AER II
Industrialization and System Integration of the Aesthetic Energy Roof Concept

Project duration: 05.2014 to 04.2016
Final report submitted: 02.2018

Publishable Summary

The future of the European photovoltaic industry depends heavily on breakthroughs in 'mass customization' of photovoltaic roofs, that require the European local execution of engineering, on-demand manufacturing and on-site delivery, and that need a high level of aesthetics to appeal to a broad public.

In this project the partners Soltech, Heijmans, SEAC and AERspire joined forces to research, develop, industrialize and bring to the market the Aesthetic Energy Roof (AER) concept.

The project started with a market study. In this market study parties investigated the price of existing building-integrated systems, why the price is higher then conventional solar energy systems and how this market price can be reduced.

Parallel to this market study AERspire developed the industrialization of the manufacturing and finishing of the AER PV elements, including the definition and development of production processes, production tools, procedures, manuals and the required quality control. An important milestone was the realization of a prototype roof on the SolarBEAT field test location (TU/e campus) in Eindhoven where both AER PV elements and dummy elements are installed. The new generation of the mounting system has also been installed in this prototype roof. This design of this unique mounting system contributes to maximum natural heat dissipation of the AERspire PV elements. With this prototype roof and the new generation of the AERspire mounting system, has been demonstrated a heat dissipation at the back of the panel with an extra 20% resulting in an extra cool down of the panels up to 5°C. For the final workpackage AERspire realised a large-scale project, consisting of a 70 kWp PV system on 14 terraced houses. For a period of 8 months performance data of this project were collected and analysed and compared to the data which where collected from the prototype roof at the SolarBEAT location.

The results of the data of the 14 terraced houses show that the conclusions from the prototype roof at the SolarBEAT location may be translated 1:1 in the projects that will be realized with the current generation of AERspire products.

The project realized by AERspire and Heijmans Woningbouw at the Karel de Grotelaan in Eindhoven won at the end of 2015 the Ensoc election *'Most beautiful solar project of Netherlands'.*

Picture: 14 terraced houses at the Karel de Grotelaan in Eindhoven with the AERspire roof solution won the price of "Most beautiful solar project of the Netherlands".

The AER II project was realized within schedule and with only a slight budget overrun, where all project objectives have been met. The project results are presented at international conferences and national fairs. The project also generated a lot of publicity and media attention. The project partners look back on a successful project with a lot of commercial publicity and spin-offs and innovative follow-up projects.

Project consortium

Coordinator and contact details:

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Participating countries and financing:

Country	Number of organisations involved	Project costs in EUR	Public funding in EUR
The Netherlands	3	506’782	299’403
Belgium-Flanders	1	80’459	44’252
Total	*4*	*587’241*	*343’655*

Funding agencies involved and contracts

Funding Agency	Contract N° and Title
RVO (Rijksdienst voor Ondernemend Nederland)	TEMW140008 – AER II
Partly by RVO (Rijksdienst voor Ondernemend Nederland) and partly by TKI Solar Energy	TEMW140008 – AER II (RVO) and AER-2(TKI Solar Energy)
IWT	ERA-SOLAR 047/ IWT 130570
not applicable (no public funding)	not applicable (no public funding)