



water and energy Glossary

Alternating current — Also known as AC power, alternating current is electricity that reverses direction within a circuit. The electricity we use in our homes does this 120 times per second.

Amperage, amps — A measurement of the amount of electric current.

Appliances — Devices used in the home to perform domestic chores, such as a clothes dryer, dishwasher, refrigerator, and toaster.

Aquifer — An underground area made of rock, clay, and sand where water is stored.

Atmosphere — The layer of gases that surrounds the earth.

Atom — The smallest unit of matter. Scientists so far have found 112 different kinds of atoms. Everything in the world is made of different combinations of these atoms.

Biomass — Organic materials, such as wood by-products and agricultural wastes, that can be burned to produce energy or converted into a gas and used for fuel.

Carbon dioxide — A colorless, odorless, nonpoisonous gas that is a normal part of the air we breathe. Carbon dioxide is exhaled by humans and animals, and is absorbed by green growing things and by the sea.

Carbon monoxide (CO) — A colorless, odorless gas produced when any fossil fuel is used improperly and burns without sufficient oxygen. CO poisoning causes flu-like symptoms and in rare cases, death. It can be prevented through proper appliance installation, maintenance, and use.

Caulk — A thick paste-like substance used to fill up a crack or seam to make it watertight or airtight.

CFL — Compact fluorescent light.

Chemical energy — Energy that is released by a chemical reaction.

Chemical reaction — A process that changes one substance into another substance. Chemical reactions that take place during digestion change energy in food into substances that the body can use to do work.

Circuit — A circular path in which electricity travels.

Climate change — Changes in temperature, rainfall, wind, and other aspects of the earth's climate that last for an extended period.

Coal — A solid fossil fuel found in the earth. Coal is burned to make electricity.

Conductor — Something that allows electricity to flow through it easily. Water and most metals are good conductors.

Current — The movement or flow of electricity.

Crankshaft — A main rotating shaft running the length of the engine that transmits power to the transmission for turning the wheels of a car.

Diesel engine — A type of engine invented by Dr. Rudolf Diesel at the end of the 19th century. It was originally designed to run on a variety of fuels, including vegetable oils.

Direct current — Electricity that flows in only one direction in a circuit. Batteries use direct current electricity, also known as DC power.

Distribution wires — Power lines that carry electricity through towns and neighborhoods to homes and businesses. Distribution lines can run overhead or underground.

Drinking water treatment plants — Facilities that clean water to make it safe for people to use and drink.

Electricity — The flow of electrons.

Electrical Energy — A form of energy that arises from the flow of electrons.

Electrons — The basic particles that orbit the nucleus of an atom. The flow of electrons produces electricity.

Energy — The ability to change or move matter. It is sometimes also defined as the ability to do work.

Energy efficiency — Using less energy while getting more service from your appliances and equipment. You can do this by practicing energy-efficient behaviors or using energy-efficient technology, such as new lights and appliances.

Environment — All the natural and living things around us. The earth, air, weather, plants, and animals all make up our environment.

Evaporates — Turns into vapor. When the sun heats water, it evaporates.

Faucets — Devices that let water out of pipes so you can use it. When you wash your hands at a sink, water comes out of the faucet.

Fission — The splitting apart of an atom's nucleus, which releases a large amount of heat energy.

Fluorescent bulb — A light bulb that emits light because the gas inside it glows when it is charged by electricity.

Fuel — Any substance that can be burned to make energy.

Fuel cell — A technology that produces electricity through a chemical reaction similar to that found in a battery.

Generator — A machine that converts mechanical energy into electrical energy.

Geothermal energy — Energy that is generated by converting hot water or steam from deep beneath the earth's surface into electricity.

GFCI (ground fault circuit interrupter) — GFCIs are safety devices found on appliance cords and power outlets. If a GFCI detects electricity leaving a circuit, it quickly shuts off the electricity to prevent serious shock.

Glaciers — Large bodies of ice that move slowly down a slope or spread outward on a land surface.

Global warming — An increase in the earth's temperature caused by human activities such as burning fossil fuels for energy. Burning these fuels releases carbon dioxide and other gases that make the earth's natural greenhouse effect much stronger, trapping more of the sun's heat in our atmosphere. Global warming is causing glaciers to melt and is changing sea levels and weather patterns.

Greenhouse effect — The greenhouse effect is the rise in temperature that the earth experiences because certain gases in the atmosphere absorb and radiate heat from the sun. This process occurs naturally and has kept the Earth's temperature about 59° F warmer than it would otherwise be. Current life on Earth could not be sustained without the natural greenhouse effect. Most scientists believe global warming is happening because the greenhouse effect has become intensified by the burning of fossil fuels, which releases an excess of carbon dioxide and other gases into the atmosphere.

