**A**

**Alternating Current ("AC")**

Electric current that reverses direction 50 or 60 times per second (depending on the country).

**Amp**

Electrical current. A measure of the quantity of electricity flowing in a circuit. (Think of "Amps" as if they were gallons of water, and "Amps" are the gallons flowing per minute through a pipe.)

**Amp-hour**

Measure of the amount of electrical current flowing for a period of time.

**B**

**Biodiesel**

Biodiesel is an alternative fuel produced from renewable resources such as plant oils, animal fats, used cooking oil, and new sources such as algae. Biodiesel contains no petroleum, but can be combined in any quantity with petroleum diesel to create a biodiesel blend. Biodiesel blends can be used in most "compression-ignition" (diesel) engines with little or no modifcations. Biodiesel is simple to use, biodegradable, nontoxic, and essentially free of sulfur and aromatics (the "diesel" odor). (Biodiesel is not raw vegetable oil.)

**Biomass**

Biomass means "natural material", and refers to biological materials that were alive or created during our lifetimes. When burned, biomass materials release heat – just like wood logs in a campfire. Biomass energy uses natural materials like trees and plants. It can also mean waste products like trash. Examples of biomass include grass clippings, wood chips, animal manure, and non-toxic trash. Biomass exists in landfills, where bacteria break down the waste material, creating methane gas in the process, which can be captured and burned. Energy from biomass is most often captured to generate electricity. Biomass specifically excludes coal and petroleum.

**C**

**Compact Fluorescent Light ("CFL")**

Fluorescent light manufactured to occupy a very small area and able to be installed in an ordinary light fixture. CFL bulbs use a fraction of the electricity used by incandescent light bulbs.

**Conservation**

The reduction of energy usage through increased efficiency and/or reduced waste.

**D**

**Direct Current Electricity ("DC")**

Electricity that flows only in one direction. Direct Current is the type of electricity supplied by batteries.

**E**

**Energy Efficient Appliances**

Electrical devices or appliances that perform their task, and use less electricity than lower-efficient devices. Electrical inefficiency in many devices is directly related to the heat they produce. For example, energy efficient light bulbs use most of the incoming electrical energy to produce light, not heat.

**"EEM"**

EEM is an abbreviation for Energy Efficient Mortgage. When you are buying, selling, refinancing, or remodeling your home, you can increase your comfort and actually save money by using the Energy Efficient Mortgage (EEM). It is easy to use, federally recognized, and can be applied to most home mortgages. EEMs provide the borrower with special benefits when purchasing a home that is energy efficient, or can be made efficient through the installation of energy-saving improvements. To learn more about Energy Efficient Mortgages, click here.

**EV**

Abbreviation for "Electric Vehicle", a vehicle that derives all of its ability to move from energy stored in batteries, and does not have an internal combustion engine of any type.

**F**

**Feed-in-Tariff ("FIT")**

Money paid to a customer by a power company for excess electricity generated by a renewable energy source. The renewable energy source is most often either solar or wind generated electricity. This excess is connected to the power lines at the customer's residence, and most commonly on the customer's side of the electric meter. For example, if you had a solar electric system installed on your home, and had signed a feed-in-tariff agreeement ("FIT") with your power company, you could find the power company selling electricity to you at one price per kilowatt-hour, but BUYING the excess from you for more than they sell it to you at retail. Feed-in-tariffs are implemented to encourage end users to install renewable energy equipment and sell excess renewable energy back to the utility company.

**Filament**

The part of an incandescent lamp through which electricity passes and gets extremely hot, producing light.

**Fluorescent light**

A lighting device that uses an electrified gas rather than filament to produce light.

**G**

**Geothermal**

Heat from the earth. Often thought of as energy from geysers and hot springs. More recently, this term is applied to any heat stored in earth and available as a renewable energy resource.

**Gigawatt**

From "giga", meaning billion, and "watt", a unit of energy (see "watt"). A gigawatt is one billion watts of electrical energy. To give you an idea how large one gigawatt is, it's the energy consumed by 10 million 100 watt light bulbs illuminated at the same time.

**Global Warming**

The Earth's gradual warming due to the "greenhouse effect".

