

ELFO 2.0

15 February 2018



Applicant: **ElettroRava**

Project Partners:

- **Capetti Elettronica S.r.l.**
- **Tomware Scarl**
- **Azzimonti S.p.a.**

One of the most interesting solar energy developments in last years, is the success of thin-film photovoltaic panels, capable to transforming solar light into electricity.

ELFO 2.0 research project, looks to improve its use and innovation, especially in the domotics sector, where the large surface area, low cost and long life, are important commercial constraints.

The objective is to develop an innovative technology, that allows to overlap flexible photovoltaic modules (*PV*), on electrochromic windows (*EC*), to integrate the photovoltaic elements into building components (*PV-EC*), maintaining the glass transparency.

This allows for take advantage of the windows, to improve the comfort of buildings and produce electricity, with 10 to 15% energy saving and the ability to control this system even remotely.

The project is entrusted to four companies, supported by some research centre.

Capetti Elettronica deals with the window brightness control module and the high efficiency inverter module design and development, for the photovoltaic energy conversion.

The active PV-EC windows wireless control nodes, are integrated into the system to allow real-time interaction with the environment, adapting it to the needs of the building in terms of luminous flux and shielding from the sun's rays.

The wireless technology used, drastically simplifies the measurement system installation, reducing installation time and costs, with complete wiring elimination.

The monitoring and control system can be interfaced with the supervision software (*or with any BMS*), using standard protocols and allows remote management of desired environmental parameters.

[ElettroRava](#), electromechanical sector, coordinates the project activities and deals with the design and construction of a pilot plant for vapor deposition (*RF Sputtering*) of photovoltaic and electrochromic films.

[Tomware Srl](#) deals with the surface control system architecture, through various PV and EC functions, detection and control devices, study of the dialogue between the various equipment, through wireless protocols and viewing and consulting data platforms.

[Azzimonti Spa](#), a company specializing in the high-security facades and structural interiors construction, deals with the PV-EV windows assembly and compliance with regulation verification.