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Performance evaluation of synergistic carbon reduction - Urban wastewater treatment

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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 Technical Committee on Water Conservation Standardization (SAC/TC 442). This document was drafted by: China Academy of Urban Planning and Design, Renmin University of China, China National Institute of Standardization, Tongji University, and China National Space Administration. International Engineering Consulting Co., Ltd., Tsinghua University, Beijing Capital Ecological Environmental Protection Group Co., Ltd., and Beijing Enterprises Water Group (China) Investment Co., Ltd. Company, Beijing Urban Drainage Group Co., Ltd., Yangtze River Ecological and Environmental Protection Group Co., Ltd., Jiangnan University, Changzhou Drainage Management Office, Wuhan Chongqing University of Science and Technology, Chongqing University, Beijing Municipal Engineering Design & Research Institute Co., Ltd., China Municipal Engineering North China Design & Research Institute Co., Ltd. Company, Shanghai Municipal Engineering Design & Research Institute (Group) Co., Ltd., China Municipal Engineering South-Central Design & Research Institute Co., Ltd., China Environment Scientific Research Institute, Shanghai Chengtou Wastewater Treatment Co., Ltd., Zhongyuan Environmental Protection Co., Ltd., Environmental Planning Institute of the Ministry of Ecology and Environment, Chengdu Municipal Drainage Bureau Water Limited Liability Company, Gezhouba Group Ecological and Environmental Protection Co., Ltd., Nanjing Jiangning Water Group Co., Ltd., Qingdao Water Group Environmental Energy Limited Liability Company, Xiamen Municipal Environmental Technology Co., Ltd., China Construction Ecological Environment Group Co., Ltd., and China Railway Environmental Technology Engineering Co., Ltd. This document was drafted by: Gong Daoxiao, Wang Hongchen, Tao Xiangwan, Dai Xiaohu, Huang Xia, Mo Li, Zhang Yubo, Zhang Yun, Zhang Jianxin, Wang Dianchang, and Li Ji. Liu Weiyan, Xu Yijian, Chai Liwei, Wang Guanghui, Qiu Yong, Chen Yi, Bai Yan, Yao Yue, Lu Zhen, Wang Jiawei, Sun

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1 Scope

GB/T 46725-2025 is the Chinese national standard covering judging a treatment works on carbon as well as on effluent - the electricity and chemicals consumed, the methane and nitrous oxide released by the process itself, the biogas and the reclaimed water recovered, and the score that combines pollutant removal with the carbon it cost. Nitrous oxide from nitrification is a large and usually uncounted part of a plant's footprint. First edition, in force from 1 February 2026. Issued on 31 October 2025, it has been in force since 1 February 2026.

This document specifies the basic requirements, evaluation indicators, evaluation methods, grading, and evaluation criteria for the performance evaluation of coordinated carbon reduction in urban wastewater treatment. Cycle and procedure. This document applies to the performance evaluation of synergistic carbon reduction during the operation of urban wastewater treatment plants with a design capacity of not less than 10,000 m3/d. Other urban wastewater treatment plants should follow this procedure.

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 12348 Emission Standard for Environmental Noise at the Boundary of Industrial Enterprises

GB 18918 Discharge Standard of Pollutants for Municipal Wastewater Treatment Plants

GB 50318 Code for Planning of Urban Drainage Engineering

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Synergistic carbon reduction On the basis of meeting the requirements of pollutant emission (control) standards, technologies and management such as energy conservation and consumption reduction, energy optimization, and resource recycling are adopted. Measures to comprehensively reduce the carbon emission intensity during the operation of urban wastewater treatment plants.

4 Basic Requirements

4.1 The discharge of water pollutants and air pollutants and the control of sludge from urban wastewater treatment plants shall meet the requirements of GB 18918 and relevant local pollutant discharge standards. According to emission (control) standards, the noise control of sewage treatment plants shall meet the requirements of relevant standards such as GB 12348.

4.2 No major quality, safety and environmental accidents have occurred at the urban wastewater treatment plant in the past three years.

4.3 The urban wastewater treatment plant has been operating continuously and stably for more than one year.

5 Evaluation Indicators

5.1 The performance evaluation indicators for coordinated carbon reduction in urban wastewater treatment consist of mandatory indicators and optional indicators.

5.2 The mandatory indicators include five primary indicators. pollution control, energy conservation and consumption reduction, energy optimization, resource recycling, and management coordination. Each primary indicator is determined by... It consists of 3 to 5 secondary indicators, and the names and weights of the relevant indicators should conform to the provisions of Table 1.

5.3 Optional indicators are innovative and distinctive practices, including the following 5 categories. --Application of new wastewater treatment technologies, green agents, and other new products; --Implement energy performance contracting or green certificate trading;