



## Short Introduction of IEA PVPS of Task 13

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- What is IEA PVPS?
- Task activities & deliverables
- Programme outline

# What is IEA PVPS?



- The International Energy Agency (IEA), founded in 1974, is an autonomous body within the framework of the Organization for Economic Cooperation and Development (OECD).
- The Technology Collaboration Programme was created with a belief that the future of energy security and sustainability starts with global collaboration. The programme is made up of thousands of experts across government, academia, and industry dedicated to advancing common research and the application of specific energy technologies.
- The IEA Photovoltaic Power Systems Programme (PVPS) is one of the Technology Collaboration Programme established within the International Energy Agency in 1993
- 32 members - 27 countries, European Commission, 4 associations
- *“To enhance the international collaborative efforts which facilitate the role of photovoltaic solar energy as a cornerstone in the transition to sustainable energy systems”*



# What are IEA PVPS Tasks?



- Task 01 – Strategic PV Analysis & Outreach
- Task 12 – PV Sustainability
- **Task 13 – Performance, Operation and Reliability of PV Systems**
- Task 14 – High Penetration of PV Systems in Electricity Grids
- Task 15 – Enabling Framework for the Development of BIPV
- Task 16 – Solar Resource for High Penetration and Large Scale Applications
- Task 17 – PV for Transport
- Task 18 – Off-Grid and Edge-of-Grid Photovoltaic Systems



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

# What is IEA PVPS?



- 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 available at PVPS website: <http://www.iea-pvps.org>

Technology Collaboration Programme  
by **iea**



International Energy Agency  
Photovoltaic Power Systems Programme

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## Research tasks

ONGOING TASK

PAST PROJECT



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

# ST 1: New PV Module Concepts and System Designs



## PV Modules

- Encapsulants, backsheets
- Bifacial module designs
- Shingled cells, half-cell, new interconnections
- Glass-glass, frameless, lightweight
- Coatings

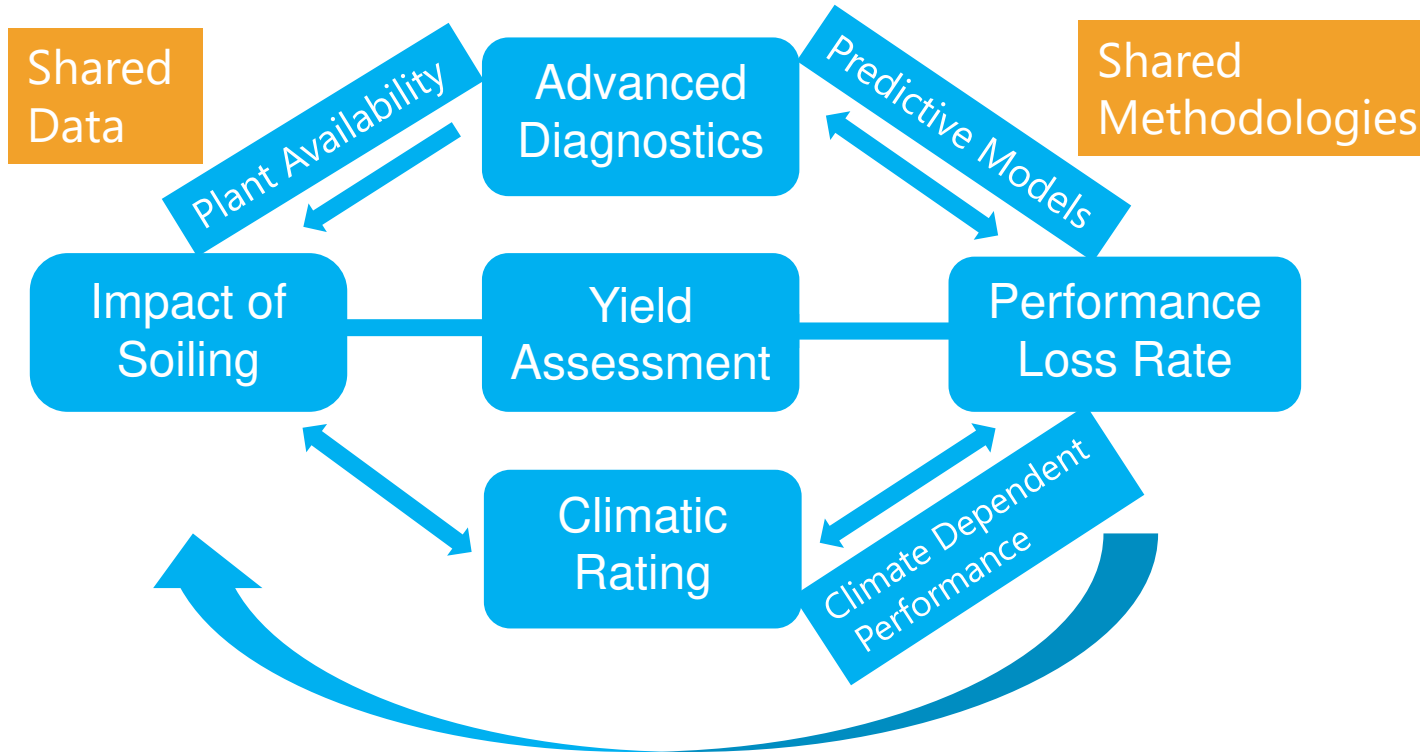
## PV Systems

- PV with energy storage or other combinations
- High DC/AC ratios and 1500+ Vdc
- Module/string-scale power electronics
- Floating PV, agriculture PV
- PV tracking technologies and issues





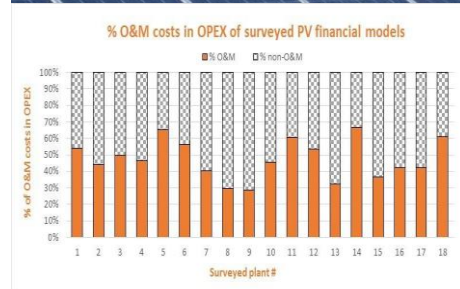
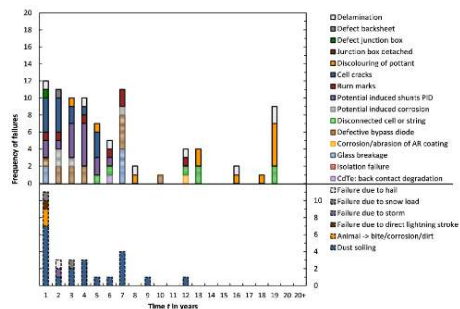
## ST 2: Performance of Photovoltaic Systems



# ST 3: Monitoring – Operation & Maintenance of PV Power Plants



- Increase the knowledge of methodologies to assess technical risks and mitigation measures in terms of economic impact and effectiveness during operation.
- Provide best practice on methods and devices to qualify PV power plants in the field.
- Compile guidelines for O&M procedures in different climates and to evaluate how effective O&M concepts will affect the quality of power plants in the field.



# Performance of New Photovoltaic System Concepts and Designs



## Session 1

### Ulrike Jahn

Introduction of IEA PVPS Task 13



### Daniel Riley

Performance Characterization of AC Modules



### Urs Muntwyler

New Performance Characterization Methods for Multi-MPPT PV Inverters



### Matthias Littwin

Using a Dynamic System Model to Characterize a Complex PV System



## Session 2

### Wilfried van Sark

Performance of Floating PV Systems



### Franz Baumgartner

Performance Indices for Double Use Installations of Foldable PV Generators



### Maximilian Trommsdorff

Performance Indices for Parallel Agriculture and PV Usage



### Panel discussion

# Thank you

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