

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-20107-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 16.09.2024

Date of issue: 16.09.2024

Holder of accreditation certificate:

SoWiTec development GmbH
Löherstraße 24, 72820 Sonnenbühl

with the location

SoWiTec development GmbH
Löherstraße 24, 72820 Sonnenbühl

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of calibration laboratories and they conform to the principles of DIN EN ISO 9001.

Tests in the fields:

- 1. implementation, evaluation and analysis of wind measurements with remote measurement methods (SoDAR and LiDAR) and wind measuring masts / meteorological measuring equipment**
- 2. determination of wind potential and energy yields of wind turbines; determination of site quality**
- 3. preparation of noise immission forecasts for wind turbines**
- 4. preparation of shadow impact forecasts for wind turbines**
- 5. implementation, evaluation and analysis of global radiation measurements**

This certificate annex is only valid together with the written accreditation certificate and reflects the status as indicated by the date of issue. The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at <https://www.dakks.de>.

Abbreviations used: see last page

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6. determination of the irradiation potential and yield estimation for photovoltaic systems

Flexible scope of accreditation:

The testing laboratory is permitted to use the standardized or equivalent test methods marked with [Flex A] with different issue statuses without the need for prior information and approval from DAkkS (flexible accreditation according to category A).

The testing laboratory has a current list of all test methods in the flexible accreditation area. The list is publicly available on the website of the testing laboratory.

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1. Wind potential measurements and calculations as well as determination of the energy yield:

Standard / Date of issue In-house procedure / version	Title of the standard or in-house procedure (indicate deviations / modifications of standard procedures if applicable)
IEC 61400-1 [Flex A] 2019-02	Wind energy generation systems - Part 1: Design requirements
IEC 61400-12-1 [Flex A] 2022-09	Wind energy generation systems - Part 12-1: Power performance measurements of electricity producing wind turbines
FGW TR 6 [Flex A] Rev. 12 / 2023-11	Determination of wind potential and energy yields
IEC 61400-50 [Flex A] 2022-08	Wind measurement - Overview
IEC 61400-50-1 [Flex A] 2022-11	Wind measurement – Application of meteorological mast, nacelle und spinner mounted instruments <i>(No wind measurements with nacelle or spinner anemometers)</i>
IEC 61400-50-2 [Flex A] 2022-08	Wind measurement – Application of ground-mounted remote sensing technology

2. Power measurement on wind turbines (power curve):

Standard / Date of issue In-house procedure / version	Title of the standard or in-house procedure (indicate deviations / modifications of standard procedures if applicable)
IEC 61400-1 [Flex A] 2019-02	Wind energy generation systems - Part 1: Design requirements
IEC 61400-12-1 [Flex A] 2022-09	Wind energy generation systems - Part 12-1: Power performance measurements of electricity producing wind turbines
FGW TR5 [Flex A] Rev. 9 / 2023-04	Determination and application of the reference yield
FGW TR 6 [Flex A] Rev. 12 / 2023-11	Determination of wind potential and energy yields

3. Preparation of noise immission forecasts for wind turbines

Standard / Date of issue In-house procedure / version	Title of the standard or in-house procedure (indicate deviations / modifications of standard procedures if applicable)
ISO 9613-2 [Flex A] 2024-01	Acoustics - Attenuation of sound during propagation outdoors –

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	Part 2: Engineering method for the prediction of sound pressure levels outdoors
TA Noise 1998-08	Sixth General Administrative Regulation to the Federal Immission Control Act: Technical Instructions on Noise Protection
LAI 2016-06	Information on noise immission control for wind turbines (WKA), Federal/State Working Group on Immission Control (LAI)

4. Creation of shadow impact forecasts for wind turbines

Standard / Date of issue In-house procedure / version	Title of the standard or in-house procedure (indicate deviations / modifications of standard procedures if applicable)
LAI 2020-01	Notes on the determination and assessment of optical immissions from wind turbines Update 2019 (wind turbine shadow impact notes)
HV_SFA 2021-05	Creation of shadow impact forecasts for wind turbines

5. Carrying out, evaluating and analyzing global radiation measurements to determine the irradiation potential

Standard / Date of issue In-house procedure / version	Title of the standard or in-house procedure (indicate deviations / modifications of standard procedures if applicable)
IEC 61724-1 [Flex A] 2017-03	Photovoltaic system performance - Part 1: Monitoring
VDI 3786 Bl. 1 [Flex A] 2013-08	Environmental meteorology - Meteorological measurements - Basics
VDI 3786 Bl. 5 [Flex A] 2022-04	Environmental meteorology - Meteorological measurements - Radiation
WMO-No. 8 [Flex A] 2021	Guide to Meteorological Instruments and Methods of Observation Volume I –Measurement of Meteorological Variables
HV_SRM 2021-05	Carrying out measurements of global radiation
HV_SRA 2021-05	Evaluation and analysis of global radiation measurements to determine the irradiation potential

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6. Determination of the irradiation potential and yield estimation for photovoltaic systems

Standard / Date of issue In-house procedure / version	Title of the standard or in-house procedure (indicate deviations / modifications of standard procedures if applicable)
HV_AEP_PV 2024-05	Determination of irradiation potential and yield estimation for photovoltaic systems

Abbreviations used:

DIN	Deutsches Institut für Normung e.V. – German institute for standardization
FGW	Fördergesellschaft Windenergie und andere Dezentrale Energien e. V.
HV_XXX	In-house process of SOWITEC development GmbH
IEC	International Electrotechnical Commission
LAI	Federal/State Working Group for Immission Control
LiDAR	Light Detection And Ranging
SoDAR	Sound/Sonic Detecting And Ranging
TA	Technical Instructions
TR	Technical Guideline
VDI	Association of German Engineers
WMO	World Meteorological Organization

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