



TECHNICAL SPECIFICATION



Grid code compliance assessment methods for grid connection of wind and PV power plants

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**GRID CODE COMPLIANCE ASSESSMENT METHODS FOR GRID
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FOREWORD

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The language used for the development of this Technical Specification is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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GRID CODE COMPLIANCE ASSESSMENT METHODS FOR GRID CONNECTION OF WIND AND PV POWER PLANTS

1 Scope

This technical specification highlights recommended technical methods of grid code compliance assessment for grid connection of wind and PV power plants as the basic components of grid connection evaluation. The electrical behaviour of wind and PV power plants in this technical specification includes frequency and voltage range, reactive power capability, control performance including active power based control and reactive power based control, fault ride through capability and power quality.

Compliance assessment is the process of determining whether the electrical behaviour of wind and PV power plants meets specific technical requirements in grid codes or technical regulations. The assessment methods include compliance testing, compliance simulation and compliance monitoring. The input for compliance assessment includes relevant supporting documents, testing results and validated simulation models, and continuous monitoring data. The scope of this technical specification only covers assessment methods from a technical aspect; processes related to certification are not included.

This technical specification is applicable to wind and PV power plants connected to the electrical power grid.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-415:1999, *International Electrotechnical Vocabulary – Part 415: Wind turbine generator systems*

IEC 61400-21-1, *Wind energy generation systems – Part 21-1: Measurement and assessment of electrical characteristics – Wind turbines*

IEC 62934, *Grid integration of renewable energy generation – Terms and definitions*