Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-11038-01-00 according to DIN EN ISO/IEC 17025:2005

Period of validity: 08.03.2018 to 01.11.2020 Date of issue: 08.03.2018

Holder of certificate:

Ramboll CUBE GmbH

with the locations:

Breitscheidstraße 6, 34119 Kassel
Andreaestraße 3, 30159 Hannover

Tests in the fields:

determination of wind potential and energy yields of wind turbines (WEA) including testing of wind climatological input data; determination of the 60% reference yield certification; Determination of the site quality; execution and evaluation of wind measurements for the determination of the wind potential; preparation of sound immission prognoses for wind turbines; preparation of shadow impact; preparation of expert opinions for the natural ambient turbulence of wind turbine sites based on the calculation of turbulence intensities

Abbreviations used: see last page

Within the scope of accreditation marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates.

The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

The test procedures are marked with the following abbreviations for the locations where they are performed:

KS = Kassel **H** = Hannover

1 Determination of wind potential and energy yields of wind turbines (WEA) including testing of wind climatological input data; Determination of the site quality KS, H

FGW TR 6, Rev. 9 * 2014-09	Determination of Wind Potential and Energy Yields
FGW TR 6, Rev. 9 * Annex C 2016-09	Determining the site quality for commissioning in accordance with the German Renewable Act (EEG 2017)
FGW TR 5, Rev. 5 * 2013-01	Determining and applying the Reference Yield
PB Windgutachten 2015-09	Preparation of wind assessment studies

with reference to:

EEG 2017 *German Renewable Act*

2 Execution and evaluation of wind measurements for the determination of the wind potential KS

IEC 61400-12-1 2. Ed * 2017	Wind Turbines - Part 12-1: Power performance measurements of electricity producing wind turbines
FGW TR 6, Rev. 9 * 2014-09	Determination of Wind Potential and Energy Yields
PB Windmessungen 2015-09	Execution of wind measurements to the determination of Wind Potential
PB Windmessungen 2015-09	Wind measurements with Lidar

3 Preparation of sound immission prognoses for wind turbines KS

TA Lärm 1998-08	Sixth general administrative regulation of the Federal Immission Control Act - Technical Guidance for protection against noise - TA Lärm
PB Schall 2015-01	Preparation of sound immission prognoses

4 Preparation of shadow impact prognoses for wind turbines KS

PB Schatten 2015-01	Preparation of shadow impact prognoses
LAI 2002-03	Hinweise zur Ermittlung und Beurteilung der optischen Immissionen von Windenergieanlagen (Länderausschuss für Immissionsschutz) WEA Schattenwurf-Hinweise

5 Preparation of expert opinions for the natural ambient turbulence of wind turbine sites based on the calculation of turbulence intensities KS

IEC 61400-1 * 2005+A1:2010	Wind turbines Part 1: Design requirements
PB Turbulenzgutachten 2010-01	Preparation of turbulence calculations

Abbreviations used:

DIN	German Institute for Standardization
FGW	Federation of German Windpower and other Renewable Energies
PB…	Test Procedure of CUBE Engineering GmbH
TR	Technical rule