



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.



The IEA PVPS Executive Committee
and PVPS Task Experts in 2023

9

Research Projects are currently operational

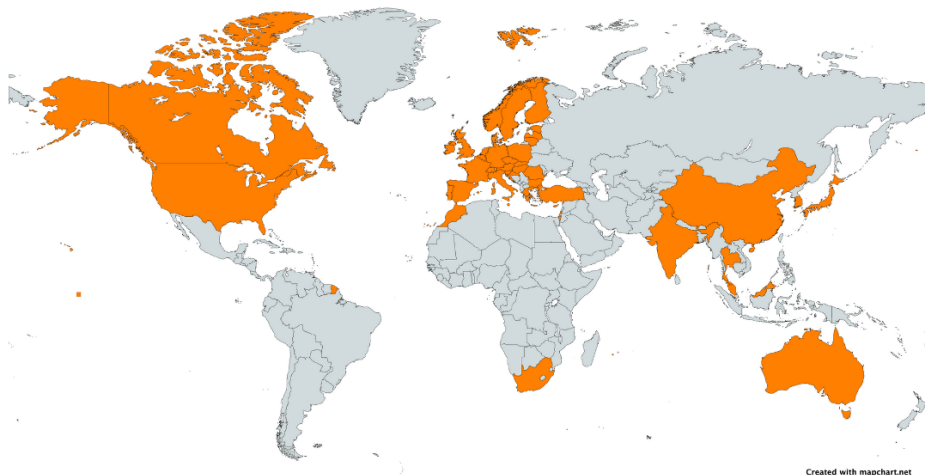
around
340

Individuals from all over the globe are
participating in PVPS

over
175

Scientific reports have been published since
1998

PVPs



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

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)

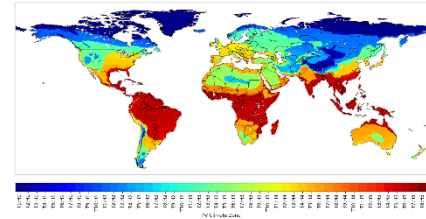


Overview and Assessment of

- 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

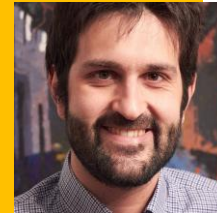
Tracking Through the Storm: Outsmarting Hail in Solar PV Systems

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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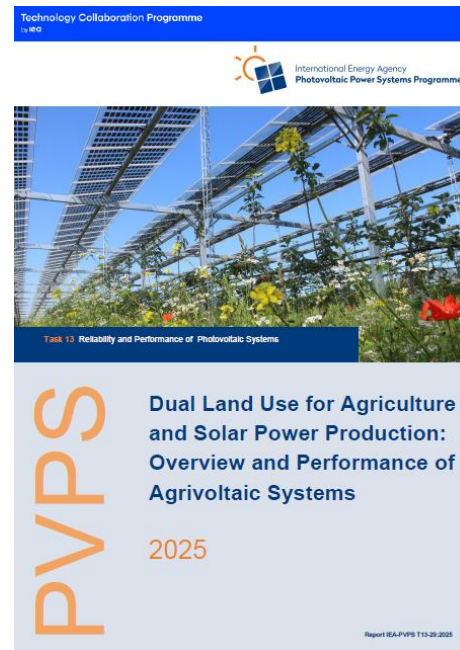
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PVPS



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

