



Infrastructure-Integrated PV

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.

IIPV - Photovoltaic integration in noise barriers

Integration of photovoltaics in infrastructures (IIPV) has an enormous potential and photovoltaic noise barriers (PVNBs) are the example of such emerging market. As indicated by Eurostat, the European Union counts more than 110 000 km of railways and more than 70 000 km of motorways, which could translate into almost 20 GWp of PVNBs installed.

Looking at the state-of-art, there are some examples of PV noise barriers covering a variety of photovoltaic technologies and encapsulation materials but there is a significant room for innovation. In fact, current PVNBs solutions have mostly been designed under a primary energy generation perspective while the acoustic performance is scarcely addressed.



Since the main functionality of a noise barrier is providing noise abatement, new PVNB products will therefore have to fulfil the dual role of noise abatement and energy generation in a single integrated element. Based on this notion, SEAMLESS-PV project is developing new PVNBs, that still focus on acoustic attenuation (in compliance with regulation's standards and requirements) while efficiently producing renewable energy at a cost-competitive price.

The PVNB developed in SEAMLESS-PV will be ideal for installation in different environments, like highways/railways/residential environments and train stations.

Different designs as well as varying glass and encapsulant thicknesses will be tested, pursuing an optimal trade-off between mechanical and acoustic properties and PV performance. These PVNB will have improved reflective and absorbing performance in order to broaden the market opportunities for such products.

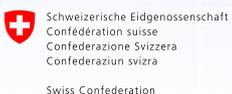
SEAMLESS-PV will demonstrate the products in the Bizkaia Connected Corridor living lab in Spain. BECSA will lead the design, with support from Onyx Solar Energy and TECNALIA.

CONSORTIUM



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