Fraunhofer USA

FRAUNHOFER CENTER FOR SUSTAINABLE ENERGY SYSTEMS CSE

THE PV MODULE DURABILITY INITIATIVE

1 *PVDI measurement data reduce uncertainty for solar financiers and system developers.*

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A joint project with

Fraunhofer ISE

Quantitative, Independent PV Module Durability Data for Stakeholders

Cost and risk uncertainties related to photovoltaic (PV) module technologies remain a major hurdle in solar project financing. Current IEC and UL tests for early field failures of modules are not designed to determine long-term module durability.

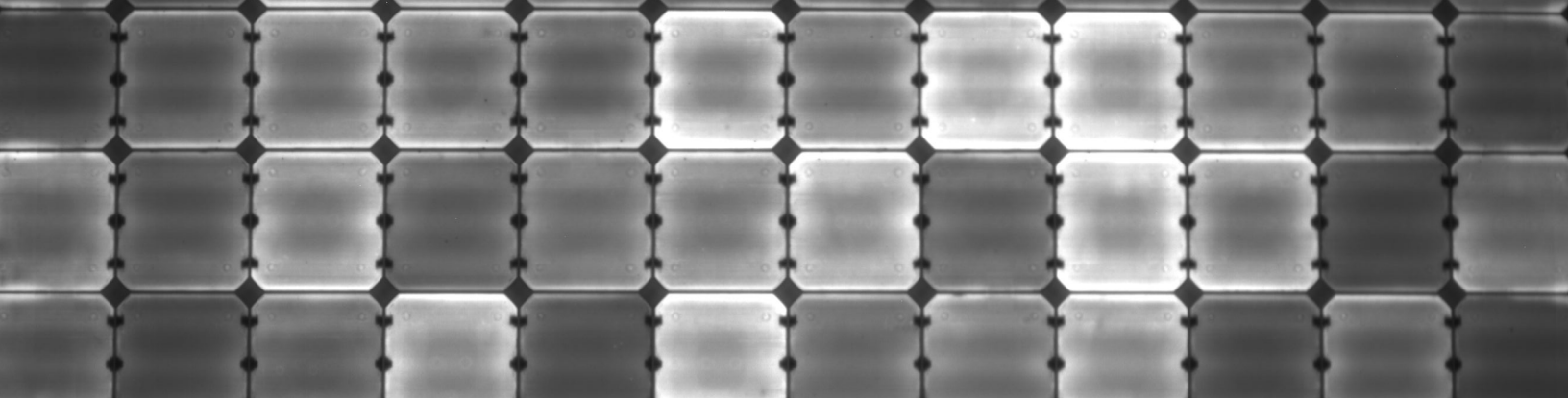
The Fraunhofer Institute for Solar Energy Systems (ISE) and the Fraunhofer Center for Sustainable Energy Systems (CSE), with decades of experience in PV technology development, testing, and qualification, are working with PV module manufacturers, developers, financiers, and other stakeholders to address this issue through the PV Module Durability Initiative (PVDI).

PVDI is an integrated test and research initiative to understand and improve PV module durability while building up a lifetime assessment protocol with industry-wide acceptance. This initiative provides a PV module rating system and comparative data that enable developers to make informed deployment decisions and encourage continuous improvement in PV module durability.

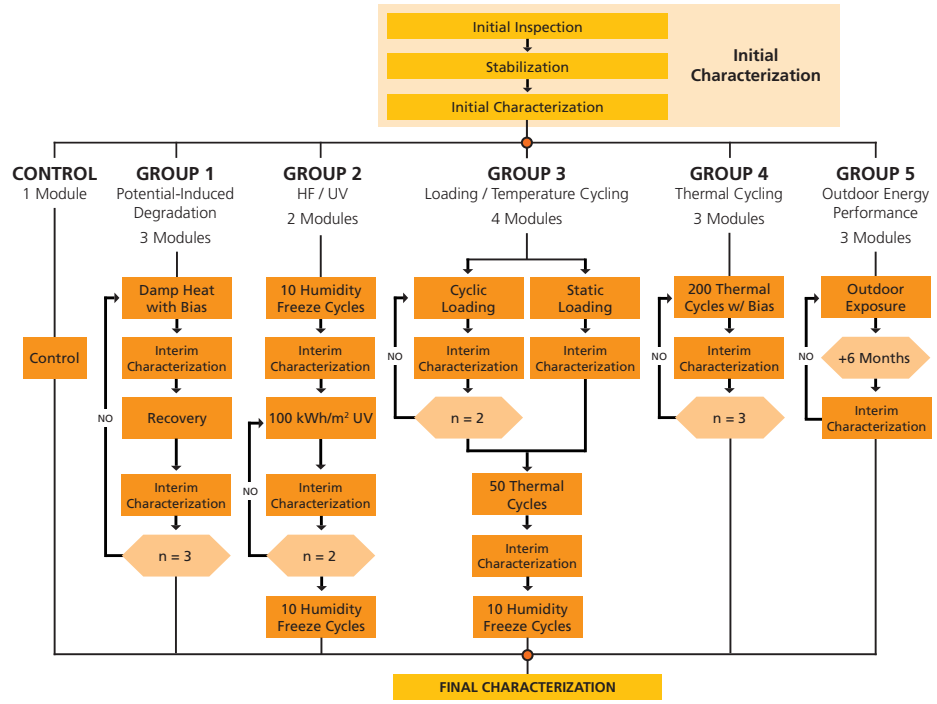
Industry Benefits

- Quantitative, third-party module durability data that addresses questions on deployment risk and technical bankability.
- Industry R&D drive to more durable PV modules through the generation of quantitative data and a relative durability ranking.
- Ongoing test results within a program that supports development of an international standard.

If your PV installations, modules, or financing projects could benefit from improved predictability of PV module durability and relative rating of modules, consider becoming a participant.



The PVDI Test Protocol



Participant Opportunities

Fraunhofer welcomes participation from industry partners interested in assisting the development of PVDI. Typical participants will be module manufacturers, materials and component suppliers, and PV system developers and financiers. Benefits include:

- Opportunity to submit modules for testing according to the current test protocol.
- Access to complete testing data for your modules, including failure analysis.
- Access to comparative, quantitative data for all modules tested under PVDI protocol. Participant confidentiality is maintained.
- Opportunity to have your module identified in summary test reports and ratings published by Fraunhofer.
- Invitation to participate in workshops for results discussion and test protocol review.
- Ongoing outdoor monitoring

INITIATIVE FEATURES

- Exceeds the demands of IEC standard module certification.
- Quantitative rating enables the comparison of modules based on their likelihood to perform reliably over their service lifetime.
- R&D component and outdoor exposure testing to improve test protocols and models for lifetime predictions.
- Opportunity to participate in workshops to share scientific progress and recent findings.
- Coordination with the international standards community to develop a new standard as part of the IEC certification scheme.

Recent Related Publications

- Schmid, C.; Singh, R.; Stark, C.; Ashmore, J.; Ferrara, C.; Stecklum, S.: Fraunhofer PV Durability Initiative for Solar Modules-Part3, PV Tech Power 04, August2015