

BUILDING INTEGRATED PHOTOVOLTAIC (BIPV): TRAINING WORKSHOP AND GUIDED TOUR

Introduction PVSITES project

Eduardo ROMAN, TECNALIA

CRICURSA, 07 Nov 2019



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 691768



PVSITES: Quick facts

Funding EU: 5.47 M€ (+ 1.4 M€ Switzerland)

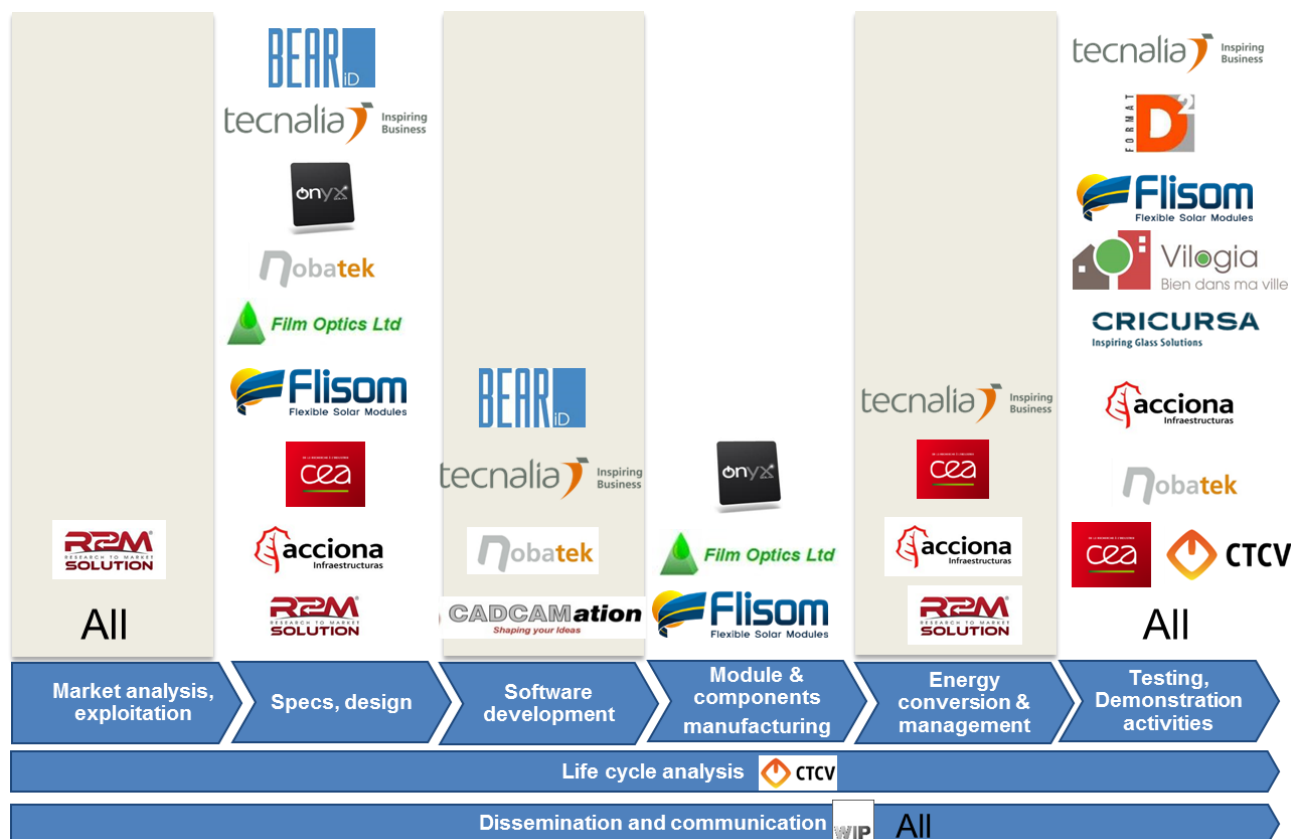
01/01/2016 – 30/06/2020

Contact: Dr. Eduardo Román –
eduardo.roman@tecnalia.com

Coordinator: Tecnalia R&I
Website: www.pvsites.eu

15 partners

Spain (4)
 France (3)
 Switzerland (2)
 Portugal (1)
 Germany (1)
 Italy (1)
 Netherlands (1)
 Belgium (1)
 UK (1)



