New irradiation service delivers 40% improvement in PV yield estimations

Reliable PV yield calculations are essential tools for assessing a site's potential to secure financing, or for evaluating an installation's performance to improve O&M. 3E's newly developed Smart Irradiation Service is a source of irradiation data that delivers significant improvements in yield estimation accuracy, without requiring hardware on site.

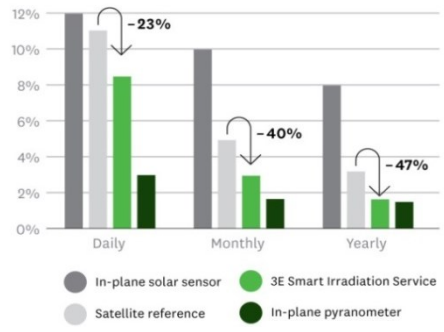

Fig. 1: Error of typical irradiation sources compared with the 3E Smart Irradiation Service.

"The PV industry has grown up: it now requires solid ground for decision-making. We need to deliver the most accurate yield estimates and performance evaluations possible. Good irradiation data is crucial" says Karel De Brabandere, senior PV expert at 3E's research lab and main author of new analysis of irradiation data sources.

Until now, there were typically 3 commonly used sources of irradiation data for a site: standard sensor measurements, pyranometer measurements or satellite data. One source is chosen for yield or performance calculations depending on costs or levels of accuracy / availability required.

The new study by 3E's in-house research team shows that sensor data, although still widely used, is generally not accurate enough to be bankable or reliable enough as a basis for key O&M decisions. Satellite data performs better but is not as accurate as pyranometer measurement data. On the other hand, pyranometers require careful installation and maintenance, which can be costly. "Pyranometers clearly deliver the best data" says Elvin Lemmens, PV engineer in 3E's consultancy team "But, when inspecting sites, I regularly come across pyranometers that have been neglected, or worse yet, are not installed properly at all. This makes the data less reliable, and sometimes unusable if bankability is at stake. It is very unfortunate."

The Smart Irradiation Service was developed in response to these findings. Even without hardware on site, it delivers data that is 40% more accurate than satellite data on a monthly level, and even more on a yearly level, where it is on par with pyranometer data. The service combines available satellite data with data pooled from a network of quality-controlled ground measurements and delivers yield calculations on a daily basis. Integrated as an option in SynaptiQ, 3E's PV monitoring and reporting software, it delivers more reliable Performance Ratio (PR) calculations and can therefore be used to target O&M processes or deliver more accurate reporting to investors.

3E is now launching its Smart Irradiation Service and is publishing the results of its analysis of irradiation sources - including the new service- as a white paper, available on www.3E.eu.

To find out more about the accuracy of solar yield calculations, download 3E's white paper: http://www.3e.eu/projects/publications-and-downloads/

For more details on the Smart Irradiation Service, download the service leaflet: www.3E.eu

For more information about 3E's services and analyses, please contact claire.grandadam(at)3E(dot)eu

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Notes:
3E is an independent consultancy and software service company, delivering solutions for performance optimisation of renewable energy and energy efficiency projects. We provide expert services covering the whole project lifecycle, to support project developers, asset managers, operators, investors, and policy-makers.
SynaptiQ, 3E's monitoring and multi-stakeholder reporting software platform, is designed for performance optimisation of multi-brand, multi-technology solar and wind portfolios. SynaptiQ is a flexible and intelligent software tool, compatible with a very wide range of hardware devices (inverters, loggers, SCADA etc.). The platform is already connected to over 1 000 000 components in GW size PV and wind parks in 10 countries.
3E's international team operates from Brussels (HQ), Toulouse, Milan, Istanbul, Beijing and Cape Town. The company has a project track-record of over 15 years in over 30 countries, and is a trusted party for the major lenders and equity providers in the global renewable energy market.