Smart Solar Power in Europe – Intersolar, Munich, 16 May 2019

Workshop Summary

“PV integration in buildings and infrastructures”

PV integration in buildings and infrastructures

Moderator: Stefan Nowak

Approach

The workshop was structured in three phases:

- Introduction
- Challenges and needs?
- Opportunities and solutions!

The workshop started with an introduction round where participants shared their expertise and experience especially related to the workshop topic „PV integration in buildings and infrastructures“.

The workshop was based on an open “plenary “session (with a number of participants allowing for an exchange involving everyone in one group).

The approach of the workshop followed the sequence from challenges and needs to opportunities and solutions. The first part of the discussion was focussed on challenges and needs the participants perceive in their field of expertise and activities as well as in the larger context of PV integration in buildings and infrastructures. In the second part of the discussion, participants identified and elaborated research and innovation opportunities for and solutions with PV.

Results

Based on the challenges and needs identified, the participants presented, discussed and explored opportunities for PV to become a more attractive and versatile part of buildings and infrastructures. The results are summarised in a list of key aspects including the challenges and, at the same time, the opportunities for PV. Generally speaking and summing it up, the most crucial aspects for PV in buildings and infrastructures turned around the main theme of the workshop, i.e. integration - in a narrow and broader sense.

Key aspects and selected issues for future research and innovation projects / topics for future transnational calls are:

- Construction and renovation procedures: integration of PV in the (mostly conservative and highly formalised) procedures from planning to installing, i.e. accessible and implementable for the professionals active in the construction and renovation sector; emphasis was made that the topic of renovation should receive more attention as it concerns a large potential of existing buildings.
- Materials and building elements: integration of PV in / as « standard » and / or customized element and prefabricated product, largely acceptable by the building sector and related key markets, also with respect to mechanical mounting solutions and cabling
- Regulation: integration of both architectural and electrical certifications for PV products and services, providing THE integrated solution for buildings and infrastructures

- Aesthetics: integration of aesthetic requirements being largely acceptable (which is an opportunity for new solar-active materials) and being respected throughout the lifetime (e.g. preventing aesthetic degradation)
- Durability and lifetime: integration of reliable and clever approaches fitting with typical building refurbishment requirements and practises (cycles of around 40 to 50 years) otherwise maintenance can become complex and expensive
- Costs: integration of valuable services providing added value and best-option-solutions e.g. for fulfilling existing and future building regulations / directives (business case for net Zero-Energy Buildings and Plus Energy Buildings)
- Functionality: integration of smart interfaces / functions (e.g. module level power electronics, smart converters) for power and energy management services from distributed PV for wireless systems (Internet of Things) to power / energy supply for buildings and beyond

Photo: Workshop session on PV integration in buildings and infrastructures

Photo: Results of the workshops presented in the final plenary session Conclusions of the Day with several promising findings for future cooperation between research and industry as well as between the two networks of SOLAR-ERA.NET and ERA-Net SES