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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46245-2025

**Wind energy generation systems - Power performance
measurement based site calibration**

风能发电系统 功率特性测试场地标定

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is equivalent to IEC 61400-12-3:2022 "Wind power generation systems - Part 12-3. Power characteristics based on site specifications".

test".

The following minimal editorial changes have been made to this document.

---To align with existing standards, the standard name has been changed to "Field Standardization of Power Characteristic Testing for Wind Power Generation Systems";

---Incorporating the errata from IEC 61400-12-3:2022/CORR1draft.2023, change SVT in formula (8) to S_{sc} , u_{2VT} , $c_{oc,i,j}$ is changed to u_{2VT} , $c_{oc,i,j} \cdot V_{2i}$, and a comment is added (see 10.3).

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Wind Power (SAC/TC50).

1 Scope

This document specifies the measurement and analysis procedures for wind speed corrections derived from topographic effects.

This document applies to the performance testing of all types and sizes of grid-connected wind turbines described in IEC 61400-12-1. This procedure...

Performance evaluation of specific wind turbine units applicable to specific locations.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

IEC 61400-12-1 Wind power generation systems - Part 12-1. Test of power characteristics of wind turbine generators (Windenergygenera-Note. GB/T 18451.2-2025 Power characteristic test of wind turbine generator sets for wind power generation systems (IEC 61400-12-1:2022, IDT) IEC 61400-12-5 Wind power generation systems - Part 12-5. Power characteristics assessment of obstacles and terrain (Windenergy) Note. GB/T 46242-2025 Power characteristic testing of wind power generation systems - Obstacle and terrain assessment (IEC 61400-12-5:2022, IDT) IEC 61400-50-1 Wind power generation systems - Part 50-1. Wind measurement based on measurements mounted on anemometers, nacelles and fairings Note. GB/T 46247-2025 Wind Energy Resource Measurement Based on Wind Measurement Equipment Installed on Wind Measurement Towers, Nacelles and Fairings for Wind Power Generation Systems (IEC 61400-50-1:2022, IDT) ISO/IEC GUIDE 98-3:2008 Uncertainty in measurement - Part 3: Guidelines for the expression of uncertainty in measurement (Uncertainty in measurement) Note. GB/T 27418-2017 Evaluation and expression of measurement uncertainty (ISO/IEC Guide 98-3:2008, MOD)

3 Terms and Definitions

The following terms and definitions apply to this document.

accuracy

The degree to which the measured value of the measured object closely approximates the true value.

Atmospheric stability A measure of whether wind promotes or inhibits vertical mixing trends.

Note: The characteristics of a stable atmosphere, compared to an unstable atmosphere, are a higher temperature gradient with altitude, higher wind shear, potential wind reversal, and lower turbulence intensity.

Temperature. Neutral and unstable atmospheres typically result in lower temperature gradients and wind shear.