



## **New PV Module Durability Testing Protocol Initiated by Fraunhofer ISE and CSE**

*Quantitative Data Comparing Durability and Reliability of PV Modules Accessible for Investors*

**HAMBURG, Germany -- September 8th, 2011** -- To further improve testing standards for PV modules, Fraunhofer ISE and Fraunhofer CSE have announced the launch of the PV Module Durability Initiative (PVDI). With the intention to provide additional information for investors, this initiative will offer a more robust testing protocol for a wide range of PV modules, exceeding the demands of IEC standard module certification. It is the first widely available program to generate extensive, quantitative reliability data for modules, relevant for their expected lifetime under different kinds of stress. The tests do not simply use pass/fail criteria but generate quantitative scores enabling the credible ranking of modules based on their likelihood to perform reliably.

The key differentiating features of the PVDI include extended accelerated testing, UV, damp heat with positive and negative voltage bias as well as dynamic mechanical stresses. Also included are typical stresses such as temperature cycling, humidity-freeze, and damp-heat, which have been extended in order to come closer to the actual lifetime stress of a module. The PVDI program further includes an R&D component and outdoor exposure testing which aims to constantly improve the tests and to offer better models for module lifetime predictions.

Under the leadership of the Fraunhofer Institute for Solar Energy Systems ISE, with its decades of experience in PV technology development, testing and qualification, Fraunhofer is introducing the PV Durability Initiative as the ideal framework to apply this experience for comprehensive testing. "Our new initiative will give investors a tool to obtain a quantitative, third party, independent assessment on the long-term durability of PV modules." says Dr Harry Wirth, Director of Fraunhofer ISE's Photovoltaic Modules, Systems and Reliability Division.

The Fraunhofer Institute for Solar Energy Systems ISE in Freiburg, Germany and the Fraunhofer Center for Sustainable Energy Systems CSE in Cambridge, MA and Albuquerque, NM will jointly operate the PV Durability Initiative. "Performing testing and R&D in our labs in Germany and the U.S. will give us a great opportunity to serve global PV investors and manufacturers." says Dr Christian Hoepfner, Director of Technical Operations at Fraunhofer CSE. "In addition to providing manufacturers with our new PV module testing protocol, the PVDI research team will work closely with international R&D and standards communities to support development of an international testing standard for the assessment of PV module quality."

Testing according to the PVDI 2012 Test Protocol will start in October 2011. Several modules from leading PV module manufacturers will be part of the first round of testing. Initial data will

be published in the second quarter of 2012, together with the Test Protocol outline. The publication will include data from all modules tested, and rank the modules in several degradation indicators. Program participants will have access to a detailed level of data and findings.