

afforestation: The planting of a forest in an area that previously did not contain forest.

Agenda 21: Released at the Earth Summit in Rio de Janeiro in 1992, Agenda 21 is a United Nations–run program related to sustainable development. It is essentially a plan of action to be taken in order to move globally toward sustainability.

alternative energy: Energy derived from sources other than the traditional sources, such as fossil fuel, coal and nuclear. Alternative energy includes sources such as solar, wind, hydro, and geothermal.

biodegradable: A substance that can be easily broken down by the earth, and once broken down, contributes nutrients back into the earth.

biodiesel: A vegetable-based oil that is used in place of diesel oil. Typically this oil comes from soy or other vegetable based products but can also come from recycled cooking oils.

biodiversity: All the living things on earth and how they interact and rely on each other in order to create and sustain the different habitats and eco-systems that make up planet earth. The relationships are rather complex and include the largest creatures and vegetation down to the smallest microorganisms.

bio-fuels: Environmentally friendly fuels that are derived from renewable sources such as corn, sugar cane, animal waste, and so on.

biosphere: All the places on earth in which life occurs: land, rocks, water, and air.

brownfields: Abandoned sites, usually old commercial or industrial sites that have been environmentally contaminated or are perceived to have been contaminated.

Brundtland Report: “The Report of the Brundtland Commission,” also known as “Our Common Future,” was published by Oxford University Press in 1987. The report deals with sustainable development and the change of politics needed to achieve such development.

building envelope: All the elements that enclose a building, such as the windows, roof, and walls, as well as the materials contained in them or in between them such as insulations, vapor barriers, and the like.

chlorofluorocarbon (CFC): A chemical that was previously used in many aerosol sprays and refrigerants. It is no longer produced but it is still in use in old applications. It is believed that these chemicals produced the infamous hole in the ozone layer.

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cap and trade system: A government legislated system in which worst offenders or industries are given a cap in the amount of greenhouse gas emissions they can discharge into the atmosphere. Those who go over the cap must pay and buy offsets or pay a fine to compensate for going over the cap, and those who remain under the cap make money by being able to sell their excess emission “credits” to those who go over.

carbon dioxide (CO₂): A gas created by the burning of fossil fuels. Fossil fuels contain carbon that is the accumulation of millions of years worth of sunlight. Once burned the carbon is released into the air at which time it turns into carbon dioxide. It is this substance that is the main contributor to the greenhouse effect or global warming.

carbon footprint: The amount of carbon dioxide that is emitted by a particular entity. It is usually expressed in tons on an annual basis. Oftentimes this term is confused with ecological or environmental footprint as these things take into consideration more than just the amount of CO₂ you discharge.

carbon neutral: A net discharge of carbon dioxide into the atmosphere equal to zero. Rarely is this achieved purely by not discharging CO₂ into the atmosphere. For the most part, this is done by undertaking projects yourself or purchasing offsets that contribute toward projects that will take CO₂ out of the atmosphere, such as planting trees.

carbon offset: Making a financial contribution or “investment” toward a project that will help to remove carbon or more generally “greenhouse gases” from the atmosphere. You can offset the environmental impact of everything from your car to your airplane flight to your business activities.

carbon sequestration: The practice of pumping CO₂ into the ground in order to keep it from being discharged into the atmosphere and contributing to global warming.

cogeneration: The process of creating electrical energy that also creates heat, which is then used to create more electricity.

compact fluorescent light bulb (CFL): Light bulbs that use much less energy than standard incandescent bulbs, resulting in significant savings in energy cost.

crop rotation: Planting different types of crops each season so that the topsoil has a chance to regenerate.

deforestation: The removal of a vast amount of trees in order to make way for roads, buildings, and overall urbanization.

eco-chic: Products or services that are eco-friendly but are also stylish, trendy, and hip.

ecology: The study of living things in their environment.

