



Forms of Energy

All forms of energy fall under two categories:



POTENTIAL

Stored energy and the energy of position (gravitational).



CHEMICAL ENERGY is the energy stored in the bonds of atoms and molecules. Gasoline and a piece of pizza are examples.

NUCLEAR ENERGY is the energy stored in the nucleus of an atom – the energy that holds the nucleus together. The energy in the nucleus of a plutonium atom is an example.

ELASTIC ENERGY is energy stored in objects by the application of force. Compressed springs and stretched rubber bands are examples.

GRAVITATIONAL POTENTIAL ENERGY is the energy of place or position. A child at the top of a slide is an example.



KINETIC

The motion of waves, electrons, atoms, molecules, and substances.



RADIANT ENERGY is electromagnetic energy that travels in transverse waves. Light and x-rays are examples.

THERMAL ENERGY or heat is the internal energy in substances – the vibration or movement of atoms and molecules in substances. The heat from a fire is an example.

MOTION is the movement of a substance from one place to another. Wind and moving water are examples.

SOUND is the movement of energy through substances in longitudinal waves. Echoes and music are examples.

ELECTRICAL ENERGY is the movement of electrons. Lightning and electricity are examples.



Forms and Sources of Energy

In the United States we use a variety of resources to meet our energy needs. Use the information below to analyze how each energy source is stored and delivered.

1 Using the information from the Forms of Energy chart and the graphic below, determine how energy is stored or delivered in each of the sources of energy. Remember, if the source of energy must be burned, the energy is stored as chemical energy.

NONRENEWABLE

- Petroleum _____
- Coal _____
- Natural Gas _____
- Uranium _____
- Propane _____

RENEWABLE

- Biomass _____
- Hydropower _____
- Wind _____
- Geothermal _____
- Solar _____

2 Look at the U.S. Energy Consumption by Source graphic below and calculate the percentage of the nation's energy use that each form of energy provides.

What percentage of the nation's energy is provided by each form of energy?






- Chemical _____
- Nuclear _____
- Motion _____
- Thermal _____
- Radiant _____

What percentage of the nation's energy is provided by nonrenewables? _____






By renewables? _____

U.S. Energy Consumption by Source, 2013

NONRENEWABLE

	PETROLEUM 35.20% Uses: transportation, manufacturing
	NATURAL GAS 26.59% Uses: heating, manufacturing, electricity
	COAL 18.52% Uses: electricity, manufacturing
	URANIUM 8.47% Uses: electricity
	PROPANE 1.69% Uses: heating, manufacturing

RENEWABLE

	BIOMASS 4.73% Uses: heating, electricity, transportation
	HYDROPOWER 2.62% Uses: electricity
	WIND 1.63% Uses: electricity
	SOLAR 0.31% Uses: heating, electricity
	GEOHERMAL 0.23% Uses: heating, electricity

Data: Energy Information Administration

*Note: Sum of renewable and nonrenewable sources does not equal 100, due to independent rounding