

# Matter and Energy: What is energy?

By Encyclopaedia Britannica, adapted by Newsela staff on 04.18.17

Word Count **527**

Level **560L**



Wind is a source of energy. Turbines like these capture the wind's energy and turn it into another form of energy, such as electricity. Photo from: Wikimedia Commons.

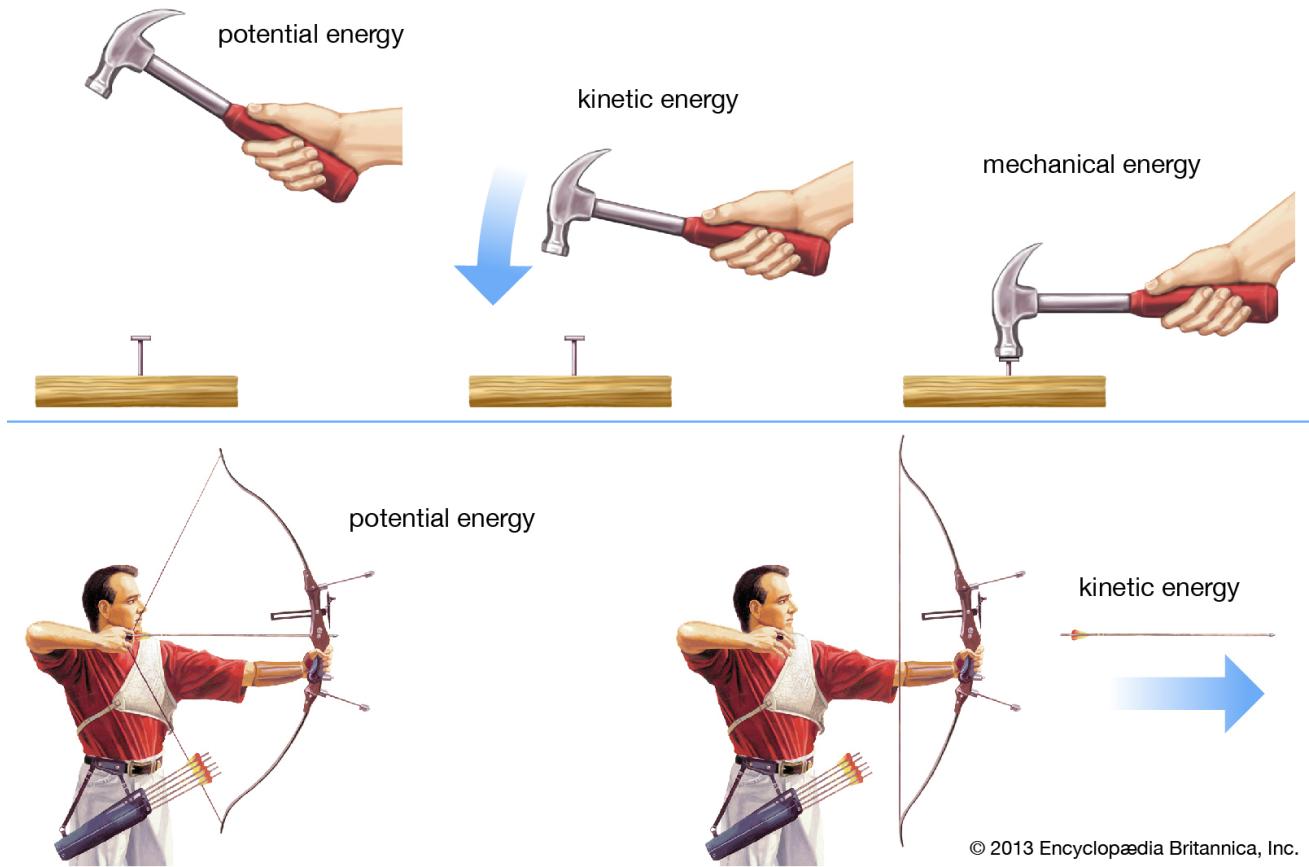
Energy is another word for power. It allows things to move. Energy also makes machines work and helps living things grow.

## Electricity And Other Forms Of Energy

Energy exists in many different forms. Animals get energy from eating food. Some machines get power from electricity, which is a form of energy. Heat and light are also forms of energy.

One form of energy can be turned into another. For example, a battery contains chemical energy. This is a kind of stored energy. The battery turns the stored energy into electrical energy. Electrical energy powers appliances in our homes, such as lamps and microwaves.

## Two Types: Potential Energy And Kinetic Energy

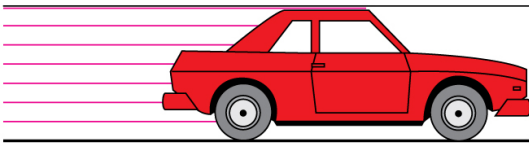


All energy is one of two types. It is either potential energy or kinetic energy. Potential energy is stored energy. For example, the chemical energy of food is stored energy. When people eat, they change it. They turn the stored energy into moving energy.

