By [**Anne Marie Helmenstine, Ph.D.**](https://www.thoughtco.com/anne-marie-helmenstine-ph-d-601916)

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[**Energy**](https://www.thoughtco.com/energy-definition-and-examples-2698976)**is defined as the ability to do**[**work**](https://www.thoughtco.com/work-2699023)**.** Energy comes in various forms. Here are 10 common types of energy and examples of them.

**Mechanical Energy**

Mechanical energy is energy that results from movement or the location of an object. Mechanical energy is the sum of [kinetic energy](https://www.thoughtco.com/definition-of-kinetic-energy-604552) and [potential energy](https://www.thoughtco.com/definition-of-potential-energy-604611).

**Examples:** An object possessing mechanical energy has both [kinetic and potential energy](https://www.thoughtco.com/kinetic-and-potential-energy-609257), although the energy of one of the forms may be equal to zero. A moving car has kinetic energy. If you move the car up a mountain, it has kinetic and potential energy. A book sitting on a table has potential energy.

**Thermal Energy**

Thermal energy or [heat energy](https://www.thoughtco.com/heat-energy-definition-and-examples-2698981) reflects the temperature difference between two systems.

**Example:** A cup of hot coffee has thermal energy. You generate heat and have thermal energy with respect to your environment.

**Nuclear Energy**

Nuclear energy is energy resulting from changes in the atomic nuclei or from nuclear reactions.

**Example:** [Nuclear fission](https://www.thoughtco.com/nuclear-fission-versus-nuclear-fusion-608645), nuclear fusion, and [nuclear decay](https://www.thoughtco.com/alpha-decay-nuclear-reaction-problem-609457) are examples of nuclear energy. An atomic detonation or power from a nuclear plant are specific examples of this type of energy.

**Chemical Energy**

[Chemical energy](https://www.thoughtco.com/definition-of-chemical-energy-604903) results from [chemical reactions](https://www.thoughtco.com/what-is-a-chemical-reaction-604042) between atoms or molecules. There are different types of chemical energy, such as electrochemical energy and chemiluminescence.

**Example:** A good example of chemical energy is an electrochemical cell or battery.

**Electromagnetic Energy**

Electromagnetic energy (or radiant energy) is energy from light or electromagnetic waves.

**Example:** Any form of light has [electromagnetic energy](https://www.thoughtco.com/examples-of-electromagnetic-energy-608911), including parts of the spectrum we can't see. Radio, [gamma rays](https://www.thoughtco.com/gamma-rays-3884156), x-rays, microwaves, and [ultraviolet light](https://www.thoughtco.com/wavelength-of-ultraviolet-light-604286) are some examples of electromagnetic energy.

**Sonic Energy**

Sonic energy is the energy of sound waves. Sound waves travel through the air or another medium.

**Example**: A sonic boom, a song played on a stereo, your voice.

**Gravitational Energy**

Energy associated with gravity involves the attraction between two objects based on their [mass](https://www.thoughtco.com/mass-2698988). It can serve as a basis for mechanical energy, such as the potential energy of an object placed on a shelf or the kinetic energy of the Moon in orbit around the Earth.

**Example**: Gravitational energy holds the atmosphere to the Earth.

**Kinetic Energy**

Kinetic energy is the energy of motion of a body. It ranges from 0 to a positive value.

**Example**: An example is a child swinging on a swing. No matter whether the swing is moving forward or backward, the value of the kinetic energy is never negative.

**Potential Energy**

Potential energy is the energy of an object's position.

**Example**: When a child swinging on a swing reaches the top of the arc, she has maximum potential energy. When she is closest to the ground, her potential energy is at its minimum (0). Another example is throwing a ball into the air. At the highest point, the potential energy is greatest. As the ball rises or falls it has a combination of potential and kinetic energy.

**Ionization Energy**

[Ionization energy](https://www.thoughtco.com/ionization-energy-and-trend-604538) is the form of energy that binds electrons to the nucleus of its atom, ion, or molecule.

**Example**: The first ionization energy of an atom is the energy needed to remove one electron completely. The second ionization energy is energy to remove a second electron and is greater than that required to remove the first electron.