What Is Electromagnetic Energy, and Why Is It Important to You (and the Entire Planet)?

Electromagnetism is one of those five dollar words (with six syllables!) that has the power to instantly transport us back to high school science class. But here’s the thing: you don’t have to be a physicist to understand and appreciate electromagnetism and electromagnetic energy.

Electromagnetic energy is one of nature’s fundamental forces, and it has plenty of important applications in today’s world.

And Get ready to learn more about how this electrifying-sounding force matters to you and the universe as we know it.

What Is Electromagnetic Energy?

Also known as electromagnetic radiation, EM radiation, and [electromagnetism](https://www.livescience.com/38169-electromagnetism.html), electromagnetic energy is a term used to describe the various energies that travel as wavelengths through space at the speed of light. EM radiation doesn’t have mass or charge. Rather, it travels in a bundle of light energy called photons.

Electromagnetic energy is one of the[four fundamental forces of nature](https://home.cern/science/physics/standard-model) — along with the strong force, the weak force, and the gravitational force. These forces have different strength levels and work across varying ranges. For example, both electromagnetic and gravitational forces have an infinite range, yet gravity is the weakest.

Electromagnetic wavelengths are measured on the electromagnetic spectrum and each has its own unique properties.

How Does Electromagnetic Energy Work?

We can think of electromagnetic waves the same way we might think of a set of waves at the beach: there are peaks and troughs that travel in a relatively regular pattern and they use energy to move.

Electromagnetic radiation can be described in three ways: energy, wavelength, or frequency.

Wavelengths are typically measured in standard units, and when used to describe electromagnetic waves, it’s usually in meters (m). Going back to our beach example, the distance between the peaks of each wave is what you can consider the wavelength.

**What is Electromagnetic Wavelength?**

The phenomenon of [**electromagnetic radiation**](https://www.allthescience.org/what-is-electromagnetic-radiation.htm) is caused by the mutually reinforcing interaction of charged electrical and magnetic fields operating perpendicular to each other and that travel through space at the speed of light. Each pulse or oscillation emanating from the interplay of the electrical and magnetic force fields creates a wave of energy. Electromagnetic [**wavelength**](https://www.allthescience.org/what-is-a-wavelength.htm) refers to the measured distance between the crest or trough of each adjacent wave generated by the electromagnetic disturbance. People experience the various forms of electromagnetic radiation frequently in their everyday lives. [**Radio waves**](https://www.allthescience.org/what-are-radio-waves.htm), television broadcasts, X-rays, visible and invisible light, and [**microwave radiation**](https://www.allthescience.org/what-is-microwave-radiation.htm) are each discrete components of the [**electromagnetic spectrum**](https://www.allthescience.org/what-is-the-electromagnetic-spectrum.htm) that can be defined and categorized by their respective electromagnetic wavelengths.

Scottish [**physicist**](https://www.practicaladultinsights.com/what-is-a-physicist.htm) James Clerk Maxwell first developed the [**theory**](https://www.allthescience.org/what-is-a-theory.htm) of electromagnetism in the 19th century. Maxwell observed that the changes in an [**electric field**](https://www.allthescience.org/what-is-an-electric-field.htm) caused magnetic force fields, which in turn induced electrical fields. Maxwell predicted that these mutually reinforcing force fields would interact with each other at right angles in a plane, creating oscillations that would propagate thorough space at the speed of light.

Since all forms of electromagnetic radiation consist of waves of energy traveling through space, electromagnetic wavelength is one of the principal measures that is used to classify the discrete components of the entire electromagnetic spectrum. At the long wave end of the spectrum are radio transmissions, whose measured electromagnetic wavelengths can be the size of buildings. At the opposite end of the spectrum are gamma rays, whose wavelengths are smaller than the size of an atom's nucleus. Arrayed between long wavelength radio transmissions and ultra short electromagnetic wavelength gamma rays, in order of increasing wavelength, are microwaves, [**infrared**](https://www.allthescience.org/what-is-infrared-radiation.htm) radiation, [**visible light**](https://www.allthescience.org/what-is-visible-light.htm), ultra violet light, and X-rays.

The intensity of electromagnetic radiation generated is a function of the frequency of the waves generated each second. The incident of each complete wave constitutes a cycle. Specific frequencies are identified by the number of cycles generated each second. The international unit used to measure each complete cycle is one Hertz, or in its abbreviated form, Hz.

