



kiwa

Accreditation

Our national and international recognition by accreditation bodies ensures the high quality of our work. Our reports, declarations and certificates are accepted worldwide.

Since 2011 Kiwa Primara has been accredited by the Deutsche Akkreditierungsstelle GmbH (DAKKS) according to DIN EN 17025 and DIN EN 17065 to test and certify electrical equipment. In addition, we offer testing and certification in the IECCEB Scheme procedure and are a recognized GS certification body.

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We connect *your* *System to the Grid*

System Certification for Grid Connection
of Photovoltaic and Combined Heat and Power Systems

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System Certification for Grid Connection of Photovoltaic Systems and Combined Heat and Power (CHP) Systems

In order to connect photovoltaic and CHP systems (generation facilities) to the public power grid, , a system certificate in accordance with VDE-AR-N 4110 must be submitted to the grid operator for system capacities P_{AV,E} >270 kW or ΣP_Emax >500 kW. The system certificate confirms to the grid operator that the system has been designed in compliance with all applicable regulations. Our staff are pioneers in this field with many years of experience and extensive expertise in the technical connection rules and the specific technical connection requirements of various grid operators.

Target Groups for Certification

Certification is aimed at companies involved in the planning, construction and operation of generation plants.

The plant certificate confirms to the grid operator that the generation plant has been planned in accordance with applicable standards. If the electrical characteristics of the plant cannot be demonstrated by a plant certificate, a plant operator may be denied connection to the medium-voltage network in Germany.

Our Expertise for Your Success

We are the experts in international approval of grid-parallel self-generation plants and your point of contact for:

- Photovoltaic plants / solar parks
- Battery storage systems
- Hydropower plants
- CHP plants
- Backup power plants

For the German market, we review and certify your generation plant (EZA) in accordance with the applicable medium-voltage guideline – VDE-AR-N 4110 – Technical Rules for the Connection of Customer Installations to the Medium-Voltage Network, including TR8 of the FGW. As an accredited certification body, we issue simplified plant certificates Type B and plant certificates Type A in accordance with VDE-AR-N 4110, as well as EZA declarations of conformity, and support you with the commissioning declaration in accordance with Annex E.11 of VDE-AR-N 4110.

Our Services

Plant Certification Type A or B

- Professional support throughout the certification process
- Review of planning documents
- Issuance of the plant certificate Type A or B

EZA Declaration of Conformity

- Document review
- Preparation of the inspection report
- Preparation of a document list
- Issuance of the EZA declaration of conformity

Commissioning Declaration

- Review of plant documentation
- Review of test records from commissioning tests
- Preparation of photo documentation
- Protection test records
- Records for testing of remote control equipment
- Parameter verification / setting records for EZA controller and generation units

Note: We do not prepare commissioning records in accordance with Annex E.10 of VDE-AR-N 4110; this is the responsibility of the plant installer/commissioner and plant operator.

Individual Verification Procedure for Hydropower Plants Connected to the Low-Voltage Network

- Issuance of the verification document in the individual verification procedure
- Support with independently conducting measurements
- Conducting measurements by Kiwa Primara

Protection Tests

- Overcurrent time protection (UMZ / AMZ)
- Disconnection protection / NA protection (voltage and frequency protection)
- Reactive power directional undervoltage protection (Q-U protection)
- Overcurrent protection at current transformer-supplied protective devices
- Earth fault protection
- Distance protection
- Generator protection

Functional Tests of EZA Controllers

- Active and reactive power control of EZA controllers according to grid operator specifications:
- Q(U) characteristic curve
 - Reactive power Q with voltage limitation function
 - Q(P) characteristic curve
 - Displacement factor $\cos \varphi$

Also if actual value recording/ logging is unavailable: execution and documentation of measurements with state-of-the-art mobile measurement equipment.

Preparation of Setting Records for EZE and EZA Controllers / Parameter Verification

- Verification of devices (equipment) with regard to the specifications from the unit/component and plant certificate
- Verification and readout of the correct settings of inverters, CHP systems and EZA controllers
- Support with complex grid connection guideline functions (grid code functions)

Recurring Inspections

- Record of inspection during the operating phase in accordance with Chapter 11.5.5 of VDE-AR-N 4110 (including protection test records) to fulfill Article 41 of NC RfG
- Support with compiling the required information for submission to the grid operator
- Protection tests and functional tests of active and reactive power control
- All-round service tailored to your needs

Further Tests

- Power measurements
- Power quality