



Introduction to IEA PVPS Task 13

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- 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

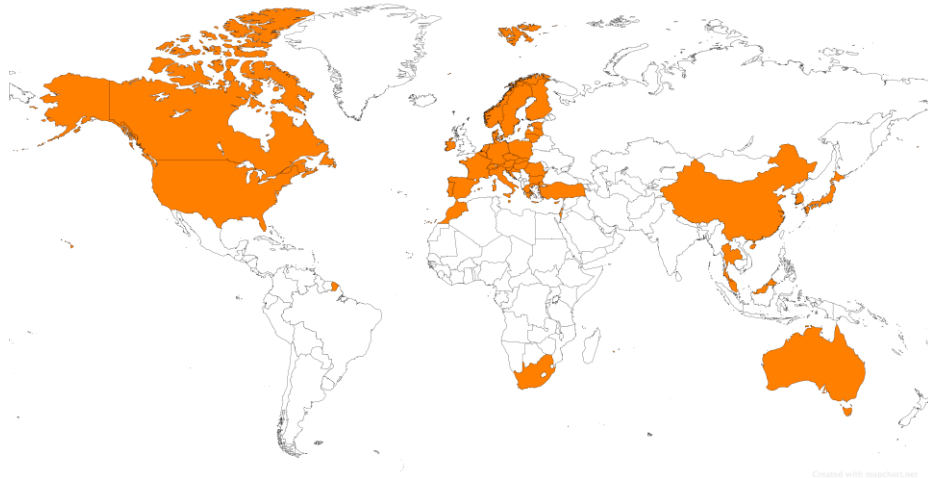
The IEA PVPS Executive Committee and PVPS Task Experts in 2023

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



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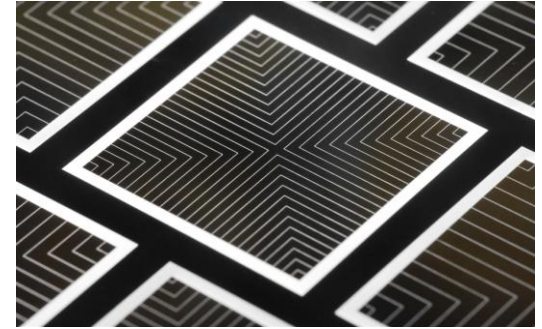
PVPS

-  Australia
-  Austria
-  Belgium
-  Canada
-  China
-  Denmark
-  EnergyCity
-  European Union
-  Finland
-  France
-  Germany
-  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



PV Cells and Modules

- Degradations modes of new backsheet materials
- Degradation modes in new cell and module technology
- Impact of testing strategies under specific load conditions
- Review of PV module repair strategies
- Re-qualification & standardization of 2nd life PV



PV + Storage Systems

- Application-specific performance and degradation
- Estimating lifetime of PV + storage systems
- Guidelines for O&M of PV + storage systems
- Cost estimations for O&M of PV + storage systems



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)

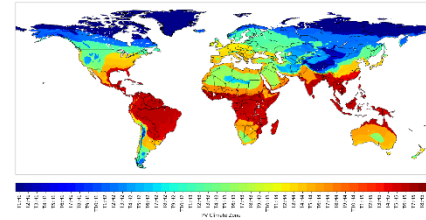


Overview and Assessment of

- 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



Stay connected!



More information on IEA PVPS:

www.iea-pvps.org

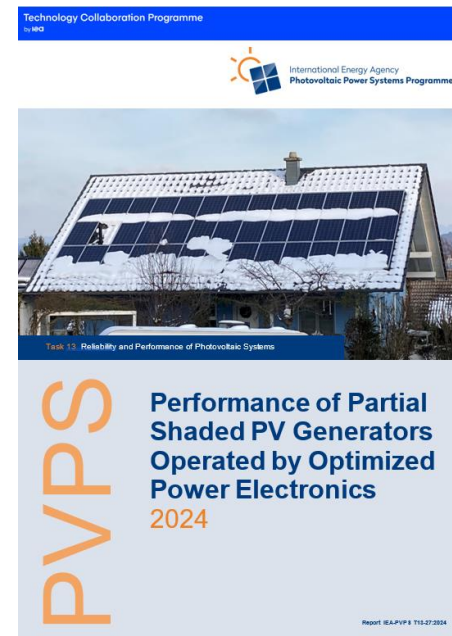
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This report overviews current best practices for optimizing the performance of such systems.



This report provides insights on partial shading and power electronics for maximizing PV system performance.

Thank You