PVSITES: Objective and challenges

General objective: To drive BIPV technology to large market deployment led by EU industry

To be achieved by:

- Identifying and addressing BIPV market / business requirements
- Demonstrating in real buildings (TRL5 to TRL6-7) an **ambitious portfolio of BIPV solutions** in terms design and simulation, architectural integration, performance, cost-effectiveness, grid integration, energy management, LCA, training and awareness

Market challenges

Enhanced flexibility of design, outstanding aesthetical value, multi-functionality and cost-effectiveness

Assistance to design phase through the joint simulation of BIPV products and building energy performance

More predictable, manageable, grid-friendly profitable BIPV generation

Demonstration of performance and reliability of BIPV solutions through effective incorporation onto real buildings

PVSITES: challenges

Challenge: Enhanced flexibility of design, outstanding aesthetical value, multifunctionality and increased performance

Solution: A wide portfolio of BIPV products based on c-Si and CIGS technologies complying with market requests



Glass–glass crystalline silicon based solutions (ONYXSolar), developed in PVSITES



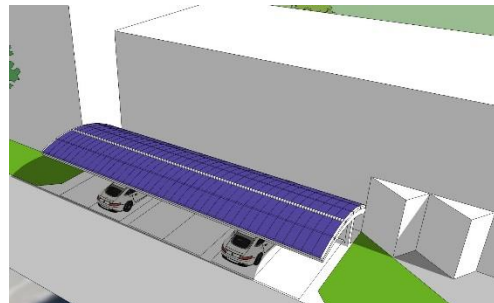
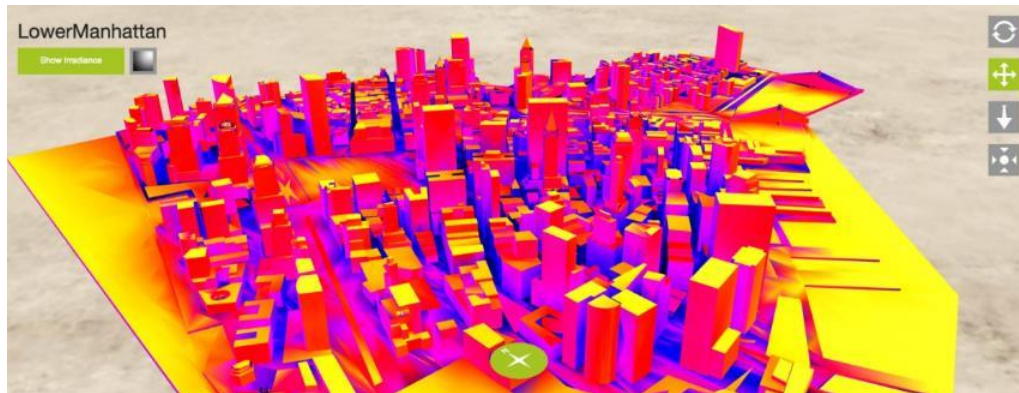
CIGS on metal BIPV modules (FLISOM), developed in PVSITES



PVSITES: challenges

Challenge: Software tool for the joint simulation of BIPV products and building energy performance

Solution: An accurate, user-friendly, integrated SW tool for the simulation of BIPV products performance and their impact on building energy demands



