

# Technology OFFER Kompletni informac

## New generation solar panels

Reference: VEN1  
Organization: Innovation Relay Centre Alps - Genova/Camera di Commercio di Genova  
IRC Name:  
Country: Italy  
Entry Date: 18.9.2001 14:19:16  
Update Date: 4.10.2001 12:26:11  
Deadline

### Abstract:

An Italian SME has developed alveolar polycarbonate/stainless steel solar panels that can be used to set up low cost thermal solar panels & cooled cells photovoltaic panels with heat recuperation for large buildings. The simple assembly system allows low-skilled workers to assemble units out of single spare parts at the place of installation. It reduces transport fees, thus making solar technology more competitive. Collaboration sought from the energy sector for joint-venture agreements.

### Description:

The solar panel system is made of a "sandwich" of 3 sheets of alveolar polycarbonate:  
Upper sheet for protection,  
Middle sheet as an absorbing (or cooling) area  
Lower sheet for support and insulation.

The sandwich is framed and stiffened with stainless steel profiles. The horizontal profiles work as collectors and are perfectly waterproof thanks to special gaskets and design.

The innovative technology has developed three kinds of solar panel:

- 1) – Thermal solar panel for big plants: 320 cm length, 250 cm width, 11 cm thickness, 7 sqm. absorbing area. The upper collector has a heat exchanger inside. Use: production of a large amount of low range temperature (35 - 50 °C) thermal energy, ex. for swimming pools or buildings heating or industrial applications.
- 2) – Household autonomous thermal solar panel: same measures as 1), without controllers or external power alimentation, but including a photovoltaic device powering a gear pump proportionally to the needs. Use: heating home sanitary water or public showers (in summer sunny day, it can provide heat water for up 100 showers).
- 3) – Cooled cells photovoltaic solar panel: 415 cm length, 250 cm width, 11 cm thickness, 7.56 sqm. cell's absorbing area. It delivers 1 Kw/h peak power, with up than 30% increase in efficiency by uniformly cooling system, and possibility of recovering thermal energy. The panel has many common parts with its "cousins" solar panels, thus reducing production costs.

### Innovative Aspects:

Production of U.V. protected polycarbonates permits to have products lasting about 20 years in working conditions. Stainless frame and profiles give a very light module, extremely resistant and reliable, easy to set up.

Concerning thermal panels, a future increase of energy production can be obtained by adding other modules, without other main modifications, since each module has his heat exchanger integrated.

Household autonomous thermal panel works in absolute autonomy, without external supply of energy or controllers.

Photovoltaic cooled cells panel is the first where the uniformly cooling operation is possible without additional costs. Moreover, it avoids energy dispersion thanks to a system of thermal energy recovery.

However, the main and more innovative aspect is the possibility to produce the panels in the country of utilization, reducing final costs of solar energy harnessing.

### Main Advantages:

- 1 – Good ratio weight/sqm. absorbing area
- 2 – Extremely resistant
- 3 – Modular concept
- 4 – Low costs
- 5 – Total autonomy
- 6 – Computerised construction and assembling programme available

Keywords: Renewable Sources of Energy; Photovoltaic Systems, Cells and Modules Manufacturing; Solar Energy; Other Energy Topics; Electricity Generation and Storage; Heat Transfer, Transmission and Storage

Current Stage of Available for demonstration

Intellectual Property	DEVELOPMENT_STAGE <i>Comments</i> e Italian patents applied for but not yet granted
Organisation	Other
Organisation	<50
: Application domain:	ENERGY <i>Comments</i>
Market Application:	Keywords Alternative Energy; Solar energy; Photovoltaic solar; Other Energy; Other Consumer Related (not elsewhere classified)
:	Highlights - For all those applications requiring thermal energy at low temperatures, e.g. heating home sanitary water, public showers (in summer sunny day, can provides heat water for up 100 showers).
Collaboration	Joint venture agreement; License agreement; Commercial Agreement with Technical Assistance; Manufacturing agreement (Subcontracting & Co-contracting); Financial Resources

*Comments*

The main advantage of this technology is that it allows the production of some or all components of solar panels  
The company seeks partners from energy sector for joint-venture agreements.  
in the country of utilization using the same assembling instruments and labour force for the three models.

Zaujala Vás tato nabídka a chcete znát kontaktní údaje? – CIRC (Czech Innovation Relay Centre) Vám potřebné údaje sdělí - panacek@tc.cas.cz.