QUALITY ASSURANCE AND YIELD OPTIMIZATION FOR SOLAR POWER PLANTS

Over the last two decades Fraunhofer ISE has made important contributions to the quality assurance of PV and solar thermal power plants. We offer quality assessments for every stage of PV or solar thermal power plant projects – from planning and design up to long-term operation.

Our services and independent reports increase the confidence of all stakeholders, international project developers, EPCs (Engineering, Procurement, Construction), banks and investors. The Institute is certified according to DIN EN ISO 9001:2008.

We assess different PV technologies, non-concentrating thermal systems as well as single and multistage optical concepts for line focus and point focus systems in low, intermediate and high concentrating applications.

Our approach is based on an integrated assessment of material and component properties, cost structure, manufacturing, tolerancing, operation, maintenance and overall performance.
At our Testlab Solar Thermal Systems, we test complete systems and solar thermal components and provide our clients with support in developing their products. We offer accurate shape and surface measurements of mirrors and reflector panels as well as detailed simulations of deformations. Customized performance verification, visual inspection as well as precise energy rating and reliability testing deliver accurate input parameters for our simulation models.

Commissioning

To ensure that power plants are built to the highest standards and that they can reach the expected performance, we offer a comprehensive test program for solar energy systems. The range of services includes visual plant inspections, quality assurance of components, thermography and evaluation of plant performance.

The inspections carried out by Fraunhofer ISE help to identify defects and deficiencies in the installation. Early fault detection enables operators to react quickly for necessary repairs and potential warranty claims. Our tests are performed with approved state-of-the-art procedures.

System in Operation

Independent confirmation of the quality and performance of components and complete plants is valuable to manufacturers, EPCs, banks and investors alike, irrespective of how long a plant has been operating. We offer independent performance reports that are reliable and accurate, for periods ranging from a few weeks to many years. The reports include benchmarking as well as an analysis of measured versus expected performance ratios, based on our yield assessment. Moreover, a comprehensive plant inspection and failure analysis provides information about safety, optimization potential and may serve as a basis for repowering projects. If desired, we also offer the certification of complete PV systems in cooperation with the VDE Testing and Certification Institute.

Customers profit from our long-standing experience with multi-MW systems and our network of international partners that guarantee excellent support world-wide.