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ecological economics: A field of academia that connects the traditional disciplines of natural and social sciences to study the dependence of human economies on natural ecosystems. This field of study focuses on the issue of how increased human economies will be able to deal with limited and shrinking natural ecosystems

ecosystem: The interaction of both the living and non-living things in a distinct area. A marine ecosystem, for example, refers not only to the fish and the coral that are living in an area, but also the rocks and non-living things in that distinct area.

ecological or environmental footprint: The total amount of ecology or environment (land, water, air, trees, and so on) that is needed to absorb, process, clean, and regenerate the total discharge of pollutants or contaminants and destruction caused by a person, business, city, and so on.

embodied energy: The total amount of energy used in the creation of a product or service. This includes the energy used in mining or harvesting, processing, fabricating, and transporting the product.

energy efficiency: Achieving the same results while using less energy.

environmental refugee: A person forcibly displaced due to environmental reasons, such as flooding, natural disasters, pollution, and so on.

environmental sustainability: Operating in a manner that satisfies the following conditions: 1) must not remove materials from the earth faster than they can be regenerated by the earth, 2) must not pollute or contaminate the air, land, and water faster than the earth can process and clean them, and 3) must not destroy or overharvest nature faster than it can regenerate.

erosion: A phenomenon in which soil and land is washed away or “disappears” over time due to constant exposure to the elements of rain, water, wind, and ice.

fair trade: A social movement promoting standards of labor, fair wages, and good employment practices for economically disadvantaged nations.

Forestry Stewardship Council (FSC): A nonprofit organization whose mission is to promote environmentally appropriate, socially beneficial, and economically viable management of the world's forests. FSC-labeled wood products indicate that the wood is harvested from sustainably managed forests.

fossil fuels: Resources buried in the ground, such as oil and natural gas, which have taken millions of years to form. Starting out as living vegetation that was grown with the power of the sun, they have decomposed and over millions of years turned into

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something that we can now use as fuel. This is why they are referred to as the inventory of millions of years of sunlight. They are also considered non-renewable resources.

geothermal power: The generation of energy by utilizing heat stored below the surface of the earth. Geothermal energy is an environmentally friendly alternative to producing energy, as it has minimal environmental impact.

global warming: The phenomenon of a global increase in temperatures due to the buildup of greenhouse gases (CO₂, NO₂, and so on) in the atmosphere that are trapping excess heat from the sun. Normally this heat from the sun would be reflected back out of the atmosphere. Although the increase seems relatively small, the impact is drastic and potentially catastrophic.

gray water: Wastewater that does not contain human or otherwise toxic waste, such as water that comes from sinks and showers. This water can then be used in situations where potable drinking water is not required, such as the flushing of toilets.

greenhouse gases (GHG): The collection of gases that contribute to a greenhouse effect that is warming the earth by trapping the heat from the sun that would normally have escaped. Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, halogenated fluorocarbons, ozone, perfluorinated carbons, and hydrofluorocarbons. These gases are a result of human activity such as the burning of fossil fuels.

greenhouse effect: As the sun's rays beat down on Earth, about 50 percent of the heat from these rays is absorbed by the earth; the remainder radiates back into outer space. As the build up of airborne pollutants traps this heat, more heat is absorbed (instead of radiating back to outer space) than would naturally stay within the earth's atmosphere. This effect is similar to what happens in a greenhouse to keep it warm; thus the term greenhouse effect. The pollutants that trap this heat are called greenhouse gases. The greenhouse effect leads to global warming.

greenfield land: A piece of undeveloped land that is either used for agriculture or is left alone as a natural landscape.

greenwashing: The embellishing of environmental efforts/accomplishments/benefits of a company, product, or service in order to increase sales or reputation. This is dangerous, because people who want to reduce their environmental impact may be tricked into purchasing a less environmentally friendly product or service over one that actually delivers the benefits. It is also dangerous for the companies who do this because the damage inflicted on their reputation once customers find out is extremely hard to recover from.

grid: The network of cables, wires, transformers, and other electrical devices used to transmit electricity from power plants to the end user.

groundwater: Freshwater that is located beneath the ground, usually situated in natural containers known as aquifers. Contaminants and pollutants that leach into the ground can contaminate this water supply.

habitat: The physical area where one or a group of plants or animals live.

heat island effect: A rise in temperature that occurs in urban areas as a result of replacing natural landscape with roads, buildings, parking lots, and so on. The temperature can be as much as 10° Fahrenheit more than rural areas. This causes an increase in energy costs from increased cooling requirements. You can reduce this effect by bringing back the natural landscape.

kilowatt-hour (kWh): A kilowatt-hour is the standard unit of measure for electricity. One kilowatt-hour is equal to 1,000 watt-hours. It refers to both the amount of power being pulled and how long it is being pulled for. For example, 10 × 100 W light bulbs would pull 1,000 watts, or 1 kW. Turning them on for one hour would consume 1kWh.

Kyoto Protocol: Implemented in 1997, this initiative is a legally binding agreement, whereby over 160 countries agreed to reduce their greenhouse gas emissions by an average of 5.2 percent below 1990 emissions levels. It doesn't look like this target will be achieved.

