



Qualitative survey among investors on quality and reliability of solar PV plants 2017



Sign up for the pv magazine Quality Roundtable @ Intersolar Munich

PV Magazine Quality Roundtable 2017



Where: Intersolar Europe ICM Conference Center, Saal 5

When: Thursday, 1 June 2017, 2:30pm - 4:30pm

Registration: <https://www.pv-magazine.com/quality-roundtables/registration/>

Language: English

Partner:



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Telephone survey from March to May 2017 among technical experts of institutional investors

Approach

Telephone survey between March 2017 and May 2017 among institutional investors into solar PV assets.

Objective: identify relevant topics on PV component quality from an investor's point of view for the run-up of the next Quality Roundtable of pv magazine.

English and German questionnaire with 3 questions on quality issues related to photovoltaic components.

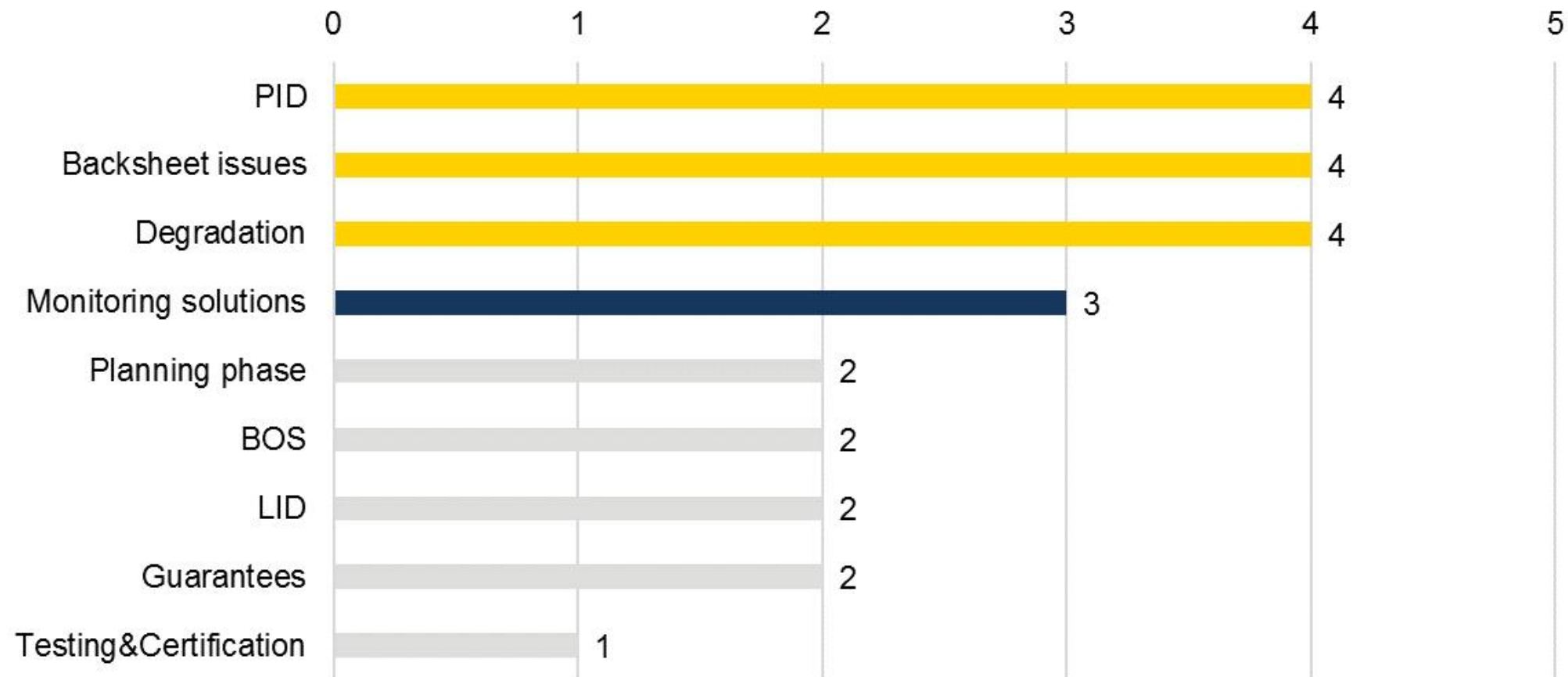
8 qualitative telephone interviews in total:

- 6 from Germany,
- 2 from other European countries.

