



# Integrated financial and technical services for PV power plants

Risk assessment, quality assurance, certification and insurance solutions



# Your one-stop-shop for bankability, investability and insurability

The global market for solar photovoltaic (PV) systems is growing at a considerable pace, as reflected by the increasing volume of installations every year. However, amidst this growth, a myriad of challenges are starting to emerge. Mature markets are facing decreasing internal rates of return and a decline in the availability of projects. As a result, investors and developers are pivoting to focus on emerging markets. Yet, establishing high quality projects which are attractive to investors, commercial banks and insurance companies is becoming more difficult in such environments.

Recognizing the lack of bankable, investable and insurable projects in the market through regular dialogues and conferences with key stakeholders, Allianz Climate Solutions (ACS), the Fraunhofer Institute for Solar Energy Systems ISE, and VDE Renewables have partnered together to provide a comprehensive portfolio of solutions for PV power plants. We strive to help you achieve insurability, investability and bankability by maximizing performance and minimizing overall project investment risk.

Integrated risk assessment, quality assurance, certification and insurance services for PV power plants



Benefits for your PV project:

- Verified system performance and minimized financial and technical risks
- Optimized returns and increased liquidity for developers
- Streamlined development and quality processes can be standardized and adopted
- Support in securing better insurance conditions and financing terms
- Requirements from all stakeholders are accounted for in the project assessment

## Our comprehensive solutions portfolio

Allianz Climate Solutions	Fraunhofer ISE	VDE Renewables
<p><b>Comprehensive risk assessment</b></p> <ul style="list-style-type: none"> <li>Construction and completion risk</li> <li>Technical risk</li> <li>Commercial risk</li> <li>Operational risk</li> <li>Regulatory and macroeconomic risk</li> <li>Financial risk</li> </ul> <p><b>Comprehensive insurance coverage*</b></p> <ul style="list-style-type: none"> <li>Based on AllRisk Policy Wording</li> <li>Includes construction and operational phases</li> <li>Material damage and business interruption</li> </ul> <p><b>PV Performance Insurance*</b></p> <ul style="list-style-type: none"> <li>Up to 10 years coverage</li> <li>Includes volatility of solar irradiation and deviation from minimum output of PV modules guaranteed by the manufacturer</li> </ul> <p><b>Independent project rating**</b></p> <ul style="list-style-type: none"> <li>Offered by Euler Hermes Rating GmbH, internationally accredited agency within Allianz Group</li> </ul>	<p><b>Extensive quality assurance</b></p> <p><b>Development and engineering</b></p> <ul style="list-style-type: none"> <li>Solar resource assessment</li> <li>Environmental stress assessment</li> <li>Precise yield assessments</li> </ul> <p><b>Procurement and commissioning</b></p> <ul style="list-style-type: none"> <li>Reliability and performance tests for module samples</li> <li>On-site module power measurements</li> <li>Visual inspection and thermography imaging</li> <li>Final acceptance test and report</li> </ul> <p><b>Operation</b></p> <ul style="list-style-type: none"> <li>Independent performance evaluation</li> <li>Failure analysis and reporting</li> <li>Long-term performance reporting</li> </ul>	<p><b>Complete PV system certification:</b> <b>VDE Quality Tested mark for PV Power Plants (QT)</b></p> <ul style="list-style-type: none"> <li>Over 300 technical pass/fail criteria</li> <li>Streamlines the quality assurance process from a cost and effort perspective</li> </ul> <p><b>Planning</b></p> <ul style="list-style-type: none"> <li>Check of project management processes</li> <li>Quality of documentation</li> </ul> <p><b>Design</b></p> <ul style="list-style-type: none"> <li>Suitability of component selection</li> <li>Suitability of design to application/site</li> </ul> <p><b>Implementation</b></p> <ul style="list-style-type: none"> <li>Installation quality</li> <li>Acceptance test according to QT standard</li> </ul>

\* Further conditions apply

\*\* PV project must meet eligibility requirements from Euler Hermes Rating GmbH

“ The construction supervision which was carried out was aligned with the bank’s requirements and enabled progress payments according to construction status. ”

- Ali Gökhan Öztürk, Vice President, Girisim Elektrik





## A well-rounded partnership

This partnership brings together leaders from the financial and technical fields relating to solar PV. Allianz Climate Solutions has analyzed nearly 1 trillion Euros worth of projects, while Fraunhofer ISE and VDE Renewables together possess decades of experience with solar systems.

### About Allianz Climate Solutions

Allianz Climate Solutions (ACS) serves as the Allianz center of competence for climate change with a focus on renewable energies. ACS offers insurance services and advisory services on financing issues for renewable energy projects to both external clients and Allianz entities. Furthermore, ACS is responsible for the climate-related strategy development of Allianz and serves as a catalyst for climate-related product development.

### About Fraunhofer ISE

With a staff of about 1,100, the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg, Germany, is the

largest solar energy research institute in Europe. Focusing on energy efficiency, energy conversion, energy distribution and energy storage, the Institute develops materials, components, systems and processes in five business areas and offers accredited testing facilities and other expert lab services to clients. Since 1990 Fraunhofer ISE has made important contributions to PV plant quality assurance through its professional services.

### About VDE Renewables

VDE Renewables is 100 % owned by VDE. It conducts the marketing, business development, and project management activities for certification and non-certification activities in the area of quality assurance for the global renewable energy sector. VDE Renewables is partnered with the VDE Testing and Certification Institute. VDE Renewables works closely with leading institutions around the world to carry out testing of components and systems according to the highest levels of quality.



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