**Greenhouse Effect**

The rise in temperature the Earth experiences because certain gases in the atmosphere (such as water vapor, carbon dioxide, nitrous oxide, and methane) trap energy from the sun. Without these gases, heat would escape back into space and Earth’s average temperature would be about 60ºF colder. Because of how they warm our world, these gases are referred to as greenhouse gases.

**Greenhouse Gases**

Gases in the Earth's atmosphere that produce the greenhouse effect. Changes in the concentration of certain greenhouse gases, due to human activity such as fossil fuel burning, increase the risk of global climate change. Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, ozone, and various forms of fluorocarbon gas (used in air conditioners and refrigerators).

**Grid**

The network of wires and cables that transport electricity from a power plant to your home.

**H**

**"HERS"**

"HERS", an abbreviation for "Home Energy Rating Systems", provides a standardized evaluation of a home's energy efficiency and expected energy costs. A home energy rating can qualify a home owner or home buyer for an energy efficient mortgage (EEM) or an energy improvement mortgage (EIM). A HERS Report is similar to getting a miles-per-gallon report on a car - but in this case, lower is better (lower energy usage means a more efficient home). To find a HERS Certified Home Energy Rater, click here.

**I**

**Incandescent Bulb**

A light source that produces light by heating a wire filament to a very high temperature.

**Insulation**

Materials that keep energy from crossing from one place to another: on electrical wire, it is the plastic or rubber that covers the conductor; in a building, insulation makes the walls, floor, and roof more resistant to the outside (ambient) temperature.

**Inverter**

An electrical device that changes direct current ("DC") into alternating current ("AC").

**J**

**K**

**Kilowatt ("kW")**

One thousand watts of electricity. (See "Watt".)

**Kilowatt-hour ("kW-h")**

One thousand watt-hours. Calculated by multiplying the number of watts being used times the length of time in hours that amount of electricity is used. A refrigerator that uses 250 watts will consume one kilowatt-hour of energy in four hours (250 watts x 4 hours = 1,000 watt-hours .. or one kilowatt-hour). Utility bills are based on the number of kilowatt-hours consumed each month.

**L**

**LEED**

Abbreviation for "Leadership in Energy and Environmental Design".

**LEED Rating Systems**

LEED Green Building Rating System™ is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED provides building owners and operators with the tools they need to have an immediate and measureable impact on their buildings' performance. LEED certification provides independent, third-party verification that a building project is environmentally responsible, profitable and a healthy place to live and work. The LEED Green Building Rating System™ encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria.

The LEED rating system offers four certification levels for new construction -- Certified, Silver, Gold and Platinum -- that correspond to the number of "credits" (think of them as "points") accrued in five green design categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. LEED standards cover new commercial construction and major renovation projects, interiors projects and existing building operations.

**Light Emitting Diode ("LED")**

An extremely efficient source of light, "LED" lamps convert from 65% to 95% of the electric energy to light energy (depending on the color of the light). LEDs also typically last 50,000 to 100,000 hours. Light emitting diodes are made from the same material as transistors and give off light when electricity is passed through them.

**M**

**Megawatt**

From "mega", meaning million, and "watt", a unit of energy (see "watt"). A megawatt is one million watts of electrical energy. To give you an idea how large one megawatt is, it's the energy consumed by 10 thousand 100 watt light bulbs illuminated at the same time.

**N**

**NABCEP**

Abbreviation for "North American Board of Certified Energy Practitioners".

NABCEP is a volunteer board of renewable energy stakeholder representatives whose mission is to support, and work with the renewable energy and energy efficiency industries, professionals, and stakeholders to develop and implement quality credentialing and certification programs for practitioners (better known as solar energy installers).

**Net Metering**

A contractual arrangement that permits an electrical utility customer to turn their electric meter backwards and sell any excess power generated (over and above their usage requirement) back to the electrical grid to offset some, to all of their consumption. Depending on individual state or utility rules, the net excess generation may be credited to their account (in many cases at the retail price), carried over to a future billing period, or ignored.

**O**

**Off-the-grid ("Off-grid")**

Not connected to the commercial power lines.

**P**

**PV**

See "Photovoltaic".

**Photovoltaic**

"Light-generated voltage". ("Photo" means "light". "Voltaic" (vol-TAY-ick) means "voltage". It's difficult to prounounce .. which is why we say "PV".

