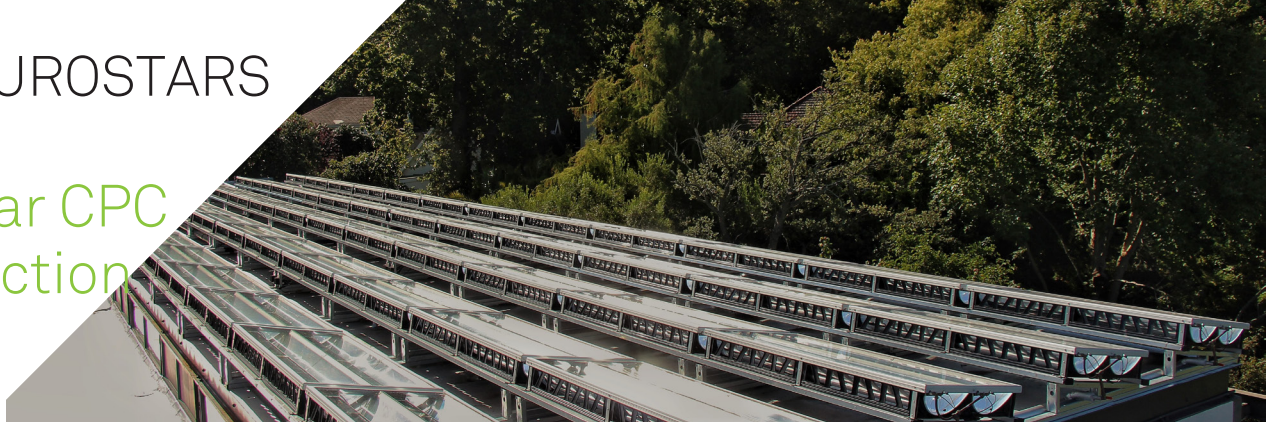
EUREKA EUROSTARS PROJECT

10625 Solar CPC PVT Production



"JUST DOING THIS PROJECT HAS ATTRACTED INVESTORS"

A Eurostars project is helping Solarus to reduce production costs of their novel solar collector combining solar photovoltaic (PV) electricity generation with solar thermal heat generation. With venture capital rolling in, the company is ready to transform the energy market.

Headquartered in Venlo, the Netherlands, with a Research & Development centre in Gävle, Sweden, Solarus has developed a unique concentrating photovoltaic thermal (C-PVT) collector with a wide range of practical applications. The company's two-in-one technology has been patented and tested, and potential markets are identified.

"Our technology efficiently produces both heat and electricity from the same area," explains João Gomes, Research Director at Solarus Sunpower Sweden AB. "Sunlight is concentrated onto the back of an aluminium receiver. This receiver has solar cells on both sides. Water flows inside the receiver and cools the solar cells. Since, solar cells gain about 5% of efficiency for every 10 C of temperature reduction, this leads to an increase in efficiency." Additionally, Solarus solar cells are protected by a unique transparent silicone that is part of their patented design.

Scaling Up Solar Energy Innovation

The company now needs to develop automated production systems if it is to reduce the cost of the technology and become truly competitive. This is one of the main objectives of this € 2.7 M Eurostars project, which runs until September 2019. "We want to put in place standardised, certified processes that cut costs," says Gomes. "We know that automating this process is essential."

Solarus is working with partners from Cyprus, Sweden, Portugal and the Netherlands to achieve this and set the standard for photovoltaic thermal collector production. New machinery has been bought or developed, including for example a silicon dispenser to encapsulate the solar cells, a novel solar tower for accurate measurements and a specially made electroluminescence tester for quality control.

"Quality control is a key component for us," says Gomes. "New quality control techniques – such as sending an electric current through the cells to detect minuscule cracks – have also been put in place. We also need to ensure that our production facilities are fully compliant with the most stringent regulations. Without this we will not be able to achieve mass sales."

Private money coming in

Involvement in the Eureka Eurostars programme has already had a meaningful impact on the business. "Just the fact that we are doing this project has attracted investors," says Gomes. "They see that we have gone through a rigorous review process and are willing to put their money in. They have more trust in what we are doing." Solarus recently finished an investment round of € 6,7 million.

The number of employees has nearly doubled since the start of the project in April 2016 (to around 30) and the company has set ambitious production targets for its recently established factory in the Netherlands. "We hope to produce 15 000 units annually next year and have set a higher target after that," says Gomes.

> ***"They see that we have gone through a rigorous review process and are willing to put their money in***

"Production at this scale is needed in order to compete."

Getting production costs down is the final piece of the jigsaw for Solarus to become a significant player in cutting edge solar energy technology. In addition to energy-consuming industries that require heat such as food production and metal processing, Solarus is also actively examining possible applications in hospitality. "We were recently approached by a major international hotel chain," says Gomes. Solar energy and heating for isolated rural communities – especially important for developing countries – is another area that the company is exploring.

This project has received funding from the Eurostars-2 joint programme with co-funding from the European Union Horizon 2020 research and innovation programme

MAIN PARTNER

Solarus Sunpower Sweden AB
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TOTAL R&D INVESTMENT

€ 2.7 M

DURATION

October 2016 to October 2019

OTHER PARTNERS

Sweden: University Of Gävle
Portugal Instituto Superior Técnico
Netherlands: Blue Engineering B.V.
Cyprus: FOSS, Johnsun Heaters Ltd, TUV Cyprus Ltd

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