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 is the internal energy that causes the vibration or movement of atoms and molecules in substances. Liquid water has more thermal energy than solid water (ice).

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

SOUND ENEGRY 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		RENEWABLE	
Petroleum	_____	Biomass	_____
Coal	_____	Hydropower	_____
Natural Gas	_____	Wind	_____
Uranium	_____	Solar	_____
Propane	_____	Geothermal	_____

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 _____

Radiant _____

Thermal _____

What percentage of the nation's energy is provided

by nonrenewables? _____

by renewables? _____

U.S. Energy Consumption by Source, 2017

NONRENEWABLE

PETROLEUM 36.99% *
Uses: transportation, manufacturing - includes propane

NATURAL GAS 28.66% *
Uses: heating, manufacturing, electricity - includes propane

COAL 14.15%
Uses: electricity, manufacturing

URANIUM 8.61%
Uses: electricity

PROPANE
Uses: heating, manufacturing

*Propane consumption figures are reported as part of petroleum and natural gas totals.

RENEWABLE

BIOMASS 5.20%
Uses: heating, electricity, transportation

HYDROPOWER 2.83%
Uses: electricity

WIND 2.40%
Uses: electricity

SOLAR 0.79%
Uses: heating, electricity

GEOTHERMAL 0.21%
Uses: heating, electricity

**Total does not add up to 100% due to independent rounding.
Data: Energy Information Administration