



Eni launches prototype photovoltaic plant based on luminescent solar concentrators

Rome, 27 November 2012 – Today, Eni has launched the first prototype photovoltaic shelter developed by Eni researchers based on a new solar energy technology which allows to generate electricity through luminescent solar concentrators.

The plant, which will be used as an outdoor laboratory for the testing of the new devices, is a dedicated parking facility for electric vehicles and allows to charge the batteries through the current generated by the dedicated panels.

The luminescent solar concentrators (LSC) are made up of transparent plates (plastic or glass) which contain dispersed fluorescent dyes that absorb some of the solar light and emit it into the inside of the plate. By making use of the phenomenon of total internal reflection used in optical fibres, the emitted radiation is led towards the thin edges of the plate where it is concentrated on small surfaced conventional solar cells, which convert it into electrical energy.

LSC technology offers significant potential advantages over conventional silicon panels and solar concentrators based on mirrors or lenses. The plates are able to effectively capture both direct and indirect solar radiation and they are therefore just as efficient in cloudy conditions and their orientation is not important; they are made of predominantly low cost materials and allow for the significant reduction of silicon used in equivalent electric power generated; they can be used to make transparent photovoltaic panels and photovoltaic windows, making Eni's technology ideal for use in buildings and other contexts.

Eni's photovoltaic shelter is based on the technology and innovative materials developed by the company at its Research Center for Un-Conventional Energy - Eni Donegani Institute of Novara, which is one of the most important industrial research centres in Italy committed to unconventional energy sources including renewable energy sources like solar energy and biomass. Enipower, an Eni company which operates in the electricity generation sector and produces and commercializes photovoltaic cells and modules, is also actively involved in the project and will develop it until it is up and running.

Eni's photovoltaic shelter is able to produce around 500 nominal Watts of electricity generated by 192 yellow and transparent photovoltaic panels. Each panel consists of a transparent plastic material with small amounts of dyes which are patented by Eni.

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