Both the frequency and wavelength of electromagnetic radiation are mathematically related. The energy of the electromagnetic radiation generated is directly proportional to its frequency. The higher the frequency, the greater the propagated radiation. Conversely, the frequency and wavelength of electromagnetic radiation are inversely related; the higher the frequency of radiation generated, the lower the electromagnetic wavelength and vice versa.

The frequency of these waves are measured in Hertz (hz), megahertz (MHz), and gigahertz (Ghz), units you may be familiar with on your car radio. The higher the frequency of an electromagnetic wave, the more electromagnetic energy it carries.

Interestingly, the frequency of an electromagnetic wave is inversely proportional to its wavelength, which means that the larger the frequency of such a wave, the shorter its wavelength, and vice versa.

To conclude our beach metaphor, there’s one last way to measure waves, and that’s by looking at their amplitude. A [wave’s amplitude](https://www.physicsclassroom.com/class/waves/Lesson-2/The-Anatomy-of-a-Wave)—whether it’s a sound wave or one crashing on a beach—is measured by looking at the difference between the wave’s peak and its trough.

What Is An Electromagnetic Field?

Electromagnetic fields are the product of EM radiation, and oftentimes are simply [referred to as radiation](https://www.niehs.nih.gov/health/topics/agents/emf/index.cfm). These electromagnetic fields can be dangerous to humans if the frequency of the EM radiation—measured in Hertz, megahertz (MHz), and gigahertz (GHz)—is too high.

Magnetic fields are produced by electrical charges, and the greater that charge, [the stronger the magnetic field](https://www.khanacademy.org/science/physics/magnetic-forces-and-magnetic-fields/magnetic-field-current-carrying-wire/a/what-are-magnetic-fields). This has practical applications because it means that we can increase or decrease an electrical charge to fine-tune magnetic fields to our purposes.

What Is the Electromagnetic Spectrum?

Not every electromagnetic wave is the same. Waves are characterized along an electromagnetic spectrum (EM spectrum) and they differ in both frequency and wavelength. While these waves can exist anywhere along a vast spectrum, they come in seven different varieties across a range of frequencies and a range of wavelengths, all of which you’ve likely heard before. As mentioned, they also have different degrees of energy.

The entire electromagnetic spectrum (going from the electromagnetic waves with the longest wavelengths to those with the shortest) is as follows:

1. Radio waves
2. Microwaves
3. Infrared radiation
4. Visible light
5. Ultraviolet radiation (UV)
6. X-rays
7. Gamma rays

What Are the 7 Types of Electromagnetic Energy?

There are [seven categories of radiation](https://www.energy.gov/nnsa/articles/wide-ranging-research-nnsa-spans-spectrum) on the electromagnetic spectrum. Each has its own wavelength and frequency. Let’s take a closer look at each one and their properties.

Radio Waves

[source](https://stock.adobe.com/images/telecommunications-towers-landscape/41544289?prev_url=detail)

Radio waves might be the most commonly known electromagnetic wave. They have longer wavelengths (a keen reader might remember that this also means they have very low frequencies).

Radio waves are created when electric current is applied to an antenna—a metal rod—causing it to vibrate at a specific frequency and generate an electromagnetic wave with a specific wavelength.

We use [radio waves](https://www.britannica.com/science/radio-wave) all the time in our cars, but radio waves are also used in GPS positioning, television broadcasting, high-energy emissions, wireless networks, remote controls, and cell phone networks. It’s no surprise then that the low levels of radiation your cell phone emits is called [radio frequency](https://www.fda.gov/radiation-emitting-products/cell-phones/radio-frequency-radiation-and-cell-phones).

The next time you use your phone to make a call or your remote to change the channel, you’ll have electromagnetic radiation to thank!

Microwaves

[Microwaves](https://science.nasa.gov/ems/06_microwaves) are a type of radio wave that also have long wavelengths and are also considered to be low frequency waveforms. Microwaves are the primary electromagnetic wave used in radar. If you’ve tuned in to your local news to see a meteorologist forecast the weather recently, you have microwaves to thank.

We also use microwaves in—surprise!—microwave ovens. These work by using electromagnetic radiation to [vibrate the atomic particles in your food](https://www.livescience.com/50259-microwaves.html), turning electromagnetic energy into thermal energy to heats up your meal. It’s yet another example of electromagnetic energy at work for you.

