



Welcome & Introduction

Ulrike Jahn, Fraunhofer CSP & Task Manager of IEA PVPS Task 13



- What is IEA PVPS?
- Task 13 activities
- Task 13 deliverables

What is IEA PVPS?



The IEA Photovoltaic Power Systems Programme (IEA PVPS) is one of the **Technological Collaboration Programmes (TCP)** established within the International Energy Agency (IEA). Since 1993, international participants have collaborated on a diverse range of joint projects, all aimed at **advancing the application of photovoltaic technology** for the conversion of solar energy into electricity.



PVPS

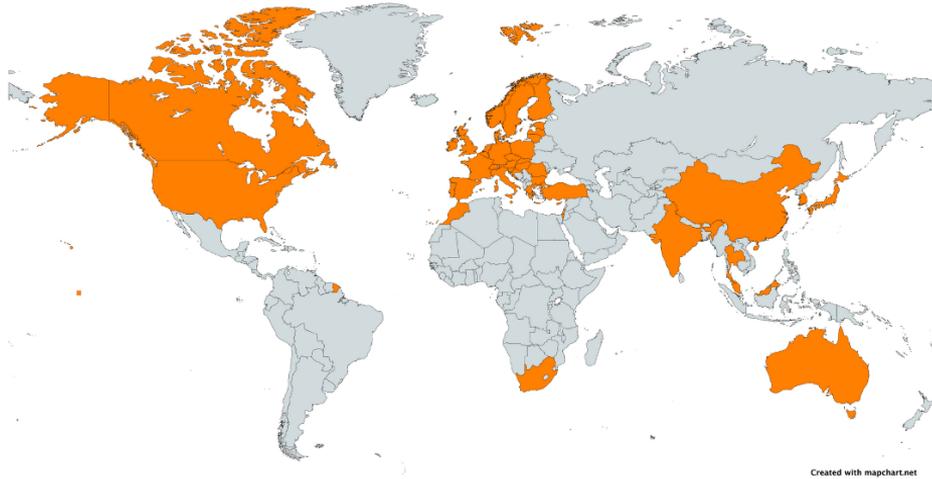
The IEA PVPS Executive Committee and PVPS Task Experts in 2023

9 Research Projects are currently operational

around
340 Individuals from all over the globe are participating in PVPS

over
175 Scientific reports have been published since 1998

Our members



PVPS

- Australia
- Austria
- Belgium
- Canada
- China
- Denmark
- Energy
- European Union
- Finland
- France
- Germany
- India
- Israel
- Italy
- Japan
- Korea
- Malaysia
- Morocco
- the Netherlands
- Norway
- Portugal
- Solar Energy Research Institute of Singapore
- Solar Power Europe
- South Africa
- Spain
- Sweden
- Switzerland
- Thailand
- Türkiye
- United States
- United Kingdom

Task 13: Performance and Durability of PV Applications (ST2)



PV Applications

- Floating PV performance (modelling vs. real data)
- Floating PV - Degradation modes and PLR
- Agri PV: Performance of dual land use
- Bifacial PV tracking systems: Performance modelling
- Bifacial PV tracking for optimal performance and cost



PV Integration

- Digital integration of PV systems from design to O&M
- Digital twinning of PV power plants
- Module Level Power Electronics (MLPE) in PV systems
- Performance comparison of MLPE vs. string inverter



Task 13: Techno-Economic Key Performance Indicators (ST3)

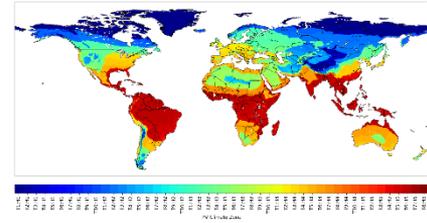


Overview and Assessment of

- Extreme weather events and impact on KPIs
- Diagnostics, repair and mitigation strategies
- Best performing technologies for climatic conditions
- Guidelines for module selection and system design

Mapping of PV economic KPIs

- Decision matrix of KPIs along the value chain
- Develop best practice flowcharts for PV projects
- Analysis of large-scale impact on reliability KPIs
- Visualization of techno-economic KPIs and global mapping



Impacts of Extreme Weather on PV Power Plants



PVPS Task 13 Workshop at Intersolar Conference, Munich, 07 May, 2025

Ulrike Jahn

Welcome & Introduction

Mapping Decisions Along the Value Chain: Who Gives a Watt?

Laurie Burnham

Trends in extreme weather and their implications for solar-energy generation

Thore Müller

Quantifying the impact of dust and snow on PV power plants



Giosuè Maugeri

Tracking Through the Storm: Outsmarting Hail in Solar PV Systems

Leonardo Micheli

Gone with the Wind(storm): Keeping Your PV Systems Grounded in Extreme Weather

Jonathan Leloux

Panel Discussion & Wrap-Up



Stay connected!



More information on IEA PVPS:

www.iea-pvps.org

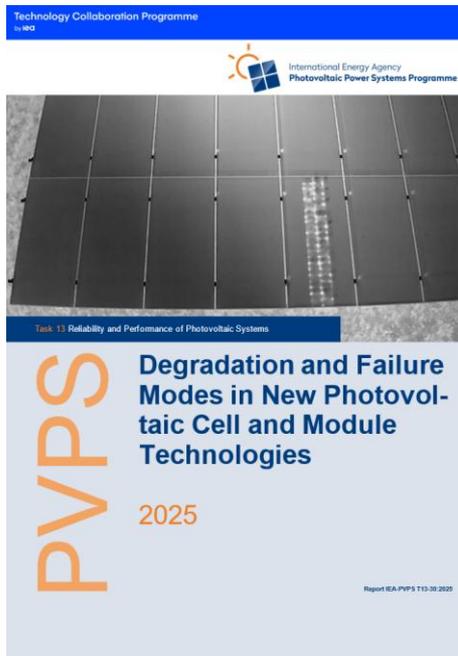
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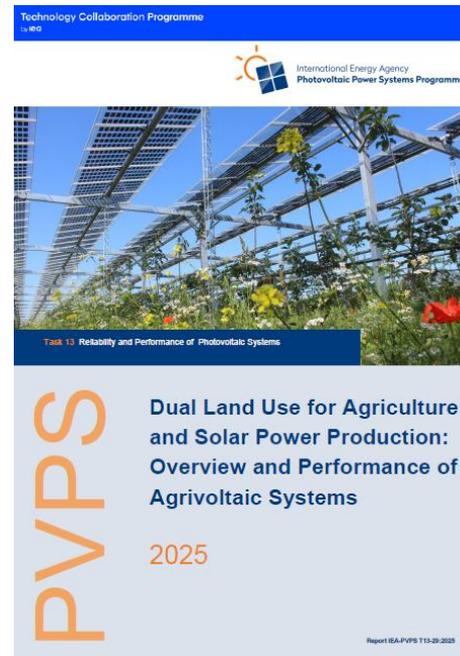
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This report overviews currently known degradation modes and failures of PV module technologies and their mitigations.



This report provides insights on the performance, modelling and O&M of Agrivoltaic PV systems.

Thank You

