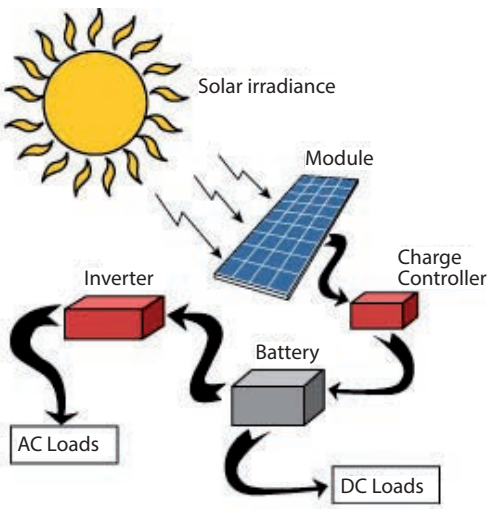
PHOTOVOLTAIC FACT SHEETS

European Photovoltaic Technology Platform

What is Photovoltaics and its application?

Photovoltaic (PV) is a marriage of two words: "photo", meaning light, and "voltaic" meaning electricity. Photovoltaic technologies are used to convert solar energy (light) into electricity.

Materials with special qualities (semi-conductor materials) are used in order to release electrons under the influence of sunlight. The most commonly used semi-conductor material is silicon. Silicon is the second most abundant material on Earth. An electric direct current (DC) is generated by the introduction of light. Often, inverters convert the current into a more commonly used alternating current (AC).



Photovoltaics can be used in many fields. Generally one distinguishes between on-grid and off-grid applications

On-grid applications are delivering either only the surplus energy (electricity not consumed by the producer) or all the produced electricity into the grid. Typical on-grid applications are roof top systems on private houses (average size 3 kilowatt). Other on-grid applications are larger plants with capacities of several megawatt.

Off-grid systems have no connection to an electricity grid (see Figure). Off-grid systems are contributing to rural electrification in many developing countries. PV is also used for many industrial applications where grid connection is not possible (eg. telecommunication).Consumer goods are another application where PV can be used (eg. pocket calculators).

PV uses abundant solar energy and converts it into electricity

PhotoVoltaic TECHNOLOGY PLATFORM

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SEVENTH FRAMEWORK PROGRAMME

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