

many years, wind mills were used to pump out the underground water and to grind grains.

(10) Sound energy: A vibrating body possesses sound energy. It is sensed by our ears. When the disturbance produced by a vibrating body in the atmospheric air layers reaches our ears and produces vibrations in the ear-membrane, sound is heard.

(11) Magnetic energy: The energy possessed by a magnet due to which it can attract iron filings, is called magnetic, energy. An electromagnet has magnetic energy.

(12) Mechanical energy: The energy possessed by a body due to its state of rest or of motion, is called mechanical energy. It is the sum of potential energy and kinetic energy. A body at a height, a moving body, a stretched bow, etc. have mechanical energy.

CONVERSION OF ONE FORM OF ENERGY INTO THE OTHER FORM

In our daily life, we require energy in various forms. Since one form of energy can be converted into other forms, we can obtain energy in the required form from the form of energy available to us.

Now let us consider some more examples of conversion of one form of energy into another form.

(1) Mechanical energy to electrical energy

The water stored in the reservoir of a dam has potential energy. When water flows down, its potential energy decreases and kinetic energy increases. If the falling water is made to rotate a turbine near the bottom of the dam, the kinetic energy of water is transferred to the turbine in the form of rotational kinetic energy due to which it rotates.

(2) Electrical energy to mechanical energy

In an electric motor, when an electric current is passed in a coil, freely suspended (or pivoted) in a magnetic field, a torque acts on the coil due to which it rotates. The shaft attached to the coil also rotates with it.

(3) Electrical energy to heat energy

In electric appliances such as heater, oven, geyser, toaster, etc. electrical energy changes into heat energy when a current changes into heat energy when a current passes through their resistance wire (or filament).

(4) Heat energy to electrical energy

In a thermocouple, when two junctions of two different metals are kept at different temperatures (one junction is kept hot, while the other cold), a current flows in the thermocouple. Thus, a thermocouple changes the heat energy supplied at the hot junction into electrical energy.

(5) Electrical energy to sound energy

A loudspeaker when in use, receives electrical energy in form of electrical signals from the microphone and changes it into sound energy. In an electric bell when an electric current is passed, the electrical energy changes into sound energy.

(6) Sound energy to electrical energy

A microphone converts the sound energy into electrical energy in form of varying electric signals.

(7) Electrical energy to chemical energy

While charging a battery, electrical energy changes into the chemical energy of the cell.

(8) Chemical energy to electrical energy

When current is drawn from an electric cell, the chemical energy stored in it changes into electrical energy.

(9) Chemical energy to light energy

When a candle burns, it gives light. Similarly in a kerosene lamp when the oil soaked in its wick burns, the chemical energy changes into light energy.

(10) Light energy to chemical energy

The light energy from the Sun is absorbed by the green plants and they change it in the form of chemical energy (food) during the process of photosynthesis.

(11) Electrical energy to light energy

When an electric bulb glows on passing an electric current through it, the electrical energy changes into heat and light energies.

(12) Light energy to electrical energy: In a photoelectric cell, light energy gets converted into electrical energy.

In a solar cell, light (or solar) energy changes into electrical energy.

(13) Heat energy to mechanical energy

In a steam engine, the heat energy of steam changes into the kinetic energy of piston.

(14) Chemical energy to heat energy

When fuel such as wood, coal, bio-gas, etc. burns, the chemical energy