Infrared Radiation

Infrared radiation is also commonly referred to as [infrared light](https://science.nasa.gov/ems/07_infraredwaves) (IR, for short) or infrared waves. After radio waves and microwaves, it’s the next step down in wavelengths along the electromagnetic spectrum. These waves are invisible to the human eye, but special cameras that capture these waves can help us see at night (think night-vision goggles) or see sources of heat (thermal cameras).

Infrared radiation [is also important to astronomers](https://science.nasa.gov/ems/07_infraredwaves) and researchers at NASA, who use it to detect faraway stars, or fields of gas or dust that might otherwise be invisible to even our most advanced equipment.

Visible Light

Believe it or not, [visible light](https://science.nasa.gov/ems/09_visiblelight) is a form of electromagnetic energy. These electromagnetic waves have shorter wavelengths than infrared waves or radio waves, and therefore a higher frequency—and more energy.

The sun emits electromagnetic energy in electromagnetic waves all across the electromagnetic spectrum, but the visible light waves it emits [are the strongest](https://astronomy.com/magazine/ask-astro/2020/07/in-what-part-of-the-spectrum-does-the-sun-emit-energy). That’s part of the reason why you can’t stare at the sun—the intensity of the visible light is too much for the human eye!

We can further differentiate visible light into the visible spectrum. Varying the wavelengths of visible light gives us all of the different colors the human eye is capable of perceiving. This is most easily understood by shining white light [through a prism](https://www.physicsclassroom.com/class/refrn/Lesson-4/Dispersion-of-Light-by-Prisms), which creates refraction of that light into light of varying wavelengths, and therefore the different colors of the rainbow.

Ultraviolet Radiation

[source](https://stock.adobe.com/images/copy-space-tanning-bed-in-a-modern-beauty-salon/181612894?prev_url=detail)

[Ultraviolet](https://www.livescience.com/50326-what-is-ultraviolet-light.html) [radiation (or ultraviolet light)](https://www.livescience.com/50326-what-is-ultraviolet-light.html) is perhaps best known simply as UV rays. This form of electromagnetic radiation has short wavelengths, which means that ultraviolet light has a high frequency. Therefore, it contains  more electromagnetic energy than visible light, microwaves, or radio waves.

It’s at this point that electromagnetic radiation can start to get [dangerous for humans](https://www.epa.gov/sunsafety/health-effects-uv-radiation) if proper precautions are not taken. Why? Because unlike radio waves, microwaves, and infrared radiation, UV radiation is [ionizing radiation](https://www.cdc.gov/nceh/radiation/ionizing_radiation.html). (It’s also worth noting that X-rays and gamma rays are also ionizing.)

It’s no wonder that strong ultraviolet radiation is capable of damaging our skin. As such, we use UV protection to prevent sunburn—and potentially even more serious consequences. Studies show that UV radiation is strong enough to [damage DNA](https://www.news-medical.net/life-sciences/The-Mechanism-of-DNA-Damage-by-UV-Radiation.aspx) and potentially lead to cancer.

Amazingly, the sun produces so much UV radiation that, were it not for the Earth’s atmosphere filtering out many of these harmful rays, [life as we know it would not exist on land](https://eartharchives.org/articles/life-on-land-made-possible-by-ozone-layer/index.html). Thank goodness for our ozone layer!

There are [many practical applications for UV light](https://sciencing.com/uses-ultraviolet-light-5016552.html), ranging from novelty items like blacklights (hello glow-in-the-dark posters!) and artificial tanning (not a good idea) to cancer treatments and surface sterilization devices.

X-Rays

We’re now getting close to the tail end of the EM spectrum. While the wavelengths are growing vanishingly small, the energy and frequency of these electromagnetic waves are rising dramatically.

[X-rays](https://www.livescience.com/32344-what-are-x-rays.html) can potentially pose dangers to living beings because this type of radiation can cause molecular damage if not tightly controlled.

The most common X-ray application we all know is [radiology](https://medlineplus.gov/xrays.html), which uses these electromagnetic waves to produce images of the interior of the human body that would otherwise be unavailable to us. Whether you’re getting a mammogram, going through airport security, or having your teeth checked at the dentist, X-rays are a form of electromagnetic energy that we commonly interact with at various points in our lives.

