Glossary

A	**Ampere (A)**	The SI unit of electrical current. Ampere is the amount of electric charges per second.
B	**Barrage**	A water channel that is controlled at its head by a gate or a sluice. A barrage is typically an artificial obstruction, designed to either increase a river's depth or to divert its flow. See Head.
C	**Current (A)**	A flow of electrons through a conductor. Current is measured in ampere (A), often called amps.
D	**Distance**	A physical length describing how far objects are apart, referred to by a numerical description.
E	**Efficiency**	Defined as energy out divided by energy in, or the ratio between input and output, usually converted to a percentage. The efficiency of a machine can be described as the ratio between how much work goes into a machine and how much comes out as useful work. Friction often wastes a lot of energy, reducing the efficiency of a machine.
	Elastic Potential Energy	A potential energy due to the deformation of a material. See Potential Energy.
	Energy (J)	The capacity to do work. The SI unit of energy is the joule (J).
	Energy Conversion	The process of transforming energy from one form to another.
F	**Flow Rate**	The rate by which water is discharged from an opening, usually measured in litres per hour.
	Friction	The resistance met when one surface is sliding over another, e.g. when an axle is turning in a hole or when you rub your hands together.
G	**Generator**	This is a device containing magnets and coils of wire which, when they rotate relative to each other, convert kinetic energy into electrical energy.
	Gravitational Acceleration	The acceleration of an object due to gravity. Normally considered to be 9.8 m/s², but will vary depending on elevation.
	Gravitational Potential Energy	The potential energy of an object as the result of its vertical height, mass and the gravitational attraction of the Earth. See Potential Energy.
H	**Head**	The distance or drop in height from where the water flow starts at the outlet or opening, until it reaches a generator turbine.

J	**Joule (J)**	The SI unit of measurement of energy work and heat is the joule (J). One joule is the amount of work done by a force of 1 N acting through a distance of 1 m in the same direction of the force. One Joule is one watt applied for the time of one second (1 Ws).
K	**Kinetic Energy**	The energy of an object that is related to its motion. The faster it travels, the more kinetic energy it has.
M	**Mass (kg)**	The SI unit for mass is kilogram (kg). Mass is the amount of matter in an object. See Weight (N).
	Mechanical Energy	Describing the potential or kinetic energy that can be used directly to do work in the components of a mechanical system.
N	**Non-renewable Energy**	Energy derived from a finite source, like coal, oil and gas.
P	**Perpendicular to**	When two planes are perpendicular to each other, in the case of the Solar Station, the lamp bulb and the solar panel, they are positioned with an angle of 90 degrees between them. One straight line at right angles to another straight line is perpendicular to that straight line.
	Photovoltaic	Derived from the words photo (meaning light) and volt (electricity), referring to technological systems that produce voltage when exposed to radiant energy (in particular sunlight).
	Potential Energy	The energy of an object that is related to its position. It is a form of stored energy. An object held above the floor has potential energy. A stretched elastic band or spring has potential energy.
	Power (W)	The rate of transfer of energy. The rate of doing work is called power. The electrical unit of power is called the watt (W).
R	**Renewable Energy**	Energy derived from naturally occurring and inexhaustible sources, like wind, sun and moving water.
S	**SI**	The International System of Units.
	Solar Cell	Individual photovoltaic cells are wired together in series and parallel to make modules convert light energy directly into electrical energy. See Solar Panel.
	Solar Panel	A group of solar cells arranged into a panel, providing an increased output. See Solar Cell.
	Solar Radiation	Radiant electromagnetic energy emitted by the sun, including ultraviolet and infrared wave lengths as well as visible light.
	Speed	The rate at which an object moves. Speed can be calculated using this formula: $\text{Speed} = \frac{\text{Distance traveled}}{\text{Time taken}}$

T	**Torque**	The applied force creating a rotational motion, also called a moment of force.
	Turbine	A rotary machine that converts kinetic energy into electrical energy. It can be operated by steam, water or wind.
V	**Variable**	A quantity that can take on different values or is likely to vary.
	Volt (V)	The SI unit of electromotive force or electrical potential difference, measured in volts (V).
	Voltage	The force driving the flow of electrical energy. Voltage is measured in volts (V).
W	**Watt (W)**	The SI unit for the rate at which work is done is the watt (W). The watt is the unit of measurement for power. One watt is the equal to one joule (J) per second.
	Wattage	The amount of work done in a given time, a measure of power. See Watt (W).
	Water Pressure	The force or pressure of a column of water, where the pressure exerted by the confined water is forced downward caused by the pull of the Earth's gravity in any water supply system.
	Weight (N)	Weight is a measure of the force that gravity exerts on an object. Since weight is affected by gravity, an object would weigh less on the moon, where the gravitational field strength is less. Weight is a force and measured in Newtons (N).
	Work	The application of a force over a distance. Work done can be calculated by multiplying the force needed to move an object by the distance it is moved (Force x Distance).