



Horizon 2020 Supporting (BI)PV Innovation

Maria GETSIOU
European Commission
Directorate-General for Research & Innovation
Renewable Energy Sources

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Not legally binding

Policy Frame: The Energy Union

- **Energy security, solidarity and trust;**
- **A fully integrated European energy market;**
- **Energy efficiency contributing to moderation of demand;**
- **Decarbonising the economy;**
- **Research, Innovation and Competitiveness – Relevant Priorities:**
 - **World leader in developing the next generation of renewable energy technologies**
 - *Sustain technological leadership by developing highly performant renewable technologies
 - *Reduce the cost of key technologies
 - **Efficient energy systems**
 - *Develop materials and technologies for market uptake of energy efficient solutions for buildings



Which support for (BI)PV at present and in the future?

RD&D in PV is continuing to be supported within the framework of

Horizon 2020

and more specifically under the

"Secure, Clean and Efficient Energy" Challenge,

accounting for about **5.7 B€** out of a total budget of **70 B€** for the period **2014-2020**.

***The 2014/15 Energy Call selection process is complete,
the 2016/17 Work programme is available on-line***

H2020 PV strategy: the rationale behind

- PV still contributes relatively little to global electricity generation; it has harnessed only fraction of its vast potential.
- The European PV manufacturing industry faced strong foreign competition → dramatic reduction of its production capacity.
- The PV RD&D short-term strategy aims at re-launching an innovative and worldwide-competitive EU industry relying on the existing PV technology knowledge-base in Europe.
- EU PV industry needs to re-identify itself / specialise: niche markets, high-added value products, special solutions, technologically more advanced solar cell concepts, etc.
- In parallel, PV deployment has to be accelerated by further reducing the total cost of installed solar energy systems and grid-integration bottlenecks.



PV topics in the 2014/15 WP

R&D activities, two topics:

- 2014: *next-generation high-performance PV cells and modules*
- 2015: *very low-cost PV concepts and innovative applications*

Demo activities, two topics:

- 2014: *inorganic thin-film innovative manufacturing*
- 2015: *PV integrated in the built environment*



The BIPV topic

Topic LCE-3-2015 : Demonstration of renewable electricity and heating/cooling technologies

Photovoltaics: PV integrated in the built environment

“Building integrated photovoltaic (BIPV) systems will become essential elements in future net zero energy buildings provided a number of challenges are solved, e.g. integration with other functional building components, flexibility in system design, architectural and aesthetic considerations and standardisation, smart interaction with the grid, extension of the lifetime of system components, and cost reduction.”

Type of action: Innovation Action (TRL 5-6 → 6-7)

Indicative EU contribution per project: 5 – 20 M€

High subscription, proposal evaluation concluded

Not legally binding

PV topics in the 2016/17 WP

R&D activities, two topics:

- 2016: *next-generation crystalline silicon PV cells and modules*
- 2017: *perovskite PV cells and products*

Demo activities, two topics:

- 2016: *Increasing the competitiveness of the EU PV manufacturing industry*
- 2017: *Reducing the cost of PV electricity*

...in addition

Horizon prize for Integrated Photovoltaic System in European Protected Historic Urban districts



Topic LC09-2016: Increasing the competitiveness of the EU PV manufacturing industry

Specific challenge: to develop innovative manufacturing solutions that substantially improve competitiveness of the European PV industry and help regain a part of the potentially increasing worldwide PV market.

Scope: Demonstrating manufacturing innovation and scale-up of highly performing PV technologies at pilot-line level, targeting GW-scale, high-throughput and cost-effective industrial production of cells and modules.

Type of action: Innovation Action (TRL 5-6 → 6-7)

Indicative EU contribution per project: 10 – 15 M€

Proposal submission: one-stage evaluation; submission opening date: 27/05/2016; deadline: 8/09/2016



Topic LC10-2017: Reducing the cost of PV electricity

Specific challenge: much of the R&D efforts in recent years has focused on the development of high-efficiency PV cells; however, the cost of a PV system also depends on a number of other elements and components.

Scope: addressing cost reduction of PV electricity by optimising the PV system energy yield and lifetime, and decreasing cost at the level of module (encapsulation materials, glass, antireflective layers, anti-soiling layers, module architecture, etc.), BoS components (electronics, inverters, tracking systems, etc.) or system configuration.

Type of action: Innovation Action (TRL 5-6 → 6-7)

Indicative EU contribution per project: 7 – 10 M€

Proposal submission: one-stage evaluation; submission opening date: 26/05/2017; deadline: 7/09/2017

Not legally binding



Horizon prize for BIPV in European Protected Historic Urban districts

A new ***BIPV in a protected historic urban district*** with a minimum power capacity of 50 kilowatt-peak (kWp) has to be installed and operated in its premises continuously for at least six months

Type of Action: Inducement prize (following the common Rules of Contest for Prizes)

Indicative prize amount: EUR 0.75 million.

Indicative timetable of contest

Stages	Date and time or indicative period
Opening of the contest	3rd quarter 2016
Deadline for submission of application	3rd quarter 2018
Award of the prize	2nd quarter 2019

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Concluding remarks: A role for BIPV to play

- BIPV currently represents a ***niche*** market, but with a large ***growth potential***.
- BIPV offers an opportunity for EU ***PV industry to diversify and specialise*** towards highly versatile products of high added value.
- BIPV solutions have a ***cross-sectoral*** character throughout PV technologies and value chain.
- Collective effort is needed from all ***key-stakeholders in BIPV supply chain and lifecycle, to improve BIPV quality*** (overcome any technical barriers and risks in BIPV design/production, installation and operation).