

Welcome

*How the sector is changing: technical,
economical and societal aspects*

SPHINX PUBLIC WEBINAR



TECHNICAL



ECONOMICAL



SOCIETAL

How the sector is changing: technical, economical and societal aspects



SPHINX stories: Challenges encountered and results achieved
(Mehdi Sahli, VOL)

BIPV: Balancing Building Requirements and Human Comfort
(Simon Boddaert, CSTB)

Advancing BIPV Standardization
(Francesco Frontini, SUPSI)

Cost competitiveness of IPV solutions
(Ian Kenchington, BI)



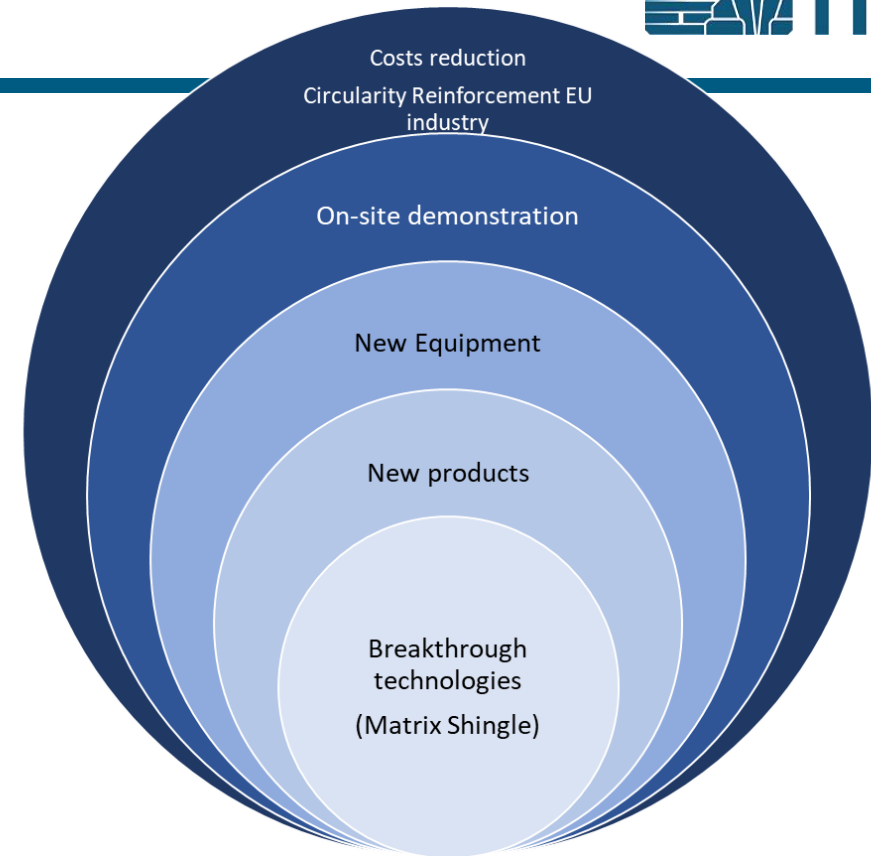
SPHINX stories: Challenges encountered and results achieved

Mehdi Sahli, VOL

The project at a glance



Demonstration of BIPV elements produced by EU-based disruptive matrix shingling interconnection technology allowing short construction times and low costs at the building and infrastructure locations.



14
partners

7
Countries

36
months

6 demos'

~9M€
costs

>5 M€ EU
funding



Planned Demonstrators

EPFL :: csem

Fraunhofer



SOPREMA
GROUP

Heliup

Industrial
Buildings
Renovation



VOLTEC
solar



FREE SUNS
SOLAR ROOFS



Individual
house
(including
Façade)

SPH INX

Infrastructure
PV Integration :
CarPort and
Noise barrier



etway
energy transport way



Heritage
buildings &
Renovation

FREE SUNS
SOLAR ROOFS

Monitoring + Energy Yield + maintenance prediction



→ Façade application

SPHINX Stories: Lightweight modules



- **Demo objective**

Semi-flexible lightweight PV for renovation on industrial buildings

- **Challenges**

Compatibility of matrix shingle technology with HELIUP bill of materials

- **Results achieved**

Full-scale lightweight modules with surface 1,49 m²



SPHINX Stories: Roof Tiles & Façades



- **Demo objective**

Validate the PV integration in terms of safety, replacement of a construction element, ease of installation and aestheticism.

- **Challenges**

Customer acceptance to install an R&D roof.

- **Results achieved**

Three operational roofs and one façades installed and under performance analysis.

Demonstrator configuration

- A 24 m² façade in Colombier
- A 270 m² roof in Pully
- A 62 m² roof in Founex
- A 85 m² roof in Arzier



SPHINX Stories: Roof Tiles for heritage buildings



- **Demo objective**

Demonstrate matrix shingle tiles technology on heritage house roof.

- **Challenges**

Achieved high-quality heritage roof tiles

- **Results achieved**

Operational roof on Swiss heritage buildings and under performance analysis.

Demonstrator configuration

58 m² heritage roof demonstrator in Rossinière, Switzerland.



SPHINX Stories: Semitransparent modules



- **Demo objective**

Total of 400 m² (about 80 kWp) of benchmark PV modules + 100 m² (about 20 kW) of new module developed.

- **Challenges**

National legislations and installation rules

- **Results achieved**

600 m² of car port modules with different SPHINX innovations (matrix shingle, coating, downshifter) plus reference VOL modules

Extra 10m² bike port

CarPort demonstrator in Dinsheim Sur Bruche, France

Demonstrator configuration

~130 kWp installed with 300 VOLTEC Solar TARKA 110 PV modules inclined by 10° and south oriented.



SPHINX Stories: Noise Barriers



Solar energy in noise barriers

SoundSolarPanel and VertiSol demonstrator in Merdingen, Germany

Demonstrator configuration

SoundSolarPanel uses inclined PV elements. VertiSol uses vertical modules. The site compares PERC, TOPCon and matrix shingle technologies



- **Demo objective**

Explore how noise barriers can host solar generation while retaining their infrastructure role

- **Challenges**

Geometry constrains and shadowing

- **Results achieved**

Both configurations are installed and under performance analysis. Acoustic measurements are complete, with evaluation ongoing.



SPHINX Stories: Urban Integration



Solar energy in urban planters

SalvaTerra demonstrator in Merdingen, Germany

Demonstrator configuration

Freestanding planter structures carry vertical PV modules. Different orientations create an outdoor test layout relevant to urban spaces.



- **Demo objective**

Explore local solar generation through outdoor furnishings that also provide space for planting.

- **Challenges**

Nothing technical. New product, still some time to full social acceptance

- **Results achieved**

Etway installed the PV planter demonstrator. The outdoor setup supports SPHINX monitoring and evaluation of urban integration.

BIPV: Balancing Building Requirements and Human Comfort

Simon Boddaert, CSTB

Advancing BIPV Standardization

Francesco Frontini & Fabio Parolini, SUPSI

Cost competitiveness of IPV solutions

Ian Kenchington, BI

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