Greenhouse gases — Carbon dioxide, methane, and ozone. These gases form a sort of clear layer around the earth that absorbs and radiates heat from the sun.

Hydroelectricity or hydropower — Electricity that is generated when falling water makes a turbine spin.

Hydroelectric power plants — The power plants that generate electricity when falling water makes a turbine spin.

Hydrogen — A colorless, odorless gas that is the simplest and most common element in the universe.

Insulator — Something that does not allow electricity to flow through it easily. Glass and special rubber are good insulators. Insulators do not allow electricity to flow through them easily because the electrons in their atoms do not move easily from atom to atom.

Incandescent bulb — A light bulb that emits light due to the glowing of a heated filament inside it.

Kilowatt — 1,000 watts of electricity.

Kilowatt-hour — One kilowatt of electricity produced or used in one hour.

Landfills — Places for trash and garbage disposal where the waste is buried between layers of earth.

Mechanical energy — The energy of motion that can move objects from place to place.

Megawatt — 1,000,000 watts of power or 1,000 kilowatts.

Methane — A hydrocarbon gas that is the main ingredient in natural gas.

Natural gas — A fossil fuel found deep in the earth. Natural gas is often found with oil.

Nuclear energy or nuclear power — Energy that is released from splitting atoms of radioactive materials (such as uranium) and then harnessed to generate electricity.

Nucleus — The center of an atom. The nucleus contains tiny particles called protons and neutrons. Orbiting around the nucleus are electrons.

Oil — A liquid fuel found deep in the earth. Gasoline and some plastics are made from oil.

Photovoltaic — A device that changes sunlight directly into electricity.

Polar icecaps — Large areas of ice at the North and South Poles of the earth. Polar icecaps in Antarctica at the South Pole can be up to 2,134 meters thick!

Polyethylene — One of the components found in oil that is used for a variety of products such as containers, kitchenware, tubing, and sheets or films for insulation. Grocery store plastic bags are also made of polyethylene.

Power plant — A place where electricity is generated.

Power line — A wire used to carry electricity. Power lines are located high overhead or buried underground.

Proton — A basic particle in an atom's nucleus that has a positive electrical charge.

Radiant energy — Any form of energy radiating from a source, such as heat from the sun or a campfire, or light from a bulb.

Refining facility — A facility that takes a crude substance (such as oil) and turns it into products such as electricity, fuels, or gases.

Renewable — Replaceable. If something is renewable it can be replaced or remade.

Renewable resources — Fuels that can be easily made or “renewed.” We can never use up renewable fuels. Types of renewable fuels are solar power, wind power, and hydropower.

Reservoirs — Natural or artificial ponds or lakes used for the storage of water.

Septic system — A septic system is used to store and clean used water when a pipeline is not available to carry it to a wastewater treatment plant.

Solar cells — Solar cells collect sunlight and convert it into electricity.

Solar energy — Energy from the sun.

Solar hot water collectors — Part of a solar water heating system that allows water to be heated by the sun.

Solar panel — A device that collects energy from the sun and converts it to electricity. Solar panels are also known as “modules.”

Static electricity — A form of electrical energy that results from an imbalance of positive and negative charges.

Substation — A facility where transformers lower electricity's voltage.

Thermostat — A device that controls the temperature of a heating or cooling system.

Transfer of energy — When one energy source moves or changes another source.

Transformer — A device used to increase or decrease electricity's voltage and current.

Transmission — The system in an automobile that transfers energy from the engine or motor to the wheels, causing the wheels to turn.

Transmission lines — Power lines that carry high-voltage electricity long distances.

Turbine — A device used in the generation of electricity. It has a shaft with blades at one end and electromagnets at the other. Water or steam or some other energy source pushes the blades, which make the shaft and the magnets spin very fast. The magnet end is surrounded by heavy coils of copper wire, and the spinning magnets cause electrons in the wire to begin to move, creating electricity.

Utility — A company or other organization that provides a public service, such as supplying electricity, natural gas, or water.

Vapor — Water that exists as gas in the air.

Voltage, volts — A measure of the pressure under which electricity flows.

Wastewater treatment plants — Places where water is filtered and cleaned after it is used so that it can be safely returned to the environment.

Wattage, watts — A measure of the amount of work done by a certain amount or amperage of electric current at a certain pressure or voltage.

Weatherstripping — A type of material used to seal a door or window around the edges to keep the hot or cold air from coming in or out.

Wind energy — A renewable energy source that uses the force of the wind to spin turbines and generate electricity.