**Photovoltaic ("PV") Cell**

An electronic device consisting of layers of special materials capable of converting light directly into electricity.

**Photovoltaic ("PV") Module**

An assembly of interconnected photovoltaic cells enclosed in a protective assembly (usually glass and plastic).

**Q**

**R**

**R-value**

"Resistance value". Used specifically for insulating materials to indicated its effectiveness against the movement of heat toward cold. The higher the number, the greater the slowing of the flow of energy. Three inches of fiberglass insulation has an R value of 7.5.

**Renewable Electricity**

Renewable electricity is electricity generated without use of fossil fuels.

**Renewable Energy ("RE")**

An energy source that renews itself without effort. Fossil fuels, once consumed, are gone forever, while solar energy is renewable in that the sun energy we harvest today has no effect on the sun energy we can harvest tomorrow.

**Renewables**

Shorthand for renewable energy or material sources.

**S**

**Silicon**

Semiconductor material made from silica (beach sand), which is then purified for photovoltaic applications.

**Solar Cell**

A device made of silicon and other materials. Solar cells generate electricity when exposed to sunlight.

**Solar Energy**

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

**Solar Modules**

Also called "solar panels". These are the large collections of solar cells that can produce electricity in a worthwhile quantity.

**Sustainable**

"Sustainability" relates to the quality of life in a community, and is frequently used as meaning not taking more from a resource than is replenshed naturally. In a broader sense, sustainability pertains to the economic, social and environmental systems that make up a community as a whole, and whether all three are working in concert to provide a healthy, productive, meaningful life for all community residents, present and future.

**T**

**Thermal Solar**

The process of deriving or concentrating heat from sunlight. Examples of "derived heat" are: home heating, solar cooking, clothes drying, solar heated water, and so forth. Concentrated solar thermal heat is often used to create steam, from which electric power is generated.

**Thin Film**

Refers one of the solar electricity technologies. For many years, solar cells were manufactured by cutting extremely thin slices of silicon and mounting those slices into solar modules. Roughly half of the very expensive silicon was lost for each slice. Envision a saw cutting a piece of wood. The sawdust represents lost material in the same way. "Thin film" technology allows solar module manufactureres to literally "paint" the material onto various surfaces such as glass, plastics, or metals. This requires 98-99% LESS material, and less time to manufacture, resulting in cost savings.

**Tracker**

Mechanical device used in solar electric and solar thermal systems. Follows the movement of the sun (daily and sometimes seasonally) and keeps the energy collection device pointed directly at the sun. Allows for the harvest of the maximum available solar energy.

**U**

**Uninterruptible Power Supply ("UPS")**

A device (usually containing batteries) that stores power for use when conventional power is unavailable, such as during a power failure.

**V**

**Volt**

Unit of electrical pressure. Think of "volts" as if it were water pressure.

**W**

**Watt**

Unit of electrical power. "Watts" are calculated by multiplying the electrical pressure in a circuit ("volts") by the amount of electricity moving in the circuit ("amps"). For example, 120 volts times 2 amps equals 240 watts.

**Watt-hour ("W-h")**

The electrical energy unit of measure equal to one watt of power supplied to, or taken from, an electric circuit steadily for one hour. For instance, a 60 watt incandescent light will consume 600 watt-hours of energy when used for ten hours (60 watts x 10 hours = 600 watt-hours.). Our electric bills are based on the number of watt-hours of energy consumed each month.

**Wind Turbine**

Also called "Wind Generator" or incorrectly "windmill". Devices consisting of blades that turn a shaft that turns a generator to harvest wind energy and produce electrical power.

**X**

**Xeriscape**

"Xeriscape" is a combination of the Greek word "xeros", meaning "dry", and "-scape," as in landscape. Xeriscape landscaping essentially refers to a creating a landscape design that's low-water use, and tailored to withstand drought conditions.

Pronounced as if it begins with the letter 'z' (as in "xylophone"), use of the word "xeriscaping" originated with the Denver Colorado Water Department in 1981. Also known as "low-water-use" landscaping.

**Y**

**Z**

**Zenith**

At the "zenith" in the sky, the sun will be directly overhead in relation to the observer.

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