

## **Definition of new needs and specifications for PV QCP**

Within the frame of the SerendiPV European project, we are challenged to define and identify what needs to be implemented in future quality control procedures to be useful for the new requirements of PV projects. Below, you can find the main challenges that we have identified in each area, but we would love to hear your opinions and suggestions.

To make it simple and straightforward, we have made a short survey (see next page) asking you to set the order of importance of different QPC for you, (being 1 the most important) and how important they are overall (high, medium, or low). Of course, do not feel the need to fulfill the whole survey if certain areas are not of your expertise, and feel free to add any desired topic to the list or even add a new table if you would like to propose a new different subject.

Please send your completed surveys back to WIP Renewable Energies at the following email address [nicholas.lapointe@wip-munich.de](mailto:nicholas.lapointe@wip-munich.de)

Survey respondent:

Role (manufacturer, R&D lab, etc.):

Bifacial PV	Order (1,2,3...)	Importance		
Albedo in large PV projects with variable surfaces		high	medium	low
Impact of the array structure on the rear side irradiance (Structure Shading Factor)		high	medium	low
Mismatch losses due to inhomogeneity in rear irradiance, temperature, and electrical characteristics (mismatch factor)		high	medium	low
Bifaciality characterization		high	medium	low
Assessment of peak power in the field for large fleet of bifacial PV modules		high	medium	low
LID and LeTID degradation processes		high	medium	low
Procedures for the characterization of power degradation		high	medium	low
Impact of the horizon line on a 360° range to the optimized tilts and orientations		high	medium	low
Impact of the module architecture, notably the pitch between cells according to the mirror effect of the ground or any other surface in the background		high	medium	low
Assessment of soiling impact on various bifacial tilt configurations		high	medium	low
Annual degradation assessment		high	medium	low

Floating PV	Order (1,2,3...)	Importance		
Soiling accumulation		high	medium	low
Impact of high humidity and salt environment on the PV Module reliability (corrosion...)		high	medium	low
Operating temperature and wind influence		high	medium	low
Mismatch due to irradiance inhomogeneity		high	medium	low
Mechanical stress for the supporting structure		high	medium	low
Impact of water characteristics		high	medium	low
Procedures for the characterization of power degradation		high	medium	low
Procedures for the characterization of isolation degradation		high	medium	low
Impact of the waves on the supporting mechanical structure		high	medium	low
Assessment of specific cleaning processes		high	medium	low
Analysis of the risks and assessment associated with human intervention on electrical installations in the presence of potentially conductive water		high	medium	low
Annual degradation assessment		high	medium	low

Inverters	Order (1,2,3...)	Importance		
Operating temperature and its impact on efficiency		high	medium	low
Heat dissipation characterization and evolution		high	medium	low
MPP tracking		high	medium	low
Components' degradation		high	medium	low
THD characterization at different electrical points		high	medium	low
P-S and power factor analysis		high	medium	low
Sensitivity to the trigger threshold		high	medium	low

Batteries	Order (1,2,3...)	Importance		
Evaluation of the quality of the charging/discharging strategies		high	medium	low
Battery charge/discharge efficiency		high	medium	low
Battery charge cycle lifetime		high	medium	low
SOH characterization		high	medium	low
Average lifetime		high	medium	low
Battery operating temperature		high	medium	low
Annual degradation		high	medium	low
Power increase after overhaul		high	medium	low

Bankability	Order (1,2,3...)	Importance		
Characterization of the overall performance uncertainty and impact of each component		high	medium	low
Characterization of the uncertainty evolution		high	medium	low
Comparison of the impact of technical uncertainty vs uncertainties related to resource availability, financial structure, or energy prices.		high	medium	low
Impact of the new QCP on the CAPEX		high	medium	low
Impact of the new QCP on the OPEX		high	medium	low
Impact of the new QCP on the LCOE		high	medium	low
Impact of the new QCP on the Internal Rate of Return (IRR)		high	medium	low