Answers to open questions were coded by using MaxQDA.

PID, backsheet issues and degradation are the most relevant topics for investors, followed by monitoring solutions

Topics mentioned in answers to open questions



Investor statements indicate that a multitude of quality issues occur in existing PV assets

Investor statements (1/2)

PID

- PID – it's still interesting. ½ year ago in the UK did not know, what it was. Now they know it – it's still a tricky one. Many, many angles. How to deal with it – and how broad is the issue? 20% of all the sites are affected
- PID is still a topic. Still there are no widely accepted tests, furthermore, its occurrence depends heavily from the location of the plant. And: bad communication on the topic from many involved parties!
- PID is a major topic in existing pv parks, not so much in new projects. Affects O&M activities in Germany, and many PV parks in Italy.

Backsheet issues

- UV-irradiation & Backsheet?
- Stable quality of the EVA that is used by module manufacturers? Always the same EVA? Bonding? Storing of EVA?
- Backsheet laminates made of polyamid from a certain manufacturer are not UV stable. Was not noticed in standard tests, only during operation. This could happen with other issues as well.
- Module appearance: many issues, yellowing, delamination, bubbles, optical changes. Often correlating and all phenomena occur. Not always relevant for the energy yield, but one has the feeling that the module might not last for 20 years.

Degradation

- Increased degradation – always, all manufacturers, 50% of the modules are affected.
- Minimization and/or predictability of degradation. No one likes surprises on that issue. Happens quite often.
- Degradation standard module crystalline: 0.5%/a, has not changed.
- Degradation after different time periods.

Investor statements indicate that a multitude of quality issues occur in existing PV assets

Investor statements (2/2)

Monitoring solutions

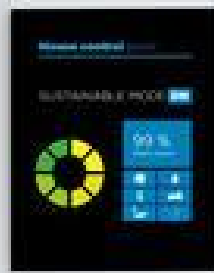
- monitoring data for each individual module: we try to implement this, but does not always make sense from an economical point of view. Here as well, the sweet spot between additional costs and additional yield has to be found.
- Cost effectiveness of thermographic analyses? With the 300€ lense for smart phone, this technology becomes viable for a first assessment. It becomes much more expensive with specialized drones. Thermographics are very helpful, especially in existing assets.
- Infrared and drones work well. Not always 100% clear, but the big errors can be identified immediately. The DIY version with a smart phone works well for a quick check.
- Electroluminescence is very difficult in the field (darkening of the modules, working at night time) Cost effectiveness is difficult to achieve.
- Data for each individual module á la Sunsniffer, Skytron & Co. – measurement of the current in the module. Is a good trend, because it allows for an early detection of degradation and an exchange of individual modules. Not always clear, how to achieve the data.

PID and backsheet issues concern PV investors – and a multitude of other issues

Sum-Up

- PID, backsheet issues and degradation are the most relevant quality-related topics for investors, followed by questions on (new) monitoring solutions.
- In general, the statements of the investors indicate that a multitude of quality issues occur in existing PV assets.
- According to a parallel online survey among readers of pv magazine's newsletters, hot spots are the main quality threat in 2017. However, PID and backsheet issues followed on rank #2 and #3 respectively – and more comments were made on these issues.
- Participants of the online survey put more emphasis on the quality of testing and certification than the institutional investors. The latter stated more often, that they would like to see quality improvements on the side of the module manufacturers and the EPC companies.

Please get back to us, if you have any questions!



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