



## Natural Gas and Electricity Vocabulary List

**Alternative Fuel** - A popular term for "non-conventional" transportation fuels made from natural gas (propane, compressed natural gas, methanol, etc.) or biomass materials (ethanol, methanol).

**Ampere** - A unit of measure for an electrical current; the amount of current that flows in a circuit at an electromotive force of one Volt and at a resistance of one Ohm. Abbreviated as amp.

**Appliance** - A piece of equipment, commonly powered by electricity, used to perform a particular energy-driven function. Examples of common appliances are refrigerators, clothes washers and dishwashers, conventional ranges/ovens and microwave ovens, humidifiers and dehumidifiers, toasters, radios, and televisions.

**Atom** -the basic unit of a chemical element.

**Battery** - An energy storage device made up of one or more electrolyte cells.

**Biomass** - Any organic (plant or animal) material which is available on a renewable basis, including agricultural crops and agricultural wastes and residues, wood and wood wastes and residues, animal wastes, municipal wastes, and aquatic plants.

**Boiler** - A tank in which water is heated to produce either hot water or steam that is circulated for the purpose of heating and power.

**Chemical Energy** - Energy stored in a substance and released during a chemical reaction such as burning wood, coal, or oil.

**Circuit(s)** - An electric circuit is a path in which electrons from a voltage or current source flow. The point where those electrons enter an electrical circuit is called the "source" of electrons. The point where the electrons leave an electrical circuit is called the "return" or "earth ground".

**Climate Change** - A term used to refer to all forms of climatic inconsistency, but especially to significant change from one prevailing climatic condition to another. In some cases, "climate change" has been used synonymously with the term "global warming"; scientists, however, tend to use the term in a wider sense inclusive of natural changes in climate, including climatic cooling.

**Coal** - A fossil fuel formed by the breakdown of vegetable material trapped underground without access to air.

**Coal-Fired Power Plant** - A power plant that uses coal as the fuel to generate electricity.

**Cogeneration** - The production of electrical energy and another form of useful energy (such as heat of steam) through the sequential use of energy.

**Conductor**- an object or type of material that allow the flow of electrical current in one or more directions. A metal wire is a common electrical conductor. In metals such as copper or aluminum, the mobile charged particles are electrons.

**Direct Current** - An electric current that flows in only one direction through a circuit, as from a battery.

**Drilling** - The act of boring a hole (1) to determine whether minerals are present in commercially recoverable quantities and (2) to accomplish production of the minerals (including drilling to inject fluids). There are three types of drilling: exploratory - drilling to locate probable mineral deposits or to establish the nature of geological structures; such wells may not be capable of production if minerals are discovered; developmental - drilling to delineate the boundaries of a known mineral deposit to enhance the productive capacity of the producing mineral property; and directional - drilling that is deliberately made to depart significantly from the vertical.

**Electrical Energy** - The energy associated with electric charges and their movements.

**Electricity** - A form of energy characterized by the presence and motion of elementary charged particles generated by friction, induction, or chemical change.

**Electricity Generation** - The process of producing electric energy or the amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatt hours (kWh) or megawatt hours (MWh).

**Electric Motor** - a device that takes electrical energy and converts it into mechanical energy to turn a shaft.

**Electric Power** - The amount of energy produced per second. The power produced by an electric current.

**Electrical Substation** - A substation is a part of an electrical generation, transmission, and distribution system. Substations transform voltage from high to low, or the reverse, or perform any of several other important functions.

**Electrochemistry** - The branch of chemistry that deals with the chemical changes produced by electricity and the production of electricity by chemical changes.

**Electromagnetic** - Having to do with magnetism produced by an electric current.

**Electromagnetic Energy** - Energy that travels in waves, such as ultra-violet radiation. It can be thought of as a combination of electric and magnetic energy.

**Electromagnetic Waves** - Radiation that consists of traveling waves of electric and magnetic disturbances. X-rays, light rays and radio waves are among the many kinds of electromagnetic waves.

**Electron** - A subatomic particle with a negative electric charge. Electrons form part of an atom and move around its nucleus.

**Element** - Any substance that cannot be separated into different substances. All matter is composed of elements.

**Emission** - A discharge or something that is given off; generally used in regard to discharges into the air. Or, releases of gases to the atmosphere from some type of human activity (cooking, driving a car, etc). In the context of global climate change, they consist of greenhouse gases (e.g., the release of carbon dioxide during fuel combustion).

