

# Types of Energy

There are many types of energy. Often people will start with one type of energy and then change it into other, more usable, types.

## 1. Chemical

Chemical energy is stored in the bonds of molecules. This is a form of potential energy until the bonds are broken. Fossil fuels and biomass store chemical energy. Products that contain chemical energy include: TNT, baking soda, and a match.



## 2. Electrical

The movement of electrically charged particles produces electrical energy. Lightning, and static electricity are examples of electrical energy that occur naturally. (Static electricity is what you see when your clothes stick together.) Science hasn't found a way to use natural forms of electrical energy, like lightning. Instead, we use different energy sources to create electrical energy by using generators and turbines.



## 3. Gravitational

Gravitational energy is the attraction between two objects. The moon in its orbit around the earth, the earth in its orbit around the sun, the ocean's tides, your ability to stay on the ground instead of floating into the atmosphere are all examples of gravitational energy. Research is going on in this field. Waves may be harnessed in the future to provide electrical energy.



## 4. Heat



Heat energy is created in the movement of atoms. Boiling water, burning wood, and rubbing your hands together really fast are all examples of heat energy. Geothermal, and passive solar are sources of heat energy, but biomass (a type of chemical energy) can be burned to produce heat energy.

## 5. Light

Light energy is the movement of photons. (The light spectrum of electromagnetic waves shows light energy.) All life on earth is dependent on light energy from the sun. Examples of light energy include radio waves (AM, FM, TV), microwaves, X-rays, and plant growth. Active solar energy uses photovoltaic panels and light to turn light energy into chemical energy.



## 6. Magnetic

Magnetic energy is the attraction of objects made of iron. Medical equipment (MRI scanning), compass, refrigerator magnets are all examples of magnetic energy. Any type of energy source that uses a generator in the process to make electricity uses magnetic energy.

## 7. Mechanical



Mechanical energy is the movement of machine parts. Wind-up toys, grandfather clocks, and pogo sticks are examples of mechanical energy. Wind power uses mechanical energy to help create electricity.

## 8. Nuclear

Nuclear energy is the energy stored within atoms. Nuclear energy is unusual in that it can give off energy in the form of light or heat, but it is the change in the atom's makeup that produces the energy. Submarines, power plants, and smoke detectors all use nuclear energy. Nuclear power plants use uranium, a radioactive element, to create electricity.



## 9. Sound



Sound energy is the movement molecules in the air that produces vibrations. Alarms, music, speech, ultrasound medical equipment all use sound energy. VCR tapes change sound energy into electrical energy. The electrical energy records the sound using magnetic tape. Speakers read the magnetic tape and change it back into sound.

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