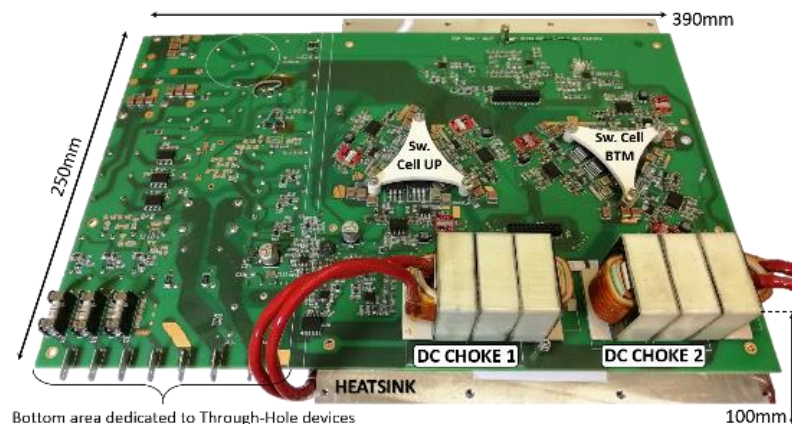
PVSITES: challenges

Challenge: More predictable, manageable, grid-friendly and profitable BIPV generation

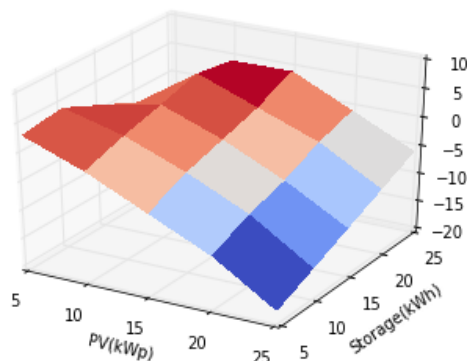
Solution: A combination of flexible and high efficiency grid interface for BIPV systems and new building energy management strategies.



DC/AC converter,
TECNALIA



CEA's inverter printed circuit-board with
surface-mounted electronic components



Planner tool, TECNALIA

PVSITES: challenges

Challenge: To demonstrate reliability of advanced BIPV solutions through effective incorporation onto real buildings

Solution: High impact, replicable demonstrations and training activities in real buildings and experimental facilities throughout Europe

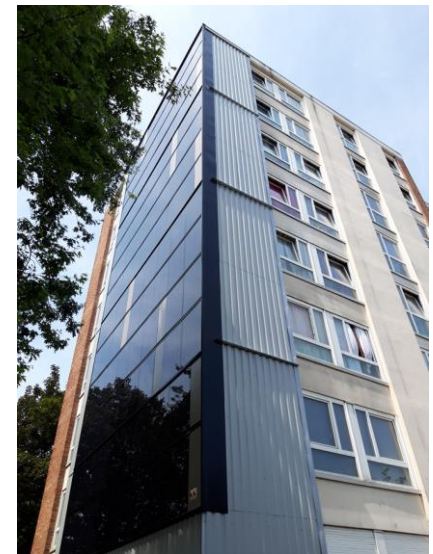


Carport, Zürich (SW)