**Energy** - The ability to do work or the ability to move an object. Electrical energy is usually measured in kilowatt hours (kWh), while heat energy is usually measured in British thermal units (Btu).

**Energy Consumption** - The use of energy as a source of heat or power or as a raw material input to a manufacturing process.

**Energy Efficiency** - Refers to activities that are aimed at reducing the energy used by substituting technically more advanced equipment, typically without affecting the services provided. Examples include high-efficiency appliances, efficient lighting programs, high-efficiency heating, ventilating and air conditioning (HVAC) systems or control modifications, efficient building design, advanced electric motor drives, and heat recovery systems.

**Fossil Fuels** - Fuels (coal, oil, natural gas, etc.) that result from the compression of ancient plant and animal life formed over millions of years.

**Fuel** - Any material that can be burned to make energy.

See our brief sections on: [Fuels](#) and [Fuel Milestones](#).

**Furnace** - An enclosed structure in which heat is produced for the purpose of heating a house or a building.

**Gas** - (1) A non-solid, non-liquid (as hydrogen or air) substance that has no fixed shape and tends to expand without limit. (2) A state of matter in which the matter concerned occupies the whole of its container irrespective of its quantity. Includes natural gas, coke-oven gas, blast furnace gas, and refinery gas.

**Generator** - A device that turns mechanical energy into electrical energy. The mechanical energy is sometimes provided by an engine or turbine.

**Generating Capacity** - The amount of electrical power a power plant can produce.

**Geologist**- A geologist is a scientist who studies the solid and liquid matter that constitutes the Earth as well as the processes and history that have shaped it.

**Global Warming** - An increase in the near surface temperature of the Earth. Global warming has occurred in the distant past as the result of natural influences, but the term is today most often used to refer to the warming some scientists predict will occur as a result of increased anthropogenic emissions of greenhouse gases. This includes the very small, high-intensity track lights used to display merchandise or provide spot illumination in restaurants.

**Hydrocarbon**-a compound of hydrogen and carbon, such as any of those that are the chief components of petroleum and natural gas.

**Induction** - The process of producing an electrical or magnetic effect through the influence of a nearby magnet, electric current, or electrically charged body.

**Joule** - A metric unit for measuring work and energy, named after James Joule. It is equal to the work done when a one ampere current is passed through a resistance of one ohm for one second.

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**Kilowatt** - A unit of power, usually used for electric power or to energy consumption (use). A kilowatt equals 1000 watts.

**Kilowatthour(kWh)** - A measure of electricity defined as a unit of work or energy, measured as 1 kilowatt (1,000 watts) of power expended for 1 hour. One kWh is equivalent to 3,412 Btu or 3.6 million joules.

**Kinetic** - The energy of a body which results from its motion.

**Light** - Radiant electromagnetic energy that an observer can see.

**Lightning** - the occurrence of a natural electrical discharge of very short duration and high voltage between a cloud and the ground or within a cloud, accompanied by a bright flash.

**Liquefied Petroleum Gas (LPG)** -A group of hydrocarbon-based gases derived from crude oil refining or natural gas fractionation. They include ethane, ethylene, propane, propylene, normal butane, butylene, isobutane, and isobutylene. For convenience of transportation, these gases are liquefied through pressurization.

**Load** - The power and energy requirements of users on the electric power system in a certain area or the amount of power delivered to a certain point.

**Megawatt** - A unit of electrical power equal to 1000 kilowatts or one million watts. See our

**Mercaptan** - An organic chemical compound that has a sulfur like odor that is added to natural gas before distribution to the consumer, to give it a distinct, unpleasant odor (smells like rotten eggs). This serves as a safety device by allowing it to be detected in the atmosphere, in cases where leaks occur.

**Methane** -A colorless, flammable, odorless hydrocarbon gas (CH<sub>4</sub>) which is the major component of natural gas. It is also an important source of hydrogen in various industrial processes. Methane is a greenhouse gas.

**Molecule** - Particles that normally consist of two or more atoms joined together. An example is a water molecule that is made up of two hydrogen atoms and one oxygen atom.

**Natural Gas** - An odorless, colorless, tasteless, non-toxic clean-burning fossil fuel. It is usually found in fossil fuel deposits and used as a fuel.

