ICS 27.010
