Photovoltaics: Quantifying Technical Risks Key for Decisions

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“Quantification of Technical Risks in PV Power Systems 2021“: TÜV Rheinland participates in new report of the Photovoltaic Power Systems Programme of the International Energy Agency (IEA PVPS) / New standards for the quantification of technical risks in PV power plants

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TÜV Rheinland and VDE Renewables, together with the international research institutes EURAC, ISFH and SUPSI, have published a new technical report on the quantification of technical risks associated with investments in photovoltaic (PV) projects. The report aims at setting new standards for the quantification of technical risks in PV power plants, taking into account a risk and cost-benefit analysis. The new report provides an overview of methods how to assess technical risks, gives examples of the economic impact, shows a collection of PV Failure Fact Sheets (PVFS) and presents updated statistics of the PV Failure Degradation Sheet (PVDS).

According to Magnus Herz, Senior Expert Solar at TÜV Rheinland, stakeholders need to consider the technical risks when it comes to investing in new and existing PV installations. “Quantitative knowledge of technical risks is one of the key factors for asset managers, banks or project developers to define reliable business decisions before and during the operation of their PV assets,” says Herz, who prepared the report jointly with additional experts of “Task 13” within the Photovoltaic Power Systems Programme of the International Energy Agency (IEA PVPS).

Magnus Herz believes that the data-driven evaluation and modelling of techno-economic performance indicators is key for taking decision support on Levelised Cost of Electricity (LCOE) to the next level. “The most important task for the future is developing standardized procedures to support data-driven evaluation and modelling of techno-economic performance indicators, with limited manual intervention”, Herz says.

The detailed 110-page English-language report, “Quantification of Technical Risks in PV Power Systems 2021,” is available for download at https://www.tuv.com/landingpage/en/pv-solar-energy/downloads/

International network of leading experts

Task 13 was established in 2010 within the IEA PVPS Programme in order to focus on research activities on performance and quality issues with 80 experts from all over the world. The IEA created the Technology Collaboration Program (TCP) 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 (www.iea-pvps.org).

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