

Basic Energy Notes

Energy: the ability to cause a change in something or to do work ($w = f \cdot d$).
The Law Of Conservation Of Energy

•Energy can't be created or destroyed but it can be changed from one type of energy to another. The total amount of energy in a system remains constant.

Potential Energy: Energy that is stored. It's ready to do work or cause a change, but is not doing so at the time.

Gravitational: based on the mass and height above the ground of object. An object has more gravitational potential energy if it is higher or has more mass compared to objects that are lower or has less mass.

Elastic: objects or materials that can be stretched or compressed and when released, return to their original shape, like a rubber band or spring.

Chemical: substances containing stored energy in the bonds between the atoms of a molecule, as in a battery for a flashlight, foods like carbohydrates and fats, and fuels such as gasoline , coal or wood. This energy is released when the bonds between atoms is broken or when new bonds form.

Kinetic Energy: Energy of objects or matter in motion. It depends on the mass and velocity of the objects. When the mass and/or the velocity is increased, the kinetic energy also increases.

Mechanical Energy: is equal to the sum of the potential and kinetic energies of an object.

Potential energy can be converted to kinetic energy and vice versa, but as in all energy conversions, some energy is wasted in the form of heat and can't be put to use.