Seamless-PV

FACTSHEET #1

Building-Integrated Photovoltaics

The project

Seamless-PV drives the implementation of new integrated photovoltaic (IPV) solutions in different market sectors. The objective is to develop advanced manufacturing equipment, processes and digitalisation strategies focusing on glass-glass lamination as well as lightweight composite and polymer-based technologies.

Facing at real industrial environments and different market demands and opportunities, Seamless-PV sets up six pilot line levels and 11 different IPV demo cases across Europe, divided between integration in noise barriers, buildings, electric vehicles, and agriculture.

BIPV – Building-Integrated Photovoltaics

Buildings are responsible for around 40% of energy consumption and 36% of CO2 emissions in the EU, making them the single largest energy consumer in Europe. Addressing European energy and climate goals in construction sector means going towards carbon-neutral buildings and energy efficiency improving the energy performance of our buildings and developing a power sector based largely on renewable sources.

In this context, photovoltaic power generation emerges as a key pillar in the transition to a clean energy system and the interest for integrated solutions has grown significantly in the past few years. In the architecture world, building-integrated photovoltaics (BIPV) has started to consolidate in the market, slowly but steadily gaining adoption and settling as a more mature, recognised and reliable technology.

Solar panels integrated in the facade of a University building in Florence.

Looking at the future uptake of BIPV products, SEAMLESS-PV project addresses the manufacturing challenge, by achieving a huge step forward in terms of new flexible PV manufacturing capacity and pilot-demonstration

Specifically, it will work on (i) a flexible tabber-stringer designed to be compatible with upcoming mono and poly crystalline silicon cells in full size or cut cells (half, third, quarter) allowing the use of variable cell interdistances, (ii) ECA-based tabber-stringer for HJT technology enabling the use of black ribbons/wire along with paving or gapless or shingling interconnection and (iii) two flexible tabber-stringers for Zebra cell technology, compatible with ribbon and ECA-based conductive foil interconnection technologies. An equipment allowing the automatic bussing of customized BIPV modules and a new prelamination approach for customized IPV modules will complement the new manufacturing capacity.

Based on the new manufacturing capacity, final products will be demonstrated in four locations, two buildings in Italy, one in Switzerland, and one in Belgium.

CONSORTIUM

Seamless-PV-project

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