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GB/T 44989-2024

Evaluation for green data center

绿色数据中心评价

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Table of Contents

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. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed and coordinated by the National Information Technology Standardization Technical Committee (SAC/TC28). This document was drafted by: China Electronics Technology Standardization Institute, Shenzhen Tencent Computer Systems Co., Ltd., Runze Technology Development Co., Ltd. Ltd., Sugon Data Infrastructure Innovation Technology (Beijing) Co., Ltd., Kehua Data Co., Ltd., Beijing AVIC Beijing Runke Technology Co., Ltd., China Mobile Communications Group Design Institute Co., Ltd., China Science and Technology (Beijing) Technology Co., Ltd., Beijing Tonghe Shiyi Telecom Technology Co., Ltd. Institute of Science and Technology Co., Ltd., Nanjing Jialitu Computer Room Environment Technology Co., Ltd., Zhejiang Yizhou Electronic Technology Co., Ltd., Yimikang Technology Group Co., Ltd., Beijing Power Exchange Co., Ltd., National Energy Conservation Center, Inspur Electronic Information Industry Co., Ltd. Ltd., State Grid Digital Technology Holdings Co., Ltd., Qinghai Provincial Development and Reform Commission, Guizhou Xiangming Technology Co., Ltd., Huawei Technologies Co., Ltd., Beijing Zhenshitong Technology Co., Ltd., Shenzhen Kstar Technology Co., Ltd., Zhejiang Post and Telecommunications Engineering Construction Co., Ltd. Ltd., Xinshangpin Technology Industry Co., Ltd., Beijing Ehualu Information Technology Co., Ltd., Zhongguancun Xiezhong Chuangzhi Information Industry Promotion Association, Shenzhen Qianhai Energy Technology Development Co., Ltd., Hangzhou Wantai Certification Co., Ltd., Beijing Kejitong Electronic Engineering Co., Ltd., Beijing Zhongwang Digital Information Technology Research Institute Co., Ltd., Guangdong Shenling Environmental Systems Co., Ltd., China Electronics Technology Standardization Institute East China Branch, Beijing

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1 Scope

GB/T 44989-2024 is the Chinese evaluation standard for green data centres. Data centres are now a named target of Chinese energy policy, with binding PUE ceilings in the eastern hub cities and a national programme moving computing westward to where the power is renewable, and that policy needs a single method of scoring a facility rather than the several competing schemes that preceded it. The standard sets the rating levels, the evaluation indicators - energy efficiency, water use, renewable energy share, resource utilisation, carbon, and the operational management behind them - and the evaluation method by which a centre is scored and graded. Normative annexes set the qualification requirements for third-party evaluation bodies and the calculation methods for the load utilisation rate of the information equipment, for the water resource utilisation efficiency, and for the index evaluation itself. It takes effect on 1 June 2025.

This document establishes the green data center evaluation level and specifies the evaluation indicators and methods. This document applies to the construction, operation, maintenance, transformation and evaluation of green data centers.

2 Normative references

The contents of the following documents constitute 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 17167 General rules for the allocation and management of energy metering instruments in energy-consuming units

GB/T 18870 General technical requirements for water-saving products

GB/T 26572 Limit requirements for restricted substances in electronic and electrical products

GB/T 32910.4-2021 Data center resource utilization Part

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Data Center It consists of computer sites (computer rooms), other infrastructure, information system hardware and software, information resources (data) and personnel, as well as corresponding regulations. An entity composed of degrees. [Source: GB/T 32910.1-2017, 2.1]

3.2 Green Data Center Green Data Center During the entire life cycle, under the conditions of ensuring the safety of personnel and the safe, stable and reliable operation of information systems and their supporting equipment, the A data center that saves energy resources and reduces negative environmental impact.

3.3 Renewable energy A type of primary energy that is, to a certain extent, regenerated on Earth by natural processes.

Note. This type of energy includes solar energy, hydropower, wind energy, biomass energy, ocean energy and geothermal energy. [Source: GB/T 32910.1-2017, 2.7, modified]

3.4 Water sources different from traditional surface water supply and groundwater supply include recycled water, rainwater, seawater, etc.

4 Renewable energy utilization rate

GB 40879-2021 Data center energy efficiency limit values and energy efficiency grades

GB/T 42581 Information Technology Service Data Center Business Continuity Rating Evaluation Criteria