Outstanding quality is decisive for the longevity and reliability of the inverters and other system technology components determining the satisfaction of everyone involved in a project. Inverter quality minimizes risks and provides stable cash flows and maximum yields.

Sizeable investments, new developments, and the demands posed by local grid requirements and climate conditions - throughout their life span, PV power plants must meet challenges that affect the project's stability, reliability, and longevity. As the control centers of a PV power plant, inverters play a key role. Their quality is decisive.

Development, production, and project management at the very highest level of quality underpin SMA’s global market and technology leadership. Every system and process within the company is quality controlled under strict directives and standards, which in turn are constantly monitored and improved.
Unique Worldwide: SMA Test Center

Every day, highly trained testing and development engineers in the approximately 1,400 square meter Test Center examine central inverters for compliance with current statutes and directives. Going through seven test chambers, the testing lab, and twelve system and development test positions, state-of-the-art testing methods covering the rates of voltage, current, performance, temperature, humidity, and electromagnetic compatibility are deployed.

CLIMATE TESTS UNDER FULL LOAD

Durability tests are a key component of compliance testing. The central inverters are exposed to extreme temperatures for up to 1,000 consecutive hours. The climate chamber can simulate Death Valley as well as a tropical rainforest. The temperature range extends from -40 degrees Celsius to +90 degrees Celsius. SMA has a unique advantage with its time-tested, proprietary methods for conducting combined tests with special equipment. This provides an enormous range of testing possibilities. And even during the climate tests, the inverters are operated at full power.

SMA Test Center: The Quality of an Inverter Is Tested Against Every Conceivable Stress Factor Including Combined Tests Under Full Load

ROBUST AT ALTITUDE  EM-COMPATIBLE  DUST-TIGHT  EARTHQUAKE-PROOF  CLIMATE TESTED  LIGHTNING TESTED
Integrated Quality

DISCERNING CUSTOMERS SET THE BAR HIGH
Positive appraisals around the globe repeatedly confirm that SMA delivers top quality in all functional areas. Regular customer audits, including questions about specific technical issues, are routine at SMA. Visits to company headquarters and the Test Center provide an opportunity to discuss key concerns and perform specific measurements of any kind in response to individual requests. SMA finds the right answers to every question.

SMA SERVICE FOR LONG-TERM RELIABILITY
With its principle of predictive maintenance and its worldwide spare parts management, SMA sets high standards in the area of service. Unanticipated service calls can be prevented with planned visits, including visits at night, without diminishing plant yield. Spare parts management is optimally structured worldwide, making parts available in the right quantity and quality whenever and wherever needed. A decisive advantage for the continuous, smooth, high-yield operation of the PV project over its life span.

FULLY QUALIFIED SUPPLIERS
SMA passes its quality standards on to all its suppliers. Rigorous qualification and optimization of the entire supply chain is another task of SMA quality management. All suppliers are tested and developed to rule out any quality defects in advance. The complete supply chain must meet SMA’s exacting standards so that the end customers receive outstanding quality.

A Passion For Achieving Success
We aim to exceed customer expectations, enable them to achieve stable cash flows, reliability, and long-term security for their PV power plants – with inverters of outstanding quality. However, we also continually strive to improve our daily work processes. Along with every employee’s passion for quality, this is based on first-class education and training measures to that end.

Quality means the perfect alignment of all our work processes. In every business area of the company and among all the people who work there every day. We draw on successful and proven methods from other industries, such as the automotive industry, if they are appropriate for the solar sector and we can use them effectively. One example is the FMEA method (failure mode and effects analysis) to prevent errors and avoid risks. Thanks to our in-house Test Center, all of our performance tests can be conducted under full load.

Paul Sendke, Director Quality Management, SMA Power Plant Solutions.
The Cycle of Quality

At SMA, quality cycles ensure first-class quality. Results from the comprehensive test series in the Test Center, along with all the results from various tests during development, steadily flow back into the development and production of central inverters. Acquired knowledge is applied proactively and sustainably. Recurring test mechanisms in the developmental stages and subsequent type tests ensure the quality of all the components and assemblies used.

FIELD TESTS AROUND THE WORLD

Results from field tests around the world feed directly into the quality cycle, as does the experience of SMA Service personnel in every location. As a result, the optimization of products constantly moves forward. The outcome: verifiable quality with first-class technology.