Leadership in Energy and Environmental Design (LEED): LEED is a point-based rating system developed by the U.S. Green Building Council that evaluates the environmental performance from a "whole building" perspective over its life cycle, providing a definitive standard for what constitutes a green building according to six categories: sustainable sites; water efficiency; energy and atmosphere; material resources; indoor environmental quality; innovation; and design process. Buildings evaluated by LEED are rated as certified, silver, gold, or platinum. There are a total of 69 LEED credits available in the six categories: 26 credits are required to attain the most basic level of LEED certification; 33 to 38 credits are needed for Silver; 39 to 51 credits for Gold; 52 to 69 credits for the Platinum rating.

life-cycle cost (LCC): The complete cost of purchasing, owning, running, and disposing of something over its entire lifespan. This includes how much energy or water or natural resources it requires to run it. Energy efficient or water efficient products have lower life cycle costs because although their up front or first cost is higher, the cost of operating is much lower due to less energy or water use, and they also tend to last longer.

megawatt: One thousand kilowatts, or 1 million watts; the standard measure of electric power plant generating capacity.

megawatt-hour: One thousand kilowatt-hours, or 1 million watt-hours.

methane: A colorless, odorless, flammable gas forming the major portion of natural gas.

microorganisms: Microscopic organisms so small that you can see them only through a microscope but that play an integral role in the overall functioning of the earth as a complete system.

net metering: A billing approach utility companies use to compensate people for generating their own electricity in excess of the amount they have used. When excess electricity is generated via solar, wind, or some alternative source, it goes back into the grid, causing your hydro meter to actually run backward and, thus, reducing your bill by the excess amount generated. This is a popular approach used by companies that have solar panels.

nitrogen oxides (NOx): Gases consisting of one molecule of nitrogen and varying numbers of oxygen molecules. This greenhouse gas is a by-product of combustion processes that use fossil fuels and, thus, contributes to the global warming phenomenon.

Non-governmental organization (NGO): An organization that operates for the betterment of the environment but is not affiliated with, is not operated by, and does not answer to the government.

nonrenewable resource: Resources that include but are not limited to fossil fuels, copper, and nickel that take thousands or millions of years to form, so long that once we use them they will not renew themselves for thousands or millions of years, making them essentially nonrenewable.

organic food: Food grown or raised without the use of chemical fertilizers, pesticides, or drugs. Animals are usually free-range, meaning they are not kept in small cages and are fed a natural diet while being treated humanely.

photosynthesis: The process plants use to change carbon dioxide and water into food by trapping sunlight in chlorophyll.

photovoltaic cell: A device that converts sunlight energy into electricity. This technology has been rapidly advancing and increasingly commercialized over the past few years. It is a fantastic alternative to the traditional fossil fuel approach of producing energy as it is very eco-friendly. The sun produces enough energy every second to meet current global needs for the next 500,000 years.

post-consumer: Material that was first used by a consumer and now has been turned or recycled into something else.

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pre-consumer/post industrial: Material that came from a manufacturing process that has not made its way to a consumer and can no longer be used by the creator.

renewable energy: energy that comes from sources which naturally replenish themselves in a relatively quickly time frame. Examples of renewable energy include wind and solar energy.

scrubbers: Equipment attached to smokestacks that is designed to capture GHG emissions before they are discharged into the atmosphere and contribute to global warming.

solar cell: See *photovoltaic cell*.

solar power: The power produced by solar or photovoltaic cells.

sustainability: Satisfying current human needs without compromising the ability of future generations to satisfy their own needs; operating in a manner that satisfies the following conditions: 1) must not remove materials from the earth faster than they can be regenerated by the earth, 2) must not pollute or contaminate the air, land, and water faster than the earth can process and clean them, 3) must not destroy or overharvest nature faster than it can regenerate itself, and 4) fairly and equitably covering basic global human needs.

The Natural Step: A framework for sustainability developed in 1989 by Dr. Karl Henrik Robert. This framework gives four system conditions that must be satisfied in order for something to be sustainable. The first three conditions deal with the environment and the last deals with social and economic issues.

volatile organic compound (VOC): A carbon-based chemical substance that produces noxious fumes and contributes to pollution and contamination. It is found in many paints, caulks, stains, adhesives, and epoxies and oftentimes are exhausted into the atmosphere in mass amounts via industrial production processes.

wind energy: The energy produced as a result of wind turning the blades of wind turbines or windmills. This is the cheapest and fastest-growing type of renewable energy technology.