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Gamma Rays

[source](https://stock.adobe.com/images/copy-space-tanning-bed-in-a-modern-beauty-salon/181612894?prev_url=detail)

Gamma rays exist at the far end of the electromagnetic spectrum, [with the shortest wavelengths but highest frequencies](https://science.nasa.gov/ems/12_gammarays). Gamma rays are also the highest energy electromagnetic waves, and as such, they pose the largest threat to biological life.

In popular culture, you may have heard of this form of electromagnetic energy in the world of comic books, where gamma rays are often included in backstories to explain how a superhero got his or her superpowers.

In real life, gamma rays are considered highly dangerous. Thankfully, [the sources of these rays are relatively limited](https://www.livescience.com/50215-gamma-rays.html). Cosmic rays, thunderstorms, and solar flares can all produce these electromagnetic waves, as can radioactive decay.

Gamma rays and X-rays are both sources of ionizing radiation, which is [defined](https://www.who.int/news-room/fact-sheets/detail/ionizing-radiation-health-effects-and-protective-measures) as “a type of energy released by atoms that travels in the form of electromagnetic waves.” In low doses, ionizing radiation can cause cancer, and in high doses it can destroy biological life. For these reasons, ionizing radiation sources like gamma rays and X-rays are tightly controlled.

Electromagnetic Waves Play an Important Role in Your Life

Electromagnetic energy is all around us, although most of the time we’re only aware of a very limited portion of the electromagnetic spectrum—visible light. Nonetheless, electromagnetic waves are vital to how we sense and experience the world. From radio and cell phones to microwaves, X-rays, and beyond, there are countless ways we take advantage of all the electromagnetic energy the universe has to offer.

As our world becomes ever more modernized and technology continues to amaze us, it’s nice to take a step back and think about the bigger picture. While you might not think about it every moment, electromagnetic energy is yet another reminder of how the invisible forces in our world impact nearly every aspect of our everyday lives.

WHAT IS ELECTRICAL ENERGY?

Electrical energy is a type of energy caused by the movement of [charge or electrons](https://www.electricaltechnology.org/2020/02/difference-current-charge.html). In other words, a form of energy derived and converted from kinetic energy or electrical potential energy.

Electrical energy is a type of kinetic energy because of the movement of charge from one point to another. When produced, all the electrical energy is the form of potential energy when delivered to the final application which can be converted to another form of energy i.e. from electrical to mechanical through electric motors and heat or motion through motors and light bulbs & heaters etc.

Electrical energy is generated (converted) from other forms of energies in [electric power](https://www.electricaltechnology.org/2020/08/electrical-power.html) plant houses and stations. The generated energy (in the form of [electricity](https://www.electricaltechnology.org/2020/08/what-is-electricity.html)) furtherly provided to the residential and commercial consumers through proper [transmission and distribution systems](https://www.electricaltechnology.org/2013/05/typical-ac-power-supply-system-scheme.html).

Keep in mind that **Electrical energy is a different quantity than the Electric power** where power is the rate of doing work or power is the rate at which energy is used or power is the rate of converting energy.

**Formula and Equation of Electrical Energy**

The amount of work done by energy is equal to moving an amount of “Q” coulombs of charges by “V” volts of potential difference (or [voltage](https://www.electricaltechnology.org/2020/07/what-is-voltage.html)).

Work done = Volts x Q coulombs

**W = V x Q**

Now, a current of “I” amperes flowing for time “t” second through a [circuit](https://www.electricaltechnology.org/2014/01/important-terms-related-to-electric-circuits-and-networks.html) having a [resistance](https://www.electricaltechnology.org/2020/08/resistance-resistivity-specific-resistance.html) of “R” ohms, the work done is same as for the above statement i.e. work done or utilized electrical energy is equal to the VD x Q joules. Where VD is the [voltage drop](https://www.electricaltechnology.org/2014/12/advance-voltage-drop-calculator-voltage-drop-formula.html) across the resistor in the circuit and the value of VD is equal to IR. i.e.

