

## PARTNERS OF PILATUS



Institute of Physics of the  
Czech Academy of Sciences



experience aided techniques



padanaplast®



Part of Atlas Copco Group



## FACTS AND FIGURES

**Start date:** 01 November 2022  
**Duration:** 36 months  
**EU funding:** € 10,158,731  
**Grant number:** 101084046

19 partners from 8 European countries

## CONTACT

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# PILATUS

**Digitalised pilot lines  
for silicon heterojunction  
tunnel interdigitated  
back contact solar cells  
and modules**



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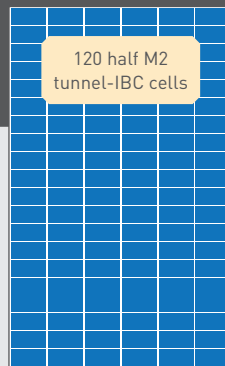
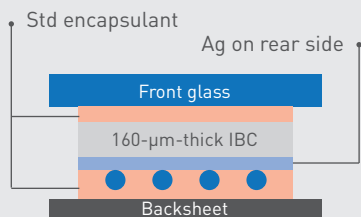
# REBUILDING MADE-IN-EUROPE PHOTOVOLTAIC PRODUCTION

PILATUS is a 3-year European project aiming at demonstrating three digitalised pilot lines for the production of silicon wafers, solar cells, and solar modules. PILATUS will contribute to re-build a "Made in Europe", leading-edge, and competitive PV industry with the entire value chain retained in Europe and compliant with the latest environmental standards.

The project will demonstrate the outcome at the pilot line using the 'best in class' / State-of-the-Art solution, but – at the same time – will work in parallel on specific technological aspects, which still have significant room for improvement.

## CURRENT STATUS

- Cell spacing: 1.5 mm
- Wafer thickness: 160  $\mu\text{m}$
- 25 year lifetime
- $P_{\text{max}}$ : 350+ W



## MAIN OBJECTIVES

- Demonstrate the high-volume production of Silicon Heterojunction (SHJ) tunnel-Interdigitated Back Contact (tunnel-IBC) PV
- Validate and pre-certify performance of PV cell and module
- Eco-design of tunnel-IBC PV modules and manufacturing lines
- Demonstrate favourable cost/ $W_p$  of the SHJ-IBC modules

SHJ-tunnel-IBC technology has clear advantages over other IBC technologies. PV with 25.5% cell efficiencies will be achieved with just 10 process steps, resulting in competitive pricing in the premium PV product category.

## PILOT LINE TARGETS

### Wafer pilot line:

- Upscaling production, high yield high quality
- Capacity of 300,000 wafers during the project

### Cell pilot line:

- Throughput 2600 cells/per hour
- Target average efficiency > 25.5%
- Increased production capacity by 30%

### Module pilot line:

- Annual throughput of 170 MW
- Optimised data analytics and optimisation
- Roof tiles with SHJ-tunnel-IBC technology

## PILATUS INNOVATION

- Cell spacing reduced
- Reduction of string & edge spacing
- Wafer thickness reduced to 110  $\mu\text{m}$
- 40-year lifetime
- $P_{\text{max}}$ : 450+ W
- For feasibility in future: Bio-sourced, recycled encapsulant with photon multiplication

