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

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

FOREWORD

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IEC TS 63102 has been prepared by subcommittee SC 8A: Grid integration of renewable energy generation, of IEC technical committee TC 8: System aspects of electrical energy supply. It is a Technical Specification.

The text of this Technical Specification is based on the following documents:

Draft	Report on voting
8A/80/DTS	8A/86/RVDTS

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

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.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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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*

3 Terms, definitions, abbreviations and subscripts

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61400-21-1, IEC 60050-415, IEC 62934 and the following apply.

ISO and IEC also maintain terminological database for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp