

# INNOVATION IN SOLAR BUILDING SKINS & ENERGY EFFICIENCY TOWARDS SUSTAINABLE CITIES

BERLIN, 19<sup>th</sup> - 20<sup>th</sup> 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 and media partner 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 Building Industry (and PV industry, 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)/ 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.'*<sup>1</sup>



## 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 (ETIP PV), German Sustainable Building Council / Deutsche Gesellschaft für Nachhaltiges Bauen (DGNB), Federal Chamber of German Architects / Bundesarchitektenkammer (BAK), Buildings Performance Institute (BPIE), the Allianz BIPV, Berlin-Brandenburg Energy Network, European Technology & Innovation Platform Smart Networks for Energy Transition ( ETIP SNET).

### 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, Deutsche Gesellschaft für Nachhaltiges Bauen (DGNB), Bundesarchitektenkammer (BAK), Buildings Performance Institute (BPIE), Allianz BIPV, Berlin Brandenburg Energy Network, European Technology & Innovation Platform Smart Networks for Energy Transition ( ETIP SNET).

## 19<sup>th</sup> MARCH 2018 (1. Day)

13.30	Registration / Coffee
<b>14.00 – 15.30</b>	<b>Part 1: Contextual Introductions</b>
	<ul style="list-style-type: none"> <li>Welcome by <b>Rutger Schlatmann</b>, Helmholtz Zentrum Berlin, Institute PVcomB, Director</li> <li><b>Claude Turmes</b>, Member of the European Parliament / President, Eurofores</li> <li><b>European Commission representative</b>, Brussels (NN/tbc)</li> <li><b>Thorsten Herdan</b>, German Federal Ministry for Economic Affairs and Energy, Director-General</li> <li><b>Ralf Goldmann</b>, European Investment Bank, Head of Division, Energy Efficiency, Projects Directorate. (tbc)</li> <li><b>Silke Krawietz</b>, ETIP PV, BIPV Group leader / SETA Network, CEO</li> </ul>
15.20 – 15.30	Q & A session
15.30 – 15.45	Coffee Break
<b>15.45 – 17.40</b>	<b>Part 2: Metropolitan Solutions Sector (Buildings + Cities)</b> Overview of status/wishes/strategy of the local/national building sector
	<ul style="list-style-type: none"> <li><b>Tillmann Prinz</b>, Secretary-General, Federal Chamber of German Architects (Bundesarchitektenkammer BAK), Berlin</li> <li><b>Oliver Rapf</b>, Building Performance Institute (BPIE), Director, Brussels</li> <li><b>Carolien Gehrels</b>, Arcadis, European Director Big Urban Clients, Germany</li> <li><b>Nicoló Guariento</b>, ARUP, Foresight strategy, Associate, Berlin (tbc)</li> </ul>
	<p><b>Panel discussion with Stakeholders and Investors</b> Metropolitan Solutions Sector (Buildings + Cities)</p> <ul style="list-style-type: none"> <li><b>Claude Turmes</b>, Member of the European Parliament / Eurofores, President</li> <li><b>Ralf Goldmann</b>, European Investment Bank (EIB), Head of Unit, Division Smart Development (tbc)</li> <li><b>Christine Lemaître</b>, CEO, DGNB, Germany</li> <li><b>Investment Fond</b> representative (NN/tbc)</li> <li><b>Carolien Gehrels</b>, Arcadis, European Director Big Urban Clients, Germany</li> <li><b>Silke Krawietz</b>, ETIP PV, BIPV Group leader / SETA Network, CEO</li> <li><b>National/regional Organisation of the building sector</b> (NN/tbc)</li> </ul>
17.40 – 17.50	Q & A session
17.50 – 18.00	Closing remarks together with Ministry representatives (tbc)
18.00 – 19.00	Reception and Buffet

## 20<sup>th</sup> MARCH 2018 (2. Day)

08.30 – 09.00	Registration / Coffee
<b>09.00 – 09.30</b>	<b>Introduction</b>
<b>09.30 – 10.30</b>	<b>Part 3: Specific developments, products &amp; innovation</b>
	<ul style="list-style-type: none"> <li><b>BIPV and architectural envelopes companies</b></li> <li><b>BIPV R&amp;D in national labs</b> (overview presentation)</li> <li>Q&amp;A Session</li> </ul>
10.30 – 10.45	Coffee Break
<b>10.45 – 12.15</b>	<b>Part 4: Parallel workshop sessions</b>
	<p>A market pull approach is central to these workshops to answer the following key questions:</p> <ul style="list-style-type: none"> <li><b>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?</b></li> <li><b>What is required to stimulate innovation among investors, building industry and PV industry through an interdisciplinary collaboration?</b></li> </ul> <p>In the following working groups, different aspects of the workshop's key question will be addressed and the issues discussed should lead to an effective approach to stimulate Innovation within the Energy Efficiency and BIPV sector:</p> <ol style="list-style-type: none"> <li><b>New buildings:</b> Focus on innovation of solar building skin technologies / BIPV: <ul style="list-style-type: none"> <li>National developers' / building industries' approach for integration of energy efficiency measures and solar building skin technologies / BIPV into <b>innovative design concepts</b>.</li> <li>Development of an innovative approach for <b>façade integration of BIPV</b> with building envelopes companies, together with developers, architects and investors for specific projects.</li> </ul> </li> <li><b>Existing building stock / national real estate companies:</b> Development of market approach for renovation of <b>existing building stock</b> with innovative building skin technologies / BIPV and energy efficiency concepts. Evaluation of various BIPV solutions, based on stakeholders' needs.</li> <li><b>BIPV-technological needs and opportunities</b> for the national building material and PV industry; Input for national research &amp; development approach</li> <li><b>Improvement of financial conditions:</b> Development and preparation of a market analysis of financial support instruments for innovative BIPV projects in new buildings and in existing building stock (financial institutes, specialized banks, developers, building material industry, BIPV industry, BIPV consultants, building industry representatives).<sup>2</sup></li> </ol>
<b>12.30 – 13.00</b>	<b>Part 5: Results: where is the need for innovation, what measures should be executed?</b> (reporting to full audience)
<b>13.00 – 13.30</b>	<b>Part 6: Concluding remarks &amp; actions</b> (Silke Krawietz, Rutger Schlatmann)
<b>13.30 – 14.30</b>	<b>Lunch</b>

<sup>2</sup> based on the EEFIG report prepared for European financing mechanisms for energy efficiency projects; suggestion for new report: 'How to integrate innovative BIPV projects into existing and new EE financing mechanisms'





## EVENTS in Brussels | Berlin | Madrid | Paris | Amsterdam



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