Roof, Stambruges (BE),
residential

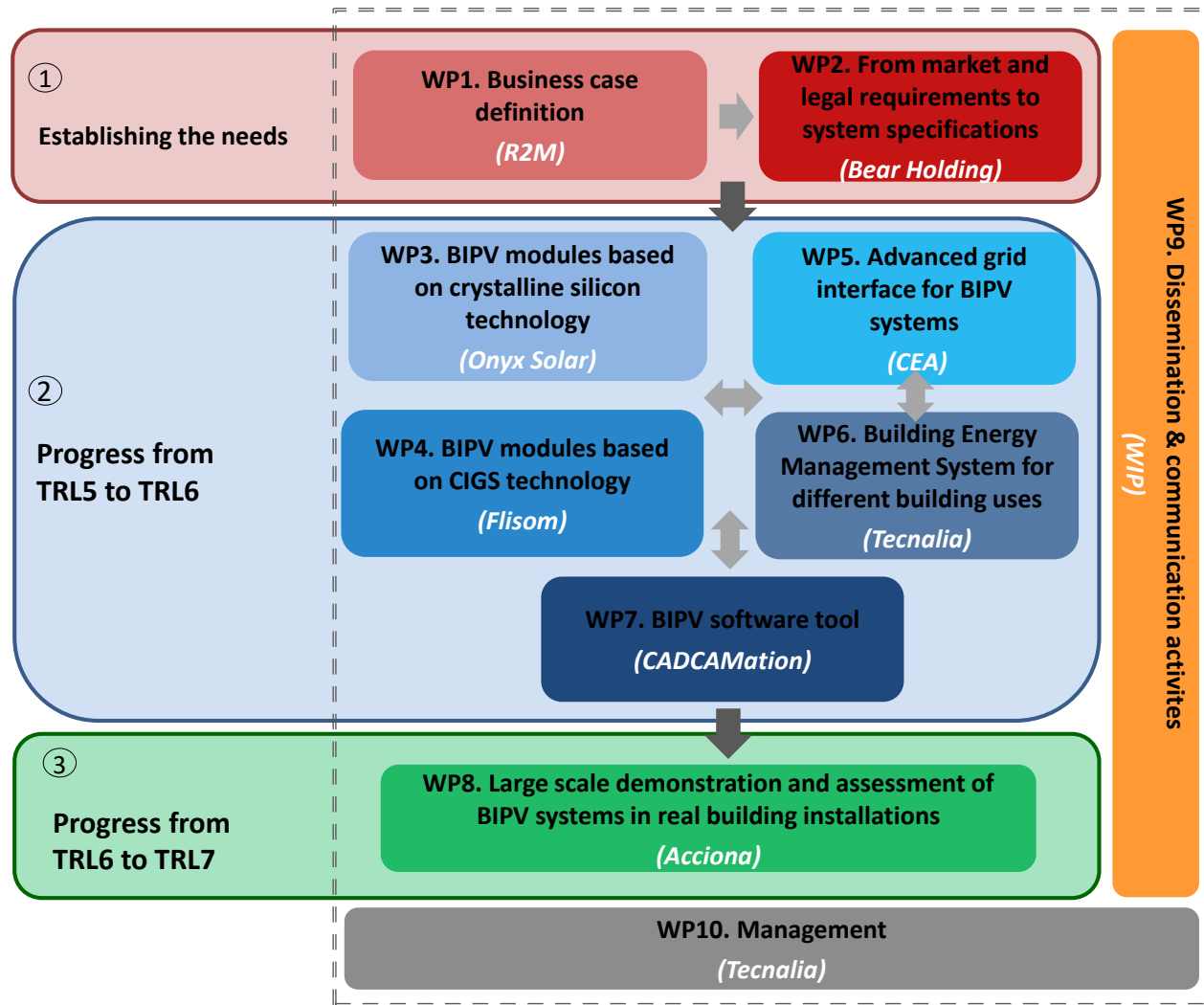


Opaque facade, Wattignies (FR),
social housing



PVSITES: Implementation

WorkPlan



PVSITES: Achievements (PV techs)

Market related activities:

- Market and stakeholder analysis conducted.
- Assessment of regulatory framework
- Application of the new BIPV standard, EN 50583 (2016)
- Analysis of exploitable results (26 ERs, with commerc., IPR paths).
- Standardization needs for project results.
- Business models for BIPV.
- Global risk assessment.
- ...

