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

GB/T 46662-2025

**Requirements and measurement methods for the dynamic
energy efficiency of data centre IT systems**

数据中心IT系统动态能效要求和测量方法

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Table of Contents

1.Scope	1
2 Normative References	1
3.Terms and Definitions	1
4.Abbreviations	2
5.Dynamic Energy Efficiency Level Requirements for Data Center IT Systems	2
6 Measurement of DEE Calculation Parameters in Data Center 2 7.DEE Calculation Method	4
6 Reference	7

Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting is scheduled. 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 and is under the jurisdiction of the National Information Technology Standardization Technical Committee (SAC/TC 28). This document was drafted by: Institute of Information Engineering, Chinese Academy of Sciences; Alibaba Cloud (Beijing) Technology Co., Ltd.; National Institute of Metrology, China. China Electronics Technology Standardization Institute, State Grid Hubei Electric Power Co., Ltd. Information and Communication Company, Alibaba Cloud Computing Co., Ltd., Beijing CESI Science and Technology Development Co., Ltd., State Grid Corporation of China, Institute of Computing Technology, Chinese Academy of Sciences, Bank of Communications Co., Ltd. National Energy Conservation Center, State Grid Jiangsu Electric Power Co., Ltd. Information and Communication Branch, China United Network Communications Co., Ltd. Guangdong Branch China United Network Communications Corporation Foshan Branch, China Telecom Consulting & Design Institute Co., Ltd., Beijing Lingzhi Xintong Energy Conservation Technology Research Institute China Mobile Communications Group Design Institute Co., Ltd., Beijing Digital Technology Co., Ltd., Zhongke Saineng (Beijing) Technology Co., Ltd., Zhongguancun Village Association Innovation and Entrepreneurship Information Industry Promotion Association, Beijing University of Technology, East China Branch of China Electronics Technology Standardization Institute, Changchun Automotive Vocational and Technical College Universities, Guizhou Zhonghui Technology Development Co., Ltd., Guangzhou Haote Energy Conservation and Environmental Protection Technology Co., Ltd., Nanjing Qunding Technology Co., Ltd. Guangdong Ji'an Technology

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1 Scope

GB/T 46662-2025 is the Chinese national standard covering measuring efficiency while the load moves - the useful work delivered against the power drawn at each utilisation level, rather than the single figure taken at full load which no data centre ever sits at, and the requirements that follow from it. PUE says nothing about what the servers do with the power. First edition, in force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document specifies the dynamic energy efficiency level requirements and disclosure requirements for data center IT systems, and describes the dynamic energy efficiency of data center IT systems. The measurement and calculation methods of the calculation parameters. This document applies to dynamic energy efficiency calculations for data center IT systems and is suitable for analyzing the energy efficiency of IT systems directly related to workload. This information is provided for reference in the design, construction, and operation and maintenance of data centers.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below. 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.

GB/T 2887 General Specifications for Computer Venues

GB 40879-2021 Energy Efficiency Limits and Energy Efficiency Grades for Data Centers

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Data center IT system dynamic energy efficiency Within the same time period, the power consumption of data center IT equipment minus the power consumption of all IT equipment when it is in an idle state. The ratio to the total power consumption of the data

center.

3.2 Data center total electric energy consumption The total electrical energy consumed to maintain the normal operation of a data center.

Note. This includes the power consumption of IT equipment, refrigeration equipment, power supply and distribution systems, and other auxiliary facilities. [Source: GB/T 32910.3-2016, 3.2, with modifications]

3.3 Data center IT equipment electric energy consumption The total electrical energy consumed by all types of IT equipment within a data center.

3.4 IT equipment idle mode power consumption Power consumption of IT equipment in idle state.

Note. IT equipment idle state refers to the IT equipment having completed initialization, with the operating system and firmware in a responsive state, but not executing any business workload. The internal heat dissipation components (fans, etc.) of the equipment are in a working mode that maintains the minimum operating requirements of the equipment.