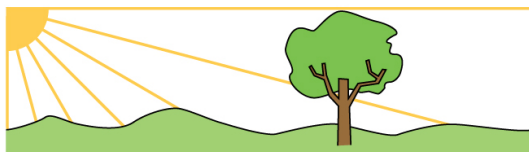
Moving energy is also called kinetic energy. All moving objects have kinetic energy.

## One Law About Energy

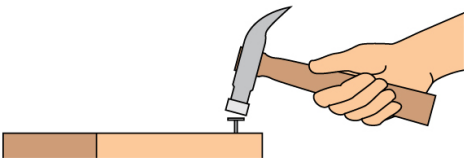
### Changing forms of energy



An automobile engine changes chemical energy to mechanical and heat energy.



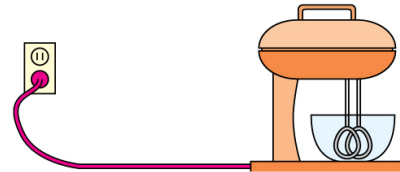
A tree changes radiant energy to chemical energy.



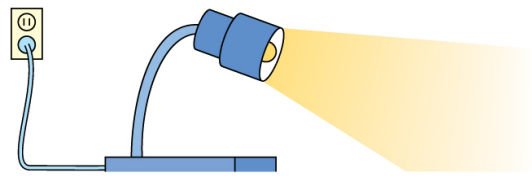
Hammering a nail changes mechanical energy to deformation and heat energy.



A thermonuclear reaction changes nuclear energy to radiant and heat energy.



An electric mixer changes electrical energy to mechanical and heat energy.



A lamp changes electrical energy to radiant and heat energy.

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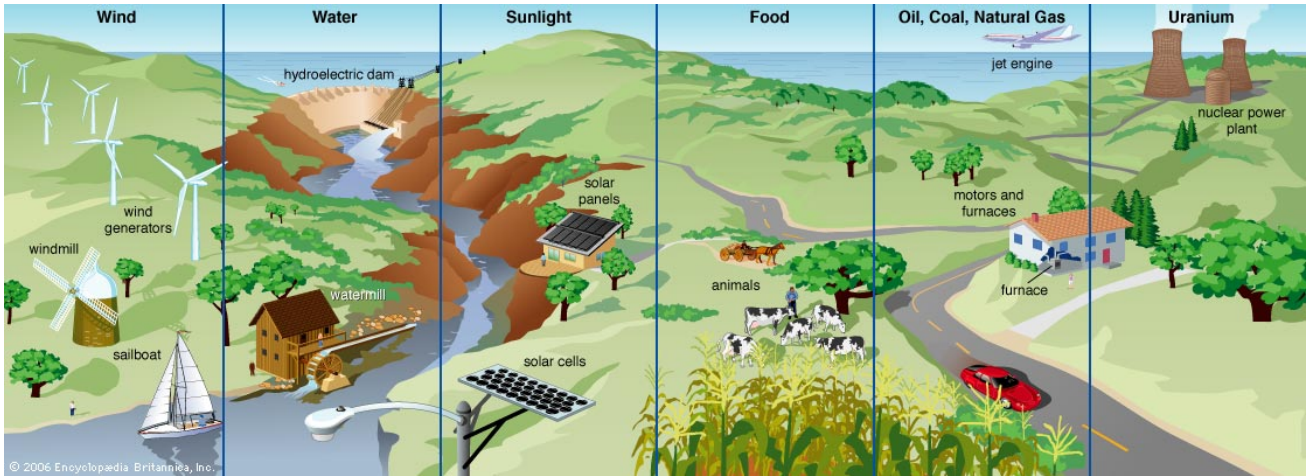
A scientific law is a fact about the universe. It is based on many experiments. One law about energy is called the law of conservation of energy. This law says that energy cannot be made or destroyed. That means energy cannot appear out of nowhere.

Sometimes people that say energy is "used" to power something. That does not mean the energy is used up, however. It just means the energy is changed. It changes from one form to another. For example, food has chemical energy. When people eat, they change this energy. They turn the chemical energy into heat and kinetic energy. Heat energy warms them up. Kinetic energy lets them move.

### Where Energy Comes From

Earth gets most of its energy from the sun. The sun makes plants grow. The plants feed animals and people.

When plants die, they break down. After a very long time in the ground, they become fossil fuels. Fossil fuels are fuels like oil, natural gas and coal. They are used to heat homes and power cars.



Burning fossil fuels makes greenhouse gases. These cause global warming. Global warming is increasing the Earth's temperature. Scientists say global warming is bad for the planet. Now scientists want to discover new ways to make energy.

One way to make energy is to use wind. Wind can turn machines called wind turbines. These machines make electricity. Another way to make energy is to use the sun. Devices called solar panels can save heat from the sun. This heat can be used to keep houses warm. Energy from the sun is called solar energy.