

国際連携活動報告：IEA PVPS Task 13 Performance, Operation and Reliability of Photovoltaic Systems

°棚橋 紀悟¹, Boris Farnung², Ulrike Jahn³

¹産業技術総合研究所, ²Fraunhofer Institute for Solar Energy Systems ISE, Germany, ³TÜV Rheinland Energy GmbH, Germany

The International Energy Agency (IEA): Photovoltaic Power Systems Programme (PVPS)

<p>The IEA PVPS</p> <p>Mission Statement</p> <p>To enhance the international collaborative efforts which facilitate the role of photovoltaic solar energy as a cornerstone in the transition to sustainable energy systems</p>	<p>The IEA PVPS Programme</p> <ul style="list-style-type: none"> The IEA Photovoltaic Power Systems Programme (PVPS) is one of the Technology Collaboration Programmes established within the IEA in 1993. Global network of expertise, independent, objective, neutral 32 members: 27 countries, European Commission, SolarPower, SEPA, SEIA, Copper Alliance Activities are carried out collaboratively on a country basis along a number of technical and non-technical subjects Currently, 7 Tasks are active 	<p>IEA PVPS is</p> <ul style="list-style-type: none"> A global reference on PV for policy and industry decision makers A global network of expertise for information exchange and analysis An impartial and reliable source of information <p>All information is available at http://www.iea-pvps.org</p>	<p>IEA PVPS Tasks</p> <ul style="list-style-type: none"> Task 1 - Exchange and dissemination of information on PV power systems Task 9 - Deployment of PV technologies: co-operation with developing countries Task 12 - PV environmental, health & safety activities Task 13 - PV performance, operation and reliability Task 14 - High-penetration of PV systems in electricity grids Task 15 - Acceleration of BIPV Task 16 - Solar resource management Task 17 - PV and Transport Task 18 - Off-Grid and Edge-of-Grid Photovoltaic Systems (new)
--	---	---	---

IEA PVPS Task 13: Performance, Operation and Reliability of Photovoltaic Systems

Performance and reliability of PV modules and systems are key topics that are attracting more and more attention from various stakeholders every day. Recently, it also comes in combination with the terms of quality and sustainability. Task 13 has so far managed to create the right framework for the calculations of various parameters that can give an indication of quality of PV components and system as a whole. The framework is now there and can be used by the industry who has expressed in many ways appreciation towards the results included in the high-quality reports.

Task 13 aims at supporting market actors to improve the operation, the reliability and the quality of PV components and systems. Operational data of PV systems in different climate zones compiled within the project will allow conclusions on the reliability and on yield estimations. Furthermore, the qualification and lifetime characteristics of PV components and systems shall be analyzed, and technological trends identified.

The IEA PVPS Task 13 Structure

2018 - 2021

- Subtask 1: New Module Concepts and System Designs**
- Subtask 2: Performance of Photovoltaic Systems**
- Subtask 3: Monitoring Operation & Maintenance**
- Subtask 4: Dissemination**

<http://iea-pvps.org/index.php?id=57>

IEA PVPS Task 13 Activities (All Documents can be Freely Downloaded.)

<p>IEA PVPS Task 13 Report (1)</p> <p>Review of Failures of PV Modules</p> <p>Published in 2014</p> <p>http://iea-pvps.org/index.php?id=275</p>	<p>IEA PVPS Task 13 Report (2)</p> <p>Analytical Monitoring of Grid-Connected Photovoltaic Systems</p> <p>Published in 2014</p> <p>http://iea-pvps.org/index.php?id=276</p>	<p>IEA PVPS Task 13 Report (3)</p> <p>Characterisation of Performances of Thin-Film PV Technologies</p> <p>Published in 2014</p> <p>http://iea-pvps.org/index.php?id=277</p>	<p>IEA PVPS Task 13 Report (4)</p> <p>Analysis of Long-Term Performance of PV Systems</p> <p>Published in 2015</p> <p>http://iea-pvps.org/index.php?id=305</p>
<p>IEA PVPS Task 13 Report (5)</p> <p>PV Performance Modeling Methods and Practices</p> <p>Published in 2017</p> <p>http://iea-pvps.org/index.php?id=423</p>	<p>IEA PVPS Task 13 Report (6)</p> <p>Technical Assumptions Used in PV Financial Models - Review of Current Practices and Recommendations</p> <p>Published in 2017</p> <p>http://iea-pvps.org/index.php?id=426</p>	<p>IEA PVPS Task 13 Report (7)</p> <p>Improving Efficiency of PV Systems Using Statistical Performance Monitoring</p> <p>Published in 2017</p> <p>http://iea-pvps.org/index.php?id=427</p>	<p>IEA PVPS Task 13 Report (8)</p> <p>Assessment of Photovoltaic Module Failures in the Field</p> <p>Published in 2017</p> <p>http://iea-pvps.org/index.php?id=435</p>
<p>IEA PVPS Task 13 Report (9)</p> <p>Uncertainties in PV System Yield Predictions and Assessments</p> <p>Published in 2018</p> <p>http://iea-pvps.org/index.php?id=477</p>	<p>IEA PVPS Task 13 Report (10)</p> <p>Review on Infrared and Electroluminescence Imaging for PV Field Applications</p> <p>Published in 2018</p> <p>http://iea-pvps.org/index.php?id=480</p>	<p>IEA PVPS Task 13 Report (11)</p> <p>Photovoltaic Module Energy Yield Measurements: Existing Approaches and Best Practice</p> <p>Published in 2018</p> <p>http://iea-pvps.org/index.php?id=493</p>	<p>IEA PVPS Publications</p> <p>PVPS Annual Reports</p> <p>http://www.iea-pvps.org/index.php?id=3</p> <p>Reports from All Tasks</p>

A part of this work was supported by the New Energy and Industrial Technology Development Organization, Japan.