

IPV Conference 2025 highlights

Second edition, greater ambition

The **Integrated Photovoltaics Conference**, the flagship event of the **Seamless-PV** project (and organized by ETA Florence), has just concluded its second edition, hosted in the prestigious premises of the Florence Chamber of Commerce. The conference saw over 250 registered people from the PV industry, the Architecture, Landscape Architecture Agriculture, Research and Practice sectors, exchanging views, networking, and showcasing novel applications in the field of integrated PV.



The discussion that spanned over two days was extremely rich and diverse (from integration of PV in vehicles, farmland, and buildings), showcasing several pilot projects and proven realizations from all over Europe. Now, let's have a look at the main takeaways of the conference.

◀ *The exhibition and networking area at IPVC 2025*

Sessions' highlights

◆ The session “**Solar as a Way of Thinking**” opened the conference by establishing a dialogue between R&D and exemplary real-world practices in BIPV, where applied research, architecture, engineering and institutional vision converge. Building on the innovation trajectory in BIPV introduced by Pierluigi Bonomo (SUPSI), the session focused on a landmark European regeneration project, highlighting how the Campus Goccia development at Politecnico di Milano represents far more than an energy solution: it embodies a cultural and design-driven approach to the energy transition. Through the contributions of Elisabetta Trezzani (RPBW), Paolo Cresci (ARUP) and Mario Motta (POLIMI), three key ideas clearly emerged:

Solar as a Civic Mission – The transformation of a former industrial site into a new urban campus demonstrates how solar can serve society by shaping places where communities live, learn and interact.

Solar as Design Beauty – Photovoltaics are not merely devices, but elements capable of defining space, light and architectural language.

Solar as an Integrated Process – Innovation in solar architecture arises from a shared design culture in which architects, engineers and institutions shape a common vision.

◆ The **Agrivoltaics** session showcased concrete realizations from Germany, Greece, Italy and Spain, where PV modules are integrated in the farmland landscape in complete harmony, providing also multiple benefits from the economic and environmental point of view. The challenge is not only technical and related to the best product to use, but also to the role that these installations play for farmers, the territory and the biodiversity that inhabits it



Among the points touched: the experience of ETA Florence in the integration of PV panels in agricultural landscapes, challenges and quality parameters of the vertical agrivoltaics panels, pioneered by the company Next2Sun, Life Cycle Assessment of a real existing agrivoltaics plant in Spain, Low-code platforms and AI to optimize and automate PV authorization processes.

Case studies employing organic photovoltaics and data-driven analysis on crop yields to measure the positive impacts of agrivoltaics installations.

◆ **PV on vehicles.** We don't often think that vehicles can be another option for installing solar power. Three leading companies in this sector presented their achievements and lookout. Rupert Kogler (Lightyear) showed how maximizing active solar surface and improving power electronics can significantly extend driving range on private cars.

Adding solar panels can reduce charging events by up to four times, provide 10–30 km of free, zero-emission range per day, and cut lifetime CO₂ emissions by 30% compared to standard battery-electric vehicles. VIPV also enables 20% smaller batteries and 25% lower grid demand.

Robert Händel, CEO of OPES Solar Mobility, presented the **Matrix Interconnection technology**, which dynamically adapts to shading and delivers up to 70% more power under partial shading. OPES modules use a patented lightweight embedding (only 3.1 kg/m²) and will reach large-scale production in 2025 in Germany and through their long-established facility in China.

A new view on PV on Vehicles gives the project on placing modules on the roof of the million trucks on European highways, offering a significant CO₂ reduction potential. Ruud Derks (IM Efficiency) illustrated how solar integration is turning trailers into mobile solar parks. Their SolarOnTop system can save over 1,500 kWh or liters of fuel per year, powering onboard electronics or acting as a range extender for electric trucks.

◆ A constructive discussion took place among three **industry leaders** that have decided to support the IPV Conference this year. At first, the three companies presented their strong points:

- **3S-Swiss Solar Solutions** showcased their custom-made BIPV panels used for roofs and facade covers.
- **Standex**, a global company active in different fields of application, presented its set of enabling technologies that can boost the efficiency and uptake of PV applications.

- **Ecoprogetti**, an Italian leader in the production of industrial machinery for the production and recycling of Solar panels.



After presenting, their respective products and experiences, the industry representative acknowledged that Europe is at a crossroads. There are still relevant strong points and competitive advantages to exploit, especially in BIPV, but the massive industrial capabilities of China obviously pose a great challenge to the entire European value chain.

◆ The conference saw many other insightful interventions that cannot be listed here for reasons of space. They will all be gathered in the conference proceedings (under preparation). However, we would like to mention two additional ones.

Joseba Ormaetxea Orobengoa (Tecnalia) presented the application of new extended stress sequences (mechanical stress, thermal fatigue, and combined UV and humidity-freeze tests) to characterize the durability of innovative BIPV products, leading to a possible certification scheme.

Regarding the importance of flexibility and optimization of IPV production through the use of pre-laminates, Alessandro Virtuani recalled that materials such as CSEM's iPO, offer greater flexibility in the process and provide mechanical and environmental protection during storage before final lamination, proving stable in Damp Heat and Thermal Cycling tests.

For the first time the Conference also offered the space to EU projects to set-up a parallel events on PVs integration as for the Expert Panel organized by the University of Florence- DIDA Landscape Design Lab on the integration of PVs in nature and agriculture land uses in the scope of the Interreg Project "Cooperation and Co-designing Partnership for Climate Neutrality, with the participation of University of Florence- DAGRI and BIO.

See you in 2026

The organizing team from ETA Florence is thankful to all sponsors who made this conference possible: **3S, Ecoprogetti, Standex, Next2Sun** and **KEY – The energy transition expo**. Thanks to the media partners **PV magazine, Solare B2B, Quotidiano Energia, Energy tech review** and **Canale Energia**. Special thanks go to the the whole Program committee, to the Conference Chairman Francesco Frontini, Director of ISAAC at SUPSI in Switzerland, the Programme Coordinator Heinz Ossenbrink, former European Commission and senior advisor at ETA Florence, and Sergio Matalucci from PV Magazine.

With the eyes set on the third edition scheduled for 2026, ETA Florence once again thanks all the participants and supporters, hoping to make the next edition an even more vibrant and insightful event.

Event statistics
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