PVSITES in the market

PVSITES in the market – CIGS products



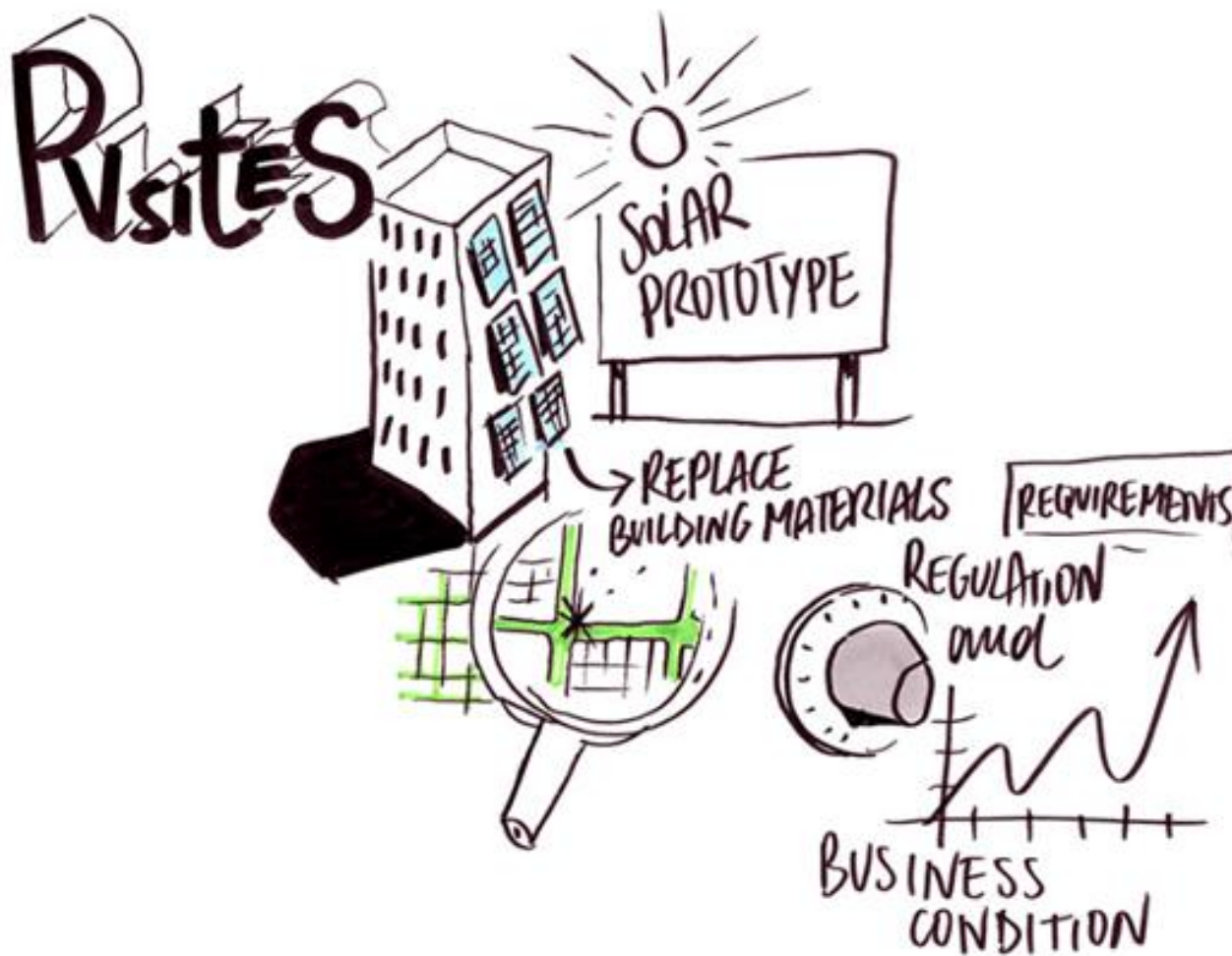
250 kW installation of e Flex CIGS product (FLISOM) in a flowers market in Johannesburg (SA)

PVSITES in the market

PVSITES in the market – c-Si products



Black frit PVSITES modules in Atic in Castle Lane Street, close to Buckingham Palace, London (Onyx Solar)





**Visit our website and
subscribe to our news**



PVsites

www.pvsites.eu