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# NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

# GB/Z 44047-2024

## Floating offshore wind turbines - Design requirements

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## Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1.Structure and drafting rules for standardization documents"

Drafting.

This document is equivalent to IEC TS61400-3-2.2019 "Wind energy generation systems Part 3-2.Floating offshore wind turbines

Design Requirements", the document type was adjusted from ISO technical specifications to my country's guiding technical documents.

The following minimal editorial changes were made to this document.

--- To coordinate with the existing standards, the name of the standard is changed to "Design Requirements for Floating Offshore Wind Turbines".

## 1 Scope

This document specifies additional requirements for the assessment of external conditions at floating offshore wind turbine (FOWT) sites and for ensuring

The basic design requirements for the engineering integrity of FOWTs are to provide an appropriate level of protection during the expected life cycle of the unit against

Prevent various risks from causing damage to the unit.

This document focuses on the engineering integrity of the FOWT structural components, but also addresses the mechanical devices of the control and protection systems, the internal electrical systems, and the

subsystems such as system and mechanical system.

If the floating foundation of a wind turbine is subjected to hydrodynamic loads and supported by buoyancy and an anchoring system, the wind

The generator set is considered as FOWT. FOWT consists of five main subsystems. wind turbine nacelle assembly (RNA), tower, floating foundation, anchor

Systems and supporting machinery, equipment and systems that do not belong to RNA.

The following types of floating foundation structures are explicitly considered in this document.

a) Ship and barge structures;

b) Semi-submersible;

c) Single column type (Spar);

d) Tension Leg Platform/Buoy (TLP/T LB).

In addition to the types of structures listed above, this document also generally includes other floating platforms used to support wind turbines.

These platform structures may vary greatly in geometry and construction type and therefore may only partially meet the requirements of this document.

In all such cases, the specific requirements set forth in this document may not apply to the design of all or part of such structures.

The conformity of the components requires that the basic principles followed in the design meet or exceed the safety level required by this document.

This document applies to unmanned floating structures with a single horizontal axis wind

turbine.

Axis wind turbines or combined wind/wave energy systems may require additional design considerations.

This document is used in conjunction with the corresponding IEC and ISO standards referenced in Chapter 2.This document fully complies with IEC 61400-1 and

The safety level of FOWT designed according to this document meets or exceeds the requirements of IEC 61400-1 and IEC 61400-

The level specified in 3-1.

## 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.

## 1 Design requirements)

Note. GB/T 18451.1-2022 Design requirements for wind turbines (IEC 61400-1.2019, IDT)

IEC 61400-3-1.2019 Wind energy generation systems Part 3-1.Design requirements for fixed offshore wind turbines

Note. GB/T 31517.1-2022 Design requirements for fixed offshore wind turbines (IEC 61400-3-1.2019, IDT)

ISO.19901-1.2015 Particular requirements for offshore structures for the petroleum and natural gas industries Part 1.Marine meteorological design and operation