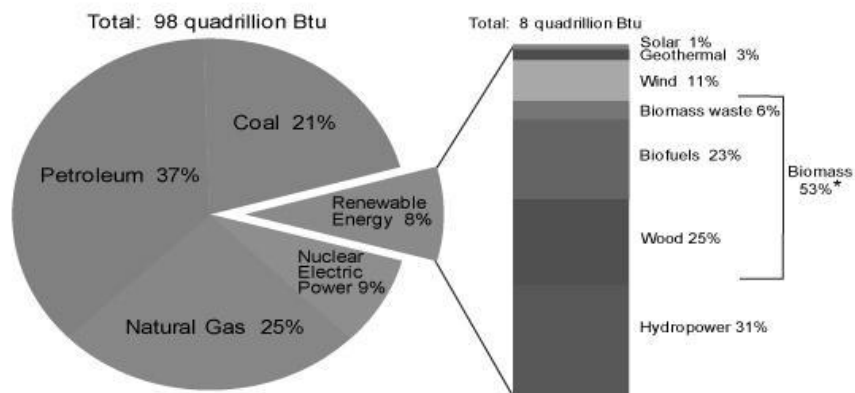
Energy sources are divided into two groups — renewable (an energy source that can be easily replenished) and nonrenewable (an energy source that we are using up and cannot recreate). Renewable and nonrenewable energy sources can be used to produce secondary energy sources including electricity and hydrogen.

### **Renewable Energy**

Renewable energy sources include:

- Solar energy from the sun, which can be turned into electricity and heat
- Wind
- Geothermal energy from heat inside the Earth
- Biomass from plants, which includes firewood from trees, ethanol from corn, and biodiesel from vegetable oil
- Hydropower from hydroturbines at a dam

U.S. Energy Consumption by Energy Source, 2010



\* Note: Sum of biomass components does not equal 53% due to independent rounding.  
Source: U.S. Energy Information Administration, Monthly Energy Review, Table 10.1 (June 2011), preliminary 2010 data.

## ***Nonrenewable Energy***

We get most of our energy from nonrenewable energy sources, which include the fossil fuels — oil, natural gas, and coal. They're called fossil fuels because they were formed over millions and millions of years by the action of heat from the Earth's core and pressure from rock and soil on the remains (or "fossils") of dead plants and creatures like microscopic diatoms. Another nonrenewable energy source is the element uranium, whose atoms we split (through a process called nuclear fission) to create heat and ultimately electricity.

We use renewable and nonrenewable energy sources to generate the electricity we need for our homes, businesses, schools, and factories. Electricity "energizes" our computers, lights, refrigerators, washing machines, and air conditioners, to name only a few uses.

Most of the gasoline used in our cars and motorcycles and the diesel fuel used in our trucks are made from petroleum oil, a nonrenewable resource. Natural gas, used to heat homes, dry clothes, and cook food, is nonrenewable. The propane that fuels our outdoor grills is made from oil and natural gas, both nonrenewable.

The chart above shows what energy sources the United States used in 2010. Nonrenewable energy sources accounted for 92% of all energy used in the Nation. Biomass, the largest renewable source, accounted for over half of all renewable energy and 4% of total energy consumption.

### **Questions**

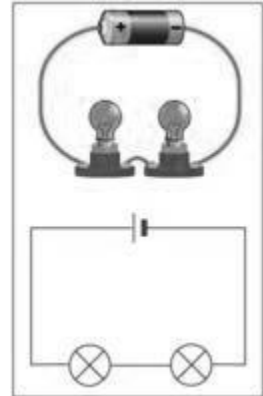
1. Electricity is a secondary energy resource because.....
  - A. it is made from another energy source.
  - B. it is the second most popular form of energy.
  - C. it can be transformed into other types of energy such as light in a light bulb.
  - D. it is not truly a form of energy.
2. According to the circle graph in the reading, which of the following statements is true?
  - A. Most of the energy used by people in the United States is nonrenewable.
  - B. Solar energy is most often used in southern states such as Florida.
  - C. Nuclear energy is the cleanest form of energy.
  - D. Hydropower is the second most common type of renewable energy.
3. Fossil fuels.....
  - A. are made from fossils imprinted in rocks.
  - B. are formed through heat and pressure.
  - C. are important for hydroelectric cars.
  - D. can easily be replenished.

**Science Reading for Success Passage 2**  
**Electrical Circuits**  
**By Brandi Waters (edhelper.com)**



<sup>1</sup> You have already learned about electricity. You know that electricity is a stream of electrons moving from atom to atom. Electrons have a negative charge. They move toward atoms with a positive charge. When electrons move, electricity is made.

<sup>2</sup> Electrons cannot jump across a distance. There must be a path for electrons to follow. The path must be a series of atoms that can accept an electron. We call this path a circuit. People have learned how to build and manipulate circuits to move electricity. We use circuits to bring electricity into our homes. We use circuits to move electricity through our computers, telephones, toys, and even our cars.



<sup>3</sup> Every time you flip a light switch in your house, you are using a circuit. The light bulb glows when electrons are flowing through it. The light bulb only glows when the switch is on. This is because the circuit is complete when the switch is on. Wiring in your house forms a path for electricity to flow. The wires are attached to the light bulb. The wires are also connected to the switch on the wall. When the switch is turned off, there is a break in the circuit. When the circuit is broken, electricity cannot flow through the light bulb. When the switch is turned on, the switch forms a bridge that completes the circuit. Electrons can flow through the wires, through the switch, and through the light bulb. The light bulb glows and lights your room. Circuits help people control when and where electricity flows.

<p>1. Electricity is _____.</p> <p><input type="radio"/> A Negatively charged</p> <p><input type="radio"/> B A stream of electrons</p> <p><input type="radio"/> C Made when electrons move from atom to atom</p> <p><input type="radio"/> D All of the above</p>	<p>2. What is used to make the circuits, or paths that electricity can flow through, in our homes?</p> <p><input type="radio"/> A Switches</p> <p><input type="radio"/> B Light bulbs</p> <p><input type="radio"/> C Electrons</p> <p><input type="radio"/> D Wires</p>
<p>3. People use electrical circuits to _____.</p> <p><input type="radio"/> A Control where electricity flows and when it is flowing</p> <p><input type="radio"/> B Control how much electricity is made</p> <p><input type="radio"/> C Make electrons jump to positively charged atoms</p> <p><input type="radio"/> D All of the above</p>	<p>4. When a switch in an electrical circuit is turned off, _____.</p> <p>_____</p>