



High-performance low-cost modules
with excellent environmental profiles for
a competitive EU PV manufacturing industry



This project has received funding from the European Union's Horizon 2020
research and innovation programme under grant agreement No 857793



Concept

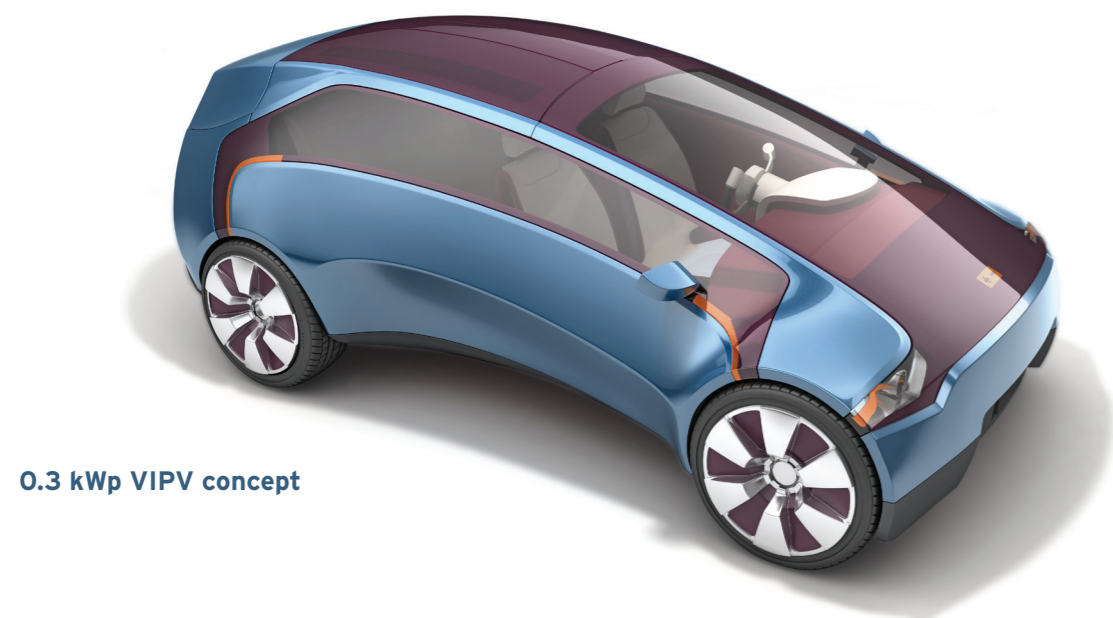


13.05 kWp BAPV system in Sweden

The HighLite project will develop and optimize innovative solutions at both cell and module levels. Both SHJ and IBC technologies will be tailored for various applications including **building-applied PV (BAPV)**, **building-integrated PV (BIPV)** and **vehicle-integrated PV (VIPV)**. The PV modules developed in HighLite will demonstrate **higher performance, lower cost, and improved environmental profiles** (carbon footprint, recyclability) compared to commercially available PV modules.

HighLite is a 3-year Horizon 2020 project aiming to increase the competitiveness of the EU PV manufacturing industry. The project will focus on bringing two competing technologies to high technology readiness levels (TRL 6-7) benefiting from the **unique strengths and expertise of cutting-edge European industrial actors and research institutions in the field of crystalline silicon devices and passivating contacts**. The first one is based on shingle assembly of 2-side contacted silicon heterojunction (SHJ) cut-cells. The second one is based on backcontact assembly of interdigitated back-contact (IBC) cut-cells with high temperature passivating contacts.

70 kWp BIPV system in Switzerland



0.3 kWp VIPV concept

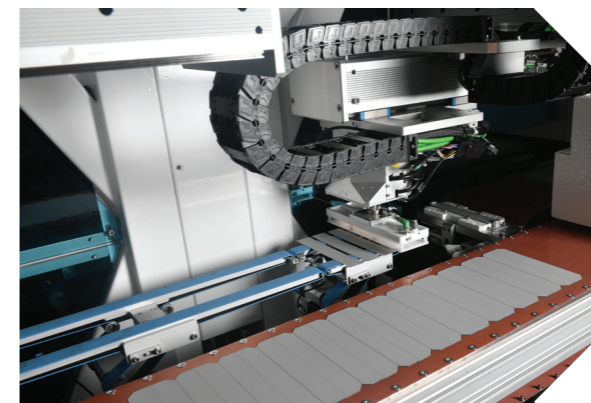
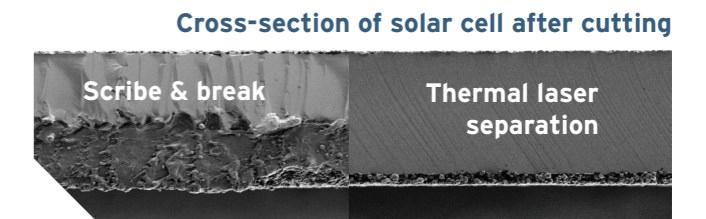
Main Objectives

In HighLite a unique consortium of 8 industrial actors and 9 research institutions will closely collaborate to realize the following **4 concrete objectives**:

1

Demonstrate high-efficiency solar cells in in pilot-line manufacturing:

- SHJ cut solar cells efficiency $\geq 23.3\%$ on $\frac{1}{4}$ size (or smaller).
- IBC cut solar cells efficiency $\geq 24.3\%$ on $\frac{1}{4}$ size (or smaller).



2

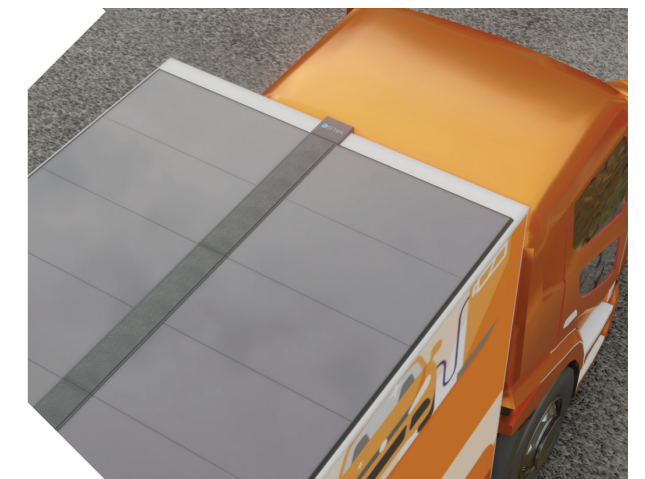
Develop:

- industrial tools for assembly of thin (down to $100\ \mu\text{m}$) cut solar cells
- Shingle assembly production tool throughput of 4000 full-size cells per hour.
- Prototype for assembly of IBC cut solar cells throughput of 1000 full-size cells per hour.

3

Develop high-performance modules tailored for various applications with high quality standards:

- BAPV modules efficiency $\geq 22\%$ and $\leq 250\ \text{kg-eq.CO}_2/\text{kWp}$.
- BIPV modules efficiency $\geq 21\%$ and integrated bypass diodes.
- 3D-curved modules for VIPV efficiency $\geq 20\%$ and mass $\leq 5\ \text{kg/m}^2$



4

Demonstrate improved cost and performance against commercially available modules.

Facts and Figures

Acronym: HighLite

Duration: 36 months

Start date: 1 October 2019

Total budget: € 15 119 008,75

EC Funding: € 12 870 478,25

EC Contract number: 857793

Partner locations



Contacts

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Consortium Partners



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