**V = IR**

But we know that I = Qt

Now,

Energy expended = VQ     …     (i)

Putting the value of Q = It in equation (i)

Energy expended = VIt     Joules     …     (ii)

Now, putting the value of V = IR in equation (ii)

**Electrical Energy**= IR x It**= I2Rt**     joules     …     (iii)

Now again, put the value of I = V/R ([Ohm’s law](https://www.electricaltechnology.org/2013/10/ohms-law-with-simple-explanation.html)) in equation (iii)

Work done = (V2/R2) x R t

**Work done = (V2/R) x t**     …     (iv)

Related Posts:

* [Difference Between Current and Voltage](https://www.electricaltechnology.org/2020/02/difference-between-current-voltage.html)
* [Difference between AC and DC (Current & Voltage)](https://www.electricaltechnology.org/2020/05/difference-between-ac-dc-current-voltage.html)

**Unit of Electrical Energy**

The unit of electrical energy is Joule or Watt – Second. It is a very basic and small unit, for this reason Wh (Watt-hour) or kWh (kilo-watt-hour is used for commercial application to measure the consumption of electrical energy through [energy metering](https://www.electricaltechnology.org/2018/08/metering-energy-metering-monitoring-measurement-transducers.html). Generally, electric power supplier and utilities [measures the electrical energy (electricity utility bill)](https://www.electricaltechnology.org/2012/03/lets-try-to-understand-calculation-of.html) by [installing electric energy meters](https://www.electricaltechnology.org/2012/11/how-to-wire-single-phase-kwh-meter.html) at the user end.

If 1 volt (potential difference) is applied across a circuit and 1 ampere of [current](https://www.electricaltechnology.org/2020/04/electric-current.html) is flowing through it for 1 second, then the work done or amount of electrical energy would be 1 joule or watt-second.

**1 J = 1 W x 1 s**

A kilo-watt-hour (kWh) is also known as a board of trade (B.O.T) unit.

**1 Board of Trade Unit = 1 B.O.T Unit = 1kWh = 1000Wh = 36 x105 = 3.6 MJ**     …     **Joule or Watt-seconds**

Note that energy and work is much related to each other as energy is the ability to do some work while work is the result of changing energy from one form to another. In other words, the amount of expended energy is equal to the work done.

For this reason, both work and energy is represented by the symbol of “W”. Additionally, the **S.I unit for both work and energy is same i.e. Joules represented by the symbol of “J”.**

**Sources and Types of Electrical Energy**

Following are the basic sources of electric energy i.e. converting other energies into electrical energies.

* Hydroelectric and Water head energy
* Sun heat and light energy (for [solar panels](https://www.electricaltechnology.org/2014/10/pv-types-of-solar-panel-best-pv-panel.html))
* Wind power and energy
* Nuclear Energy
* Fossil Fuels, biofuels, biomass as nonrenewable energy (natural gas, coal, petroleum & oil etc. for boilers and steam turbines.)
* [Lightning as Transient energy](https://www.electricaltechnology.org/2019/08/lightning-ac-dc.html)

The following methods are used to obtained electrical energy by converting other forms of energies

* Generators, alternators, windmills and hydroelectric power plants (converts mechanical energy into electrical energy).
* Nuclear Power plant, geothermal and steam turbine power plant (converts thermal energy into electrical energy).
* Batteries (converts chemicals energy into electrical energy).
* Solar panel and arrays (converts the radiant energy into electrical energy).

The above sources of electrical energy can be converted into different types of electrical energy as follows.

* AC (Alternating Current)
* DC (Direct Current)

Additional forms of electrical energies are:

* Static Electricity (Potential with no flow of electrons)
* Dynamic Electricity (Potential with flow of electrons)
* Electromagnetic & Electrostatic Energy

**Applications of Electrical Energy**

Electrical energy (i.e. electricity) is the backbone in our modern society and it is must for our day to day life and you can’t even imagine a life without electricity. There are vast amount of applications of electrical energy such as:

* Electric motors, movers, generators and storage [batteries](https://www.electricaltechnology.org/2019/07/types-of-batteries.html) etc.
* Transportation, vehicles, electric traction, plans and communication.
* Escalators, elevators and electronic ladders.
* Lighting, heating and cooling i.e. air conditioning, welding and molding etc.
* Construction, manufacturing, healthcare, engineering, entertainment, electronics appliances, computers, machinery and much more.
* **Electricity – Sources, Generation, Transmission, Measurement, Parameters & Types of Electricity**
* The phenomenon associated with the presence and the flow of charge is called electricity. It is a source of energy used for powering our electrical machines and equipment. In this era of modern technology, almost everything has been automatized with some sort of tech inside it powered by electricity such as kids toys, various alarms, product manufacturing machines in industries and equipment used in hospitals etc.

WHAT IS MECHANICAL ENERGY?

