

INNOVATION IN SOLAR BUILDING SKINS & ENERGY EFFICIENCY TOWARDS SUSTAINABLE CITIES

BERLIN, 19th - 20th MARCH 2018



The initiative is a series of European workshops and conferences in the field of Energy Efficiency in buildings and cities with a focus on **innovation in solar building skins / building integrated photovoltaics (BIPV)**, as well as related to areas such as smart grid, storage of renewable energies in buildings/cities, e-mobility and Internet of Things (IoT).

The events are organized by leading European national research institutes together with SETA Network and in collaboration with the BIPV group of the European Technology & Innovation Platform Photovoltaics (ETIP PV), supported by national industries, stakeholder and associations.

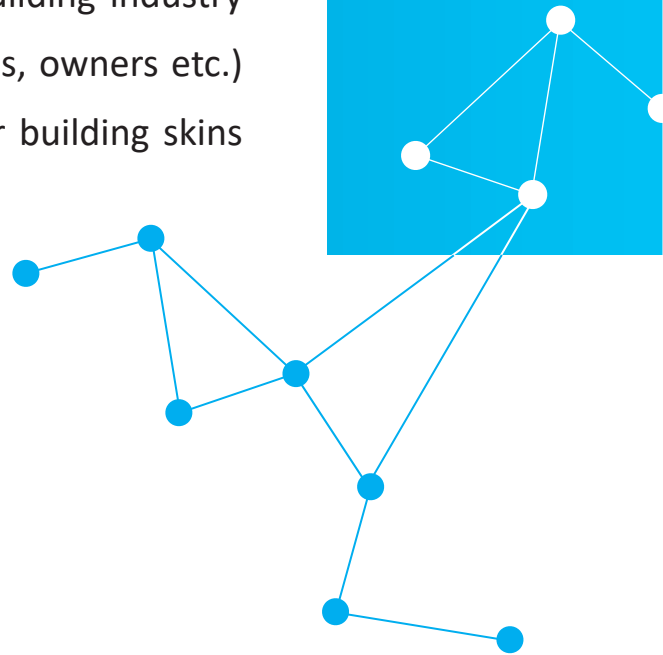
Programme for **Berlin**
event available

EVENTS in Brussels | Berlin | Madrid | Paris | Amsterdam

Supporters of the German event

A market pull approach is central to these workshops to answer the following **KEY QUESTIONS** :

- **What innovation**, be it aesthetical, technological, legislative, financial or otherwise, **is required** by the building industry stakeholders (developers, planners, architects, owners etc.) to enable massive-scale deployment of solar building skins and BIPV?
- **What is required to stimulate innovation** among investors, building and PV sector, through an interdisciplinary collaboration?





BACKGROUND

Today, around 75% of Europeans live in cities. Urban areas account for 60 to 80% of global energy consumption and around the same share of CO₂ emissions. Under business-as-usual projections, global energy use in buildings could double or even triple by 2050. Renewable Energy and in particular BIPV are an important option and have a huge potential in this context, together with energy efficiency measures. These are the core elements for Sustainable Cities.

Enhanced innovation is required In order to explore the business opportunities for further development of solar building skins and BIPV into a mass-market. Essential in this regard is to foster collaboration among the stakeholders of the Building Industry, PV industry and Smart Grid. Buildings are interconnected in cities and therefore, beside their potential of large-scale BIPV usages, the interaction with other areas have also to be considered, such as Energy Efficiency, Building Management Systems, Storage, e-Mobility, Internet of Things (IoT) and Digitalisation, etc.

‘Buildings increasingly interact with the energy system and have the potential to take up an important role in the power supply system stability by becoming micro energy hubs, which generate energy with on site renewable systems, provide storage for electric and thermal energy and deliver demand response.’¹



