

Development of an Automated Test measurement System for solar modules

Publieke samenvatting / Public summary

Aanleiding

PV-module manufacturers require automated inline testing equipment that provide accurate information about PV-module performance with industrial robustness and low testing cost per module. Eternal Sun has already developed solar-simulators with AAA-accuracy, steady-state and long pulse sunlight for R&D purposes and wants to develop a prototype solar simulator for in-line use.

Doelstelling

The consortium intends to lower the integral costs of PV-modules, by developing a worldwide unique AAA-class In-Line steady state solar simulator (ILSS) prototype for the PV-industry that is validated on criteria for test speed (5 modules/minute), test accuracy, heat development, maintenance and lamp replacement costs.

Korte omschrijving

In order to develop the ILSS prototype, Eternal Sun will develop the solar simulator system for "sunny side down" operation, to fit the inline requirements of PV-module manufacturers. The transport system for automated transport of solar panels will be developed by IPA-PS, to match the 5 modules/minute requirement. The Delft University of Technology (DUT) will work on validating the automated measurement system, developed by IPA-PS, with respect to accuracy, quality and repeatability. After first design and development of the prototypes, the systems will be integrated at Eternal Sun's facilities, and extensive testing with

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regards to the requirements will take place. Several feedback loops and optimisations in the separate systems are to be expected, before a validation can be carried out to provide reliable data on test accuracy, heat development, maintenance, lamp replacement costs and testing speeds.

Resultaat

A validated prototype that fulfils the technological and non-technological requirements as stipulated in the workplans, which in turn will lead to a test-cost reduction of 80%. This cost reduction will directly influence the LCOE of solar in a positive way and will contribute to the development of solar globally.

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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