**Natural Gas Liquids (NGL)** - Substances that can be processed as liquids out of natural gas by absorption or condensation.

**Nonrenewable** - Fuels that cannot be easily made or "renewed." We can use up nonrenewable fuels. Oil, natural gas, and coal are nonrenewable fuels.

**Ohm** - The unit of resistance to the flow of an electric current.

**Organic Waste** - Waste material of animal or plant origin.

**Petroleum** - Generally refers to crude oil or the refined products obtained from the processing of crude oil (gasoline, diesel fuel, heating oil, etc.) Petroleum also includes lease condensate, unfinished oils, and natural gas plant liquids.

**Photon** - A particle of light that acts as an individual unit of energy.

**Pipeline, Distribution** - A pipeline that conveys gas from a transmission pipeline to its ultimate consumer.

**Power** - The rate at which energy is transferred. Electrical energy is usually measured in watts. Also used for a measurement of capacity.

**Power Plant** - A facility where power, especially electricity, is generated.

**Propane (C<sup>3</sup>H<sup>8</sup>)** - A normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees Fahrenheit. It is extracted from natural gas or refinery gas streams.

**Production, Oil and Gas** - The lifting of oil and gas to the surface and gathering, treating, field processing (as in the case of processing gas to extract liquid hydrocarbons), and field storage.

**Radiant Energy** - Any form of energy radiating from a source in waves.

**Receiver Panel (Solar)** - A panel that contains a battery of solar cells.

**Recycling** - The process of converting materials that are no longer useful as designed or intended into a new product.

**Renewable Energy Sources** - Fuels that can be easily made or "renewed." We can never use up renewable fuels. Types of renewable fuels are hydropower (water), solar, wind, geothermal, and biomass.

**Semiconductor** - Any material that has a limited capacity for conducting an electric current.

Semiconductors are crystalline solids, such as silicon, that have an electrical conductivity between that of a conductor and an insulator.

**Solar Cell** - An electric cell which changes radiant energy from the sun into electrical energy by the photovoltaic process.

**Solar Energy** - The radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity.

**Space Heating** - The use of energy to generate heat for warmth in housing units using space-heating equipment. The equipment could be the main space-heating equipment or secondary space-heating equipment.

**Superconductivity** - The abrupt and large increase in electrical conductivity exhibited by some metals as the temperature approaches absolute zero.

**Tank Farm** - An installation used by trunk and gathering pipeline companies, crude oil producers, and terminal operators (except refineries) to store crude oil.

**Thermal Energy** - The total potential and kinetic energy associated with the random motions of the molecules of a material.

**Thermostat** - A device that adjusts the amount of heating and cooling produced and/or distributed by automatically responding to the temperature in the environment.

**Transformer** - A device which converts the generator's low-voltage electricity to higher-voltage levels for transmission to the load center, such as a city or factory.

**Transmission (Electric)** - The movement or transfer of electric energy over an interconnected group of lines and associated equipment between points of supply and points at which it is transformed for delivery to consumers or is delivered to other electric systems. Transmission is considered to end when the energy is transformed for distribution to the consumer.

**Transmission Line** - A set of conductors, insulators, supporting structures, and associated equipment used to move large quantities of power at high voltage, usually over long distances between a generating or receiving point and major substations or delivery points.

**Transmission System (Electric)** - An interconnected group of electric transmission lines and associated equipment for moving or transferring electric energy in bulk between points of supply and points at which it is transformed for delivery over the distribution system lines to consumers or is delivered to other electric systems.

**Volt (V)** - The volt is the International System of Units (SI) measure of electric potential or electromotive force. A potential of one volt appears across a resistance of one ohm when a current of one ampere flows through that resistance. Reduced to SI base units,  $1 \text{ V} = 1 \text{ kg times m}^2 \text{ times s}^{-3} \text{ times A}^{-1}$  (kilogram meter squared per second cubed per ampere).

**Voltage** - The difference in electrical potential between any two conductors or between a conductor and ground. It is a measure of the electric energy per electron that electrons can acquire and/or give up as they move between the two conductors.

**Voltaic Electricity** - Electricity produced by chemical action.

**Watt** - A metric unit of power, usually used in electric measurements, which gives the rate at which work is done or energy used.