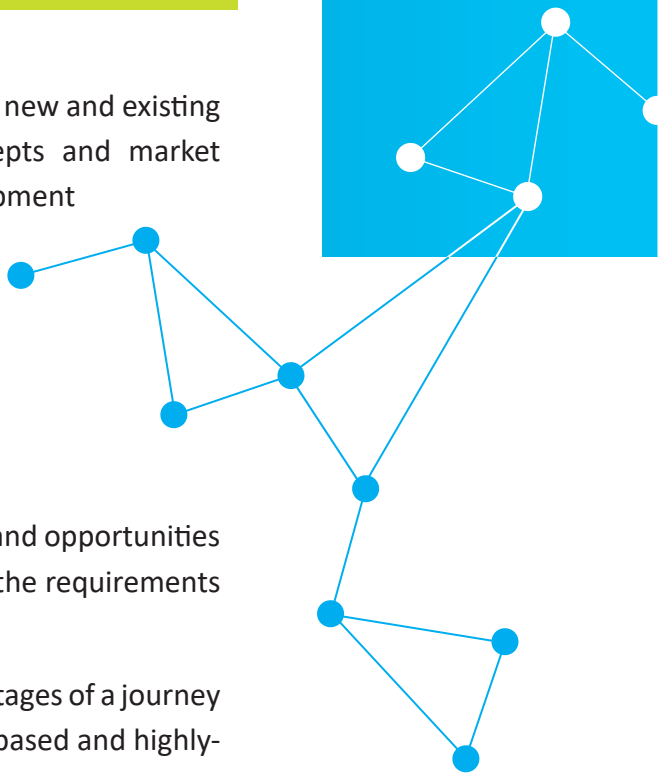
¹ Buildings as micro energy-hubs delivering climate solutions (BPIE)

FOCUS

Within the context of energy efficiency in buildings and cities for new and existing building stock, the development of innovative design concepts and market approaches are essential for the future innovation and development of the BIPV market, as well as the development of related national value chains. **Key issue is the collaboration among the various stakeholders** of the building design and construction process, such as architects, research institutes, building material industries, developers, building owners of private and commercial buildings and specialized PV/BIPV industry.

The various national workshops are based on the specific needs and opportunities of the respective national market structures in connection with the requirements for **NZEBs and Positive Energy Buildings**.

The European building stock and energy system are at the initial stages of a journey towards becoming smart: moving from a centralised, fossil fuel-based and highly-energy-consuming system towards one that is more **efficient, decentralised, consumer-focused and powered by renewable energy, with large potential for BIPV**. The international law to limit global warming to below 2°C following the Paris Agreement puts a renewed emphasis on the need for Europe to accelerate the smart energy transition.



PARTNERS / SUPPORTERS

The European events are prepared in close collaboration with the respective national Ministries and the SET Plan representatives of the European countries. The objectives of the national events are fully in line with the SET Plan, with the Implementation Plan activities and with the Energy Union key priorities of Innovation and Competitiveness, including the interdisciplinary collaboration of the various stakeholders and sectors.

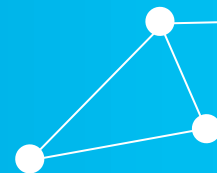
The German event is supported by the: European Technology & Innovation Platform Photovoltaics (ETIP PV), German Sustainable Building Council / Deutsche Gesellschaft für Nachhaltiges Bauen (DGNB), Federal Chamber of German Architects / Bundesarchitektenkammer (BAK), Buildings Performance Institute (BPIE), Allianz BIPV, Berlin-Brandenburg Energy Network, European Technology & Innovation Platform Smart Networks for Energy Transition (ETIP SNET), DENEFF – Deutsche Unternehmensinitiative Energieeffizienz (German Industry Initiative for Energy Efficiency).

Supporters of the German event:



Media partner of the German event:





Organized by: **Helmholtz Zentrum Berlin and SETA Network**

supported by European Technology & Innovation Platform (ETIP PV) BIPV Group, Brussels, German Sustainability Building Council (DGNB), Bundesarchitektenkammer (BAK), Buildings Performance Institute (BPIE), Allianz BIPV, Brandenburg Energy Network, European Technology & Innovation Platform Smart Networks for Energy Transition (ETIP SNET), German Industry Initiative for Energy Efficiency (DENEFF).

19th MARCH 2018 (1. Day)

13.30 Registration / Coffee

14.00 – 15.30 Part 1: Contextual Introductions

- Welcome by **Rutger Schlatmann**, Helmholtz Zentrum Berlin, Institute PVcomB, Director
- **Claude Turmes**, Member of the European Parliament / **Eufores**, President
From near-zero energy buildings to „positive energy“ buildings
- **Thorsten Herdan**, German Federal Ministry for Economic Affairs and Energy, Director-General
Efficiency and Renewables – the twins for zero emission buildings
- **Frank Heinlein**, **Werner Sobek Group**, Director Business Communication
Sustainability in the Built Environment - Towards an Integrated Approach
- **Silke Krawietz**, **ETIP PV**, BIPV Group leader / **SETA Network**, CEO
Smart Cities: Potential for Energy Efficiency and BIPV Innovation

