

THE A-B-C'S OF SOLAR

Alternating current (AC): Electrical current that continually reverses direction of flow. The frequency at which it reverses is measured in cycles-per-second, or Hertz (Hz). The magnitude of the current itself is measured in amps (A).

Balance of system (BOS): All the parts of a PV System excluding the solar module

Capacitor: An electronic component used for the temporary storage of electricity, as well for removing unwanted noise in circuits. A capacitor will block Direct Current but will pass Alternating Current.

Current: Current is the flow of electric charge in a conductor between two points having a difference in electrical potential (voltage) and is measured in Amps.

Current at maximum power (Imp): The current at which maximum power is available from a module. [UL 1703]

Cut-off voltage: The voltage levels at which the charge controller (regulator) disconnects the PV array from the battery, or the load from the battery.

Direct current (DC): Electrical current that flows only in one direction, although it may vary in magnitude. Contrasts with alternating current.

Gigawatt (GW): A measurement of power equal to a thousand million Watts.

Gigawatt-hour (GWh): A measurement of energy. One Gigawatt-hour is equal to one Gigawatt being used for a period of one hour, or one Megawatt being used for 1000 hours.

Grid: An electrical utility distribution network.

Grid-connected: An energy producing system connected to the utility transmission grid. Also called Grid tied.

Peak sun hours: The equivalent number of hours per day when solar irradiance averages 1000 W/m².

Photon: Light is composed of energy particles called photons which have variable energy but constant speed.

Photovoltaic (PV) array: A number of PV modules connected together in a single structure.

Photovoltaic (PV) cell: The smallest discrete element in a PV module that performs the conversion of light into electrical energy to produce a DC current and voltage.

Photovoltaic (PV) conversion efficiency: The ratio of the electrical power generated by a PV device to the power of the light incident on it. This is typically in the range 5% to 15% for commercially available modules.

Photovoltaic (PV) generator: The total of all PV strings of a PV power supply system, which are electrically interconnected.

Photovoltaic (PV) module: A single assembly of solar cells and ancillary parts, such as interconnections, terminals, (and protective devices such as diodes) intended to generate DC power under un-concentrated sunlight. The structural (load carrying) member of a module can either be the top layer (superstrate) or the back layer (substrate). [UL 1703]

Photovoltaic (PV) panel: a term often used interchangeably with PV module (especially in single module systems).

Photovoltaic (PV): refers to any device which produces free electrons when exposed to light.

Photovoltaic system: All the parts connected together that are required to produce solar electricity.

Photovoltaic cell: The semiconductor device that converts solar irradiance (light) into dc electricity.