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

GB/T 46443-2025

**Thermal management for energy storage - Refrigerating units
(heat pumps) for electrochemical energy storage**

储能热管理 电化学储能用制冷（热泵）机组

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. 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 by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Refrigeration and Air Conditioning Equipment (SAC/TC238). This document was drafted by: Chongqing Midea General Refrigeration Equipment Co., Ltd., Hefei General Electromechanical Products Testing Institute Co., Ltd., and Shenzhen Ying Vic Technology Co., Ltd., Sanhe Tongfei Refrigeration Co., Ltd., Shanghai Jiao Tong University, Hefei Atomic Innovation Energy Co., Ltd., State Grid Integrated Energy Services Group Co., Ltd., Contemporary Amperex Technology Co., Limited (CATL), Sungrow Power Supply Co., Ltd., CRRC Zhuzhou Electric Co., Ltd. Liji Locomotive Research Institute Co., Ltd. Integrated Energy Business Unit, Huawei Technologies Co., Ltd., Guangdong Midea HVAC Equipment Co., Ltd., Qingdao Hisense Network Network Energy Co., Ltd., Zhuhai Gree Electric Appliances Co., Ltd., Qingdao Haier Air Conditioner Co., Ltd., Guangdong Haiwu Technology Co., Ltd. Company, Qingdao Hisense Hitachi Air Conditioning Systems Co., Ltd., TCL Air Conditioner (Zhongshan) Co., Ltd., Ningbo AUX Electric Co., Ltd., China Machinery Industry Corporation Lian Engineering Co., Ltd., Danfoss (China) Investment Co., Ltd., Shuangliang Energy Saving Systems Co., Ltd., Guangdong Jirong Air Conditioning Co., Ltd. Zhejiang Dun'an Artificial Environment Co., Ltd., Ningbo Baosheng Energy Equipment Co., Ltd., Suzhou Heidun Environment Co., Ltd., Changzhou Tianmu Intelligent Technology Co., Ltd., State Grid Zhejiang Integrated Energy Service Co., Ltd., China National Machinery Industry Corporation (SINOMACH) General Machinery Technology Co., Ltd., Zhejiang University

Weisheng Automotive Technology (Ningbo) Co., Ltd., Dongguan Sixiang Insulation Materials Co., Ltd., South China University of Technology, Hefei Zero Entropy Technology Co., Ltd. Bogesi (Changzhou) Air Conditioning Systems Co., Ltd., Anhui Zhongke Zhonghuan Intelligent Equipment Co., Ltd., and Guangdong Shunwei Precision Plastics Co., Ltd. The company, Shenzhen Aite Network Energy Technology Co., Ltd., Weishan Technology (Shenzhen) Co., Ltd., Dongfang Electric Automatic Control Engineering Co., Ltd., Shanghai Haili Electric Co., Ltd., Nanyang Yitong Explosion-proof Electric Co., Ltd., Anhui Jiebo Hengchuang Aviation Technology Co., Ltd., Hefei General Refrigeration Equipment Co., Ltd., Zhejiang Yingji Power Technology Co., Ltd., Shenzhen Cooper Energy Co., Ltd., China Northwest Architectural Design & Research Institute Co., Ltd. The company, China Tower Corporation Limited, Guangdong University of Technology, Tianjin University, Hefei General Machinery Research Institute Co., Ltd., and China Refrigeration & Air Conditioning Co., Ltd. Industry association. The main drafters of this document are. Luo Mingwen, Yan Libo, Yu Xiaolin, Yang Shuifu, Chen Zhenguo, Wang Ruzhu, Wang Ren, Zhao Jin, Li Qing, and Yang Youjin. Shi Mengzhao, Li Malin, Zhao Bingchen, Liu Minxue, Zhang Longai, Liu Chaochao, Ni Sailong, Zhang Wenqiang, Yu Ding, Liu Hexin, Wu Weilan, Tang Xiaohui Hu Yimu, Wu Jiesheng, Shi Junru, Chen Gang, Zhang Shuibing, Li Wanyong, Zhang Xu, Zan Shichao, Zhang Xiuping, Lin Xiaojie, Dai Hongming, Wang Xiaoyong, Liu Jinping Zhang Gaowei, Wang Jun, Zhu Xingguo, Xie Feng, You Qingsheng, Fan Yizhou, Wang Jing, Zhou Yi, Wang Changhuai, Li Qijie, Bao Xianbin, Zhao Qiong, Wang Liteng, Zhong Liwei Zhao Min, Liu Guofeng, Chen Ying, Li Minxia, Zhang Yiwen, Wang Nan, Wang Rujin, Hu Yiqing, Li Ziyue, Liu Xiaohong. Energy storage thermal management electrochemical energy storage Refrigeration (heat pump) unit

1 Scope

GB/T 46443-2025 is the Chinese national standard covering the chiller that keeps a battery container within a few degrees end to end - the cooling and heating capacity across the ambient range, the temperature uniformity that decides how evenly the cells age, the redundancy, and the behaviour on a thermal event. 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 types and basic parameters, technical requirements, inspection rules, and marking and packaging of refrigeration (heat pump) units for electrochemical energy storage. The requirements for loading, transportation, and storage are described, along with the corresponding test methods. This document applies to refrigeration (heat pump) units used in conjunction with the thermal management of electrochemical energy storage batteries employing vapor compression cycles, including air conditioners. Units and chilled/hot water units. Other similar units (such as those simultaneously supplying electrochemical energy storage batteries and their associated power modules and energy conversion modules, etc.) (For units that provide thermal management) Please refer to this guide.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. 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 2894-2025 Safety Colors and Safety Signs

GB/T 3785.1 Electroacoustic sound level meters - Part

3 Radio frequency electromagnetic field radiated immunity testing

GB/T 17758 Unitary Air Conditioners

GB 17799.4-2022 General Standard for Electromagnetic Compatibility - Part

4 Emissions in Industrial Environments

GB/T 18430.1 Vapor compression cycle chilled water (heat pump) units - Part

1. Chillers (heat pumps) for industrial or commercial and similar applications Pump unit

GB 25130-2010 Safety Requirements for Unitary Air Conditioners

GB/T 26572 Limits for Restricted Substances in Electrical and Electronic Products

GB/T 29044 Water quality for heating and air conditioning systems

GB/T 30790.6-2014 Corrosion Protection of Steel Structures by Paint and Varnish Protective Coating Systems - Part

6 Laboratory Testing Test methods

GB/T 36547-2024 Technical Specifications for Grid Connection of Electrochemical Energy Storage Power Stations

JB/T 4330-1999 Determination of noise from refrigeration and air conditioning equipment