

Scalable Shade Tolerant Modules

Publieke samenvatting / Public summary

Aanleiding

PV modules are available in one size only and partial shade on a solar cell can result in a drop of the produced power. This means that when 1% of module area is shaded, the resulting drop in power can be as high as 33%. Both issues hamper further rapid growth of PV in the built environment.

Doelstelling

The project aim is to determine the feasibility of a scalable, shade tolerant modules based on the criteria of manufacturability, industrialization, lifetime and LCOE. The project thereby contributes to the PV program line, especially by lowering the LCOE of modules applied under non-optimal circumstances and so opening up new application possibilities.

Korte omschrijving

ECN and Utrecht University are developing the TESSERA (prototyping) and SMART (proof-of-concept) module technologies. Industrial partners are involved to industrialize and market the technologies, focussing on specific parts of the development. Rimas and Optixolar cooperate with Rofin and Eurotron to optimize cell cutting and handling of mini-cells. Solned develops flexibly patterned backsheets for the MWT module designs and collaborates with Expice to integrate diodes. NXP provides input on integrating IC's in the SMART module. Heliox develops micro-inverters matching the designed modules. Stafier and Exasun are involved to determine manufacturability and market readiness / system integration of the modules.

Projectinformatie / Project information

Projectnummer / Project number

TEID215030

Subsidiebedrag / Grant amount

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Algemene informatie / General information

Penvoerder / Secretariat

Nederlandse Organisatie voor toegepast-natuurwetenschappelijk onderzoek TNO

Publicaties en materialen / Publications and attachments

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Resultaat

The project results in full feasibility of the TESSERA concept, including field testing of prototypes, as well as a proof-of-concept of the SMART module technology including lab tests. Besides a benchmark of currently available technologies on system and module level, two concepts are thus developed, resulting in a proof-of-concept of a SMART module and the industrialization and prototyping of the TESSERA module with accompanying manufacturing methods such as cell cutting, diode integration in backsheets, and specific micro-inverters.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.

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