**mechanical energy**, sum of the [kinetic energy](https://www.britannica.com/science/kinetic-energy), or energy of motion, and the [potential energy](https://www.britannica.com/science/potential-energy), or energy stored in a system by reason of the position of its parts. Mechanical energy is constant in a system that has only gravitational forces or in an otherwise idealized system—that is, one lacking dissipative forces, such as [friction](https://www.britannica.com/science/friction) and air resistance, or one in which such forces can be reasonably neglected. Thus, a swinging pendulum has its greatest [kinetic](https://www.britannica.com/dictionary/kinetic) energy and least potential energy in the vertical position, in which its speed is greatest and its height least; it has its least kinetic energy and greatest potential energy at the extremities of its swing, in which its speed is zero and its height is greatest. As the pendulum moves, energy is continuously passing back and forth between the two forms. Neglecting friction at the pivot and air resistance, the sum of the kinetic and potential energies of the pendulum, or its mechanical energy, is constant. Actually the mechanical energy of the system is diminished at the end of each swing by the tiny amount of energy transferred out of the system by the [work](https://www.britannica.com/science/work-physics) [done](https://www.britannica.com/dictionary/done) by the pendulum in opposition to the forces of friction and air resistance. The mechanical energy of the Earth-[Moon](https://www.britannica.com/place/Moon) system is nearly constant as it is rhythmically interchanged between its kinetic and potential forms. When the Moon is farthest from Earth in its nearly elliptical orbit, its speed is least. Its kinetic energy has become least, and its potential energy is greatest. When the Moon is closest to Earth, it travels fastest; some potential energy has been converted to kinetic energy.

**What Is Mechanical Energy and How Does It Work?**

Mechanical energy is a matter of physical science. It’s the energy of motion, or the [energy of an object](https://study.com/academy/lesson/what-are-the-types-of-energy.html) that moves. All life forms and many systems use mechanical energy to function, and the energy of motion can be seen in everyday life. A few examples are:

* A child holds a ball up in the air as they scan the field to throw it. They are applying force (holding the ball up) but have not yet exercised any amount of [work](https://www.physicsclassroom.com/class/energy/Lesson-1/Definition-and-Mathematics-of-Work) (force causes displacement of an object).
* A child kicks a ball (external force) — the force acts upon it, propelling it forward.
* A ball flies through the air ([energy of motion](https://www.eia.gov/energyexplained/what-is-energy/forms-of-energy.php)), descends (gravitational force), bounces off the ground to go up again to a point ([gravitational potential energy](https://www.bbc.co.uk/bitesize/guides/zhvv2sg/revision/4)), then comes back down and rolls to a stop.
* A plane speeding down the runway represents the energy of motion.
* A speeding airplane slamming into a helicopter transfers [kinetic energy](https://justenergy.com/blog/just-the-facts-renewable-energy-vs-nonrenewable-energy/) to the other aircraft.
* A private jet slows to stop when the pilot applies brakes [(frictional force](https://byjus.com/physics/frictional-force/)).

Mechanical energy [(kinetic energy or potential energy)](https://justenergy.com/blog/just-the-facts-renewable-energy-vs-nonrenewable-energy/) is the energy of either an object in motion or the energy that is stored in objects by their position.

Mechanical energy is also a driver of renewable energy. Many forms of renewable energy rely on mechanical energy to adequately produce power or convert energy.

Two examples of renewable energy that depend on mechanical energy are [hydropower](https://justenergy.com/blog/hydropower-101/) and [wind energy.](https://justenergy.com/blog/everything-you-need-to-know-about-wind-energy/)

Top of Form

Zip Code See Plans

Bottom of Form

Mechanical energy is just one of several forms of energy, which also include:

* Light
* Heat
* Sound energy
* Chemical energy
* Electrical energy
* Nuclear energy

Interestingly, all these forms of energy are interchangeable — transferring from one state to another, depending on circumstances. That’s because the scientific [law of conservation](https://www.eia.gov/energyexplained/what-is-energy/laws-of-energy.php) states that energy never ceases to exist entirely; it can only change from one form to another.

**What Are Some Examples of Mechanical Energy?**

Mechanical [energy can be produced](https://www.uwsp.edu/cnr-ap/KEEP/nres633/Pages/Unit1/Section-B-Two-Main-Forms-of-Energy.aspx) by living things, solid objects, gasses, water, or air. There are examples of mechanical energy everywhere.

[Potential and kinetic energy](https://justenergy.com/blog/potential-and-kinetic-energy-explained/) are just two examples that we can see or experience.