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GB/T 43904-2024

Wind energy generation systems - Operation evaluation index system for wind turbines

风能发电系统 风力发电机组运行评价指标体系

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Preview: page 1 of 4 shown, 15 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-43904-2024

Table of Contents

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Foreword

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1 Scope

GB/T 43904-2024 sets the index system for evaluating how a wind turbine actually performs in operation. China has more installed wind capacity than any other country, much of it now out of warranty and changing hands, and the question a buyer, an insurer or an operator asks is not what the power curve said at handover but how the machine has behaved since: how much it generated against the wind that was available, how much of the time it was able to run, how often it failed and for how long, what it cost to keep running, and how it behaved at the grid connection. The standard sets the general principles and then the evaluation indicators and their calculation methods under five headings - power generation performance, availability, reliability, operation and maintenance economics, and grid connection characteristics - followed by the operational quality evaluation itself, with its data sources and principal indicators. It took effect on 1 November 2024.

This document specifies the evaluation indicators and calculation methods, as well as the operation quality evaluation contents of wind turbines: This document is applicable to the evaluation of the operating quality of grid-connected wind turbines:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document: For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document: GB/T 2900:

53 Electrical terminology Wind turbine generator system GB/T 18451:

3 Terms and definitions

The terms and definitions defined in GB/T 2900:53 and the following apply to this document: 3:

1 Wind turbine failure A characteristic state in which a wind turbine is unable to perform its

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specified functions:

Note: This includes the situation where the same event that affects the normal operation of the wind turbine generator set is remotely reset three or more times in a row: Preventive maintenance and other planned activities The exceptions are situations where the required functions cannot be performed due to lack of external resources: 3:

2 Sub-health The wind turbine generator set has not reported any faults, but cannot operate normally as designed: 3:3 reliability The ability of a product to complete specified functions under specified conditions and within a specified time: 3:

4 Maintenance and repair Maintenance The combination of all technical and administrative activities performed to maintain, restore or improve the required technical condition and functionality of a product:

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