15.20 – 15.30 Q & A session

15.30 – 15.45 Coffee Break

15.45 – 17.40 Part 2: Metropolitan Solutions Sector (Buildings + Cities)

Overview of status/wishes/strategy of the local/national building sector

- **Hille Bekic**, Executive Board member, **Berlin Chamber of Architects**, in charge of Digitalisation; S3A Office for Architecture + Interior Design
- **Oliver Rapf**, **Building Performance Institute (BPIE)**, Director, Brussels
The future role of buildings in urban systems
- **Carolien Gehrels**, **Arcadis**, European Director Big Urban Clients, Germany
Solar energy in cities: reinventing public private partnership
- **Nicolò Guariento**, **ARUP**, Building Envelope Design, Associate, Berlin
Design Drivers for Building Integrated PVs

Panel discussion with Stakeholders and Investors

Metropolitan Solutions Sector (Buildings + Cities), moderated by Oliver Rapf

- **Christine Lemaitre**, **DGNB - German Sustainable Building Council**, CEO
- **Martin Bornholt**, **DENEFF e.V.**, German Industry Initiative for Energy Efficiency, CEO
- **Franz Karg**, **Triumph Science and Technology (Avancis)**, Chief Technology Manager
- **Carolien Gehrels**, **Arcadis**, European Director Big Urban Clients, Germany
- **Frank Heinlein**, **Werner Sobek Group**, Director Business Communication
- **Agustín Escardino Malva**, **EC, DG R&I, New and Renewable Energy Sources**, Deputy Head of Unit
- **Silke Krawietz**, **ETIP PV**, BIPV Group leader / **SETA Network**, CEO

17.40 – 17.50 Q & A session

17.50 – 18.00 Closing remarks

18.00 – 19.00 Reception and Buffet

20th MARCH 2018 (2. Day)

09.00 Registration / Coffee

09.00 – 09.10 Introduction

09.10 – 09.30 Agustín Escardino Malva, European Commission, DG Research & Innovation, New and Renewable Energy Sources, Deputy Head of Unit
EU innovative financial instruments supporting clean energy innovation

09.30 – 10.30 Part 3: Specific developments, products & innovation

- **BIPV and architectural envelopes companies**
- **BIPV R&D in national labs** (overview presentation)
- Q&A Session

10.30 – 10.45 Coffee Break

10.45 – 12.15 Part 4: Parallel workshop sessions

A market pull approach is central to these workshops to answer the following key questions:

- ***What innovation, be it aesthetical, technological, legislative, financial or otherwise, is required by the building industry stakeholders (developers, planners, architects, owners etc.) to enable massive-scale deployment of solar building skins / BIPV?***
- ***What is required to stimulate innovation among investors, building industry and PV industry through an interdisciplinary collaboration?***

In the following working groups, different aspects of the workshop's key question will be addressed and the various issues discussed should lead to an effective approach to stimulate Innovation within the Energy Efficiency and BIPV sector:

1. New buildings / Focus on innovation of solar building skin technologies / BIPV

Chair: Nicolò Guariento, ARUP, Building Envelope Design / Gregor Kassl, ARUP, Berlin

- National developers' and building industries' approach for integration of energy efficiency measures and solar building skin technologies / BIPV into **innovative design concepts**.
- Development of an innovative approach for **facade integration of BIPV** with building envelopes companies, together with developers, architects and investors for specific projects.

2. Existing building stock / National real estate companies:

Chair: Dr. Christine Lemaitre, DGNB, CEO

Development of market approach for renovation of **existing building stock** with innovative building skin technologies / BIPV and energy efficiency concepts. Evaluation of various BIPV solutions, based on stakeholders' needs.

3. BIPV-technological needs and opportunities for the national building material and PV industry;

Chair: Sebastian Lange, Allianz BIPV

Input for national research and development approach

4. Financial mechanisms / Improvement of financial conditions:

Chair: Agustín Escardino Malva, European Commission, DG Research & Innovation, New and Renewable Energy Sources, Deputy Head of Unit

Financial support instruments for innovative BIPV projects in new buildings and in existing building stock

12.30 – 13.00 Part 5: Results: Where is the need for innovation, what measures should be executed?
 (reporting to full audience)

13.00 – 13.30 Part 6: Concluding remarks & actions (Silke Krawietz, Rutger Schlatmann)

13.30 – 14.30 Lunch



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This workshop is organized in the framework of the ETIP PV - SEC project. This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727272.

