



PV System Performance and PV Module Reliability

WELCOME AND INTRODUCTION

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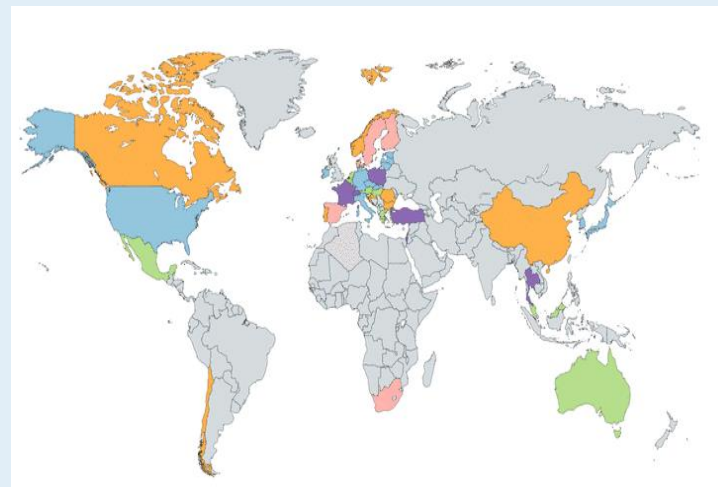
PVPS





The IEA PVPS Programme

- The IEA Photovoltaic Power Systems Programme (PVPS) is one of the collaborative R&D Agreements established within the IEA
- Global network of expertise, Independent, objective, neutral
- 31 members: 26 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



SolarPower Europe





IEA PVPS Tasks

- 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, quality and reliability**
- Task 14 - High-penetration of PV systems in electricity grids
- Task 15 - Acceleration of BIPV
- Task 16 – Solar resource management



PVPS collaborative activities

- Quality and reliability
- Environmental aspects
- Grid integration
- Urban, hybrid and very large-scale systems
- Off-grid energy services
- Policy and regulatory frameworks



PVPS collaborative activities

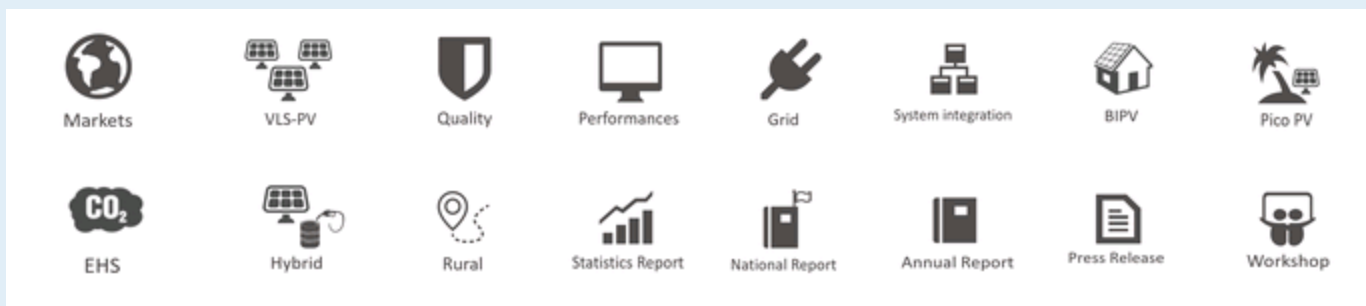
- Advancing the understanding and solutions for integration of PV power systems in utility distribution grid
- Overview of successful business models in various market segments
- Meaningful guidelines and recommended practices for state-of-the-art PV applications
- Contribute to the development of new standards



IEA PVPS is

- 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

All information is available at <http://www.iea-pvps.org>





PVPS Task 13

PV performance, quality and reliability



14th Task13 Meeting in Bolzano, Italy, 06-08 April 2016

20+ IEA countries, 36+ institutions
⇒ 45 participants, 60+ members



PVPS Task 13 2014 - 2017

Task 13 Structure:

Subtask 1: Economics of PV System
Performance and Reliability

Subtask 2: System Performance and Analysis

Subtask 3: Module Characterization and
Reliability

Subtask 4: Dissemination



PV System Performance and PV Module Reliability

Moderation:



PV Performance Modelling
Methods and Practices



Recommended Practices for PV
Module Characterization and Power
Rating



Uncertainties in Energy Yield
Predictions



Reliability and Failures of PV
System Components



Technical Assumptions used in
PV Financial Models



Improving Efficiency of PV Systems
Using Statistical Performance
Monitoring





Introduction


- PV Module Energy Yield: How to calculate EY for 20 years / 30 years?
- Which degradation rates of PV module failures did we find in the field?
- How to qualify PV modules & systems under outdoor conditions?



Programme Outline

| | |
|---|----------------------------|
| Part 1: | 8:40 am – 10:00 am |
| Energy Yield Models, Uncertainties and Financial Models | |
| Networking break | 10:00 am – 10:30 am |
| Part 2: | 10:30 am – 11:30 pm |
| Module Characterization and Reliability, Performance Monitoring | |
| Panel Discussion | 11:30 am – 12:15 pm |
| Wrap-up & Outlook | 12:15 pm – 12:30 pm |



IEA PVPS Task 13 Meeting, 27-29 March 2017 
SUPSI, CH-6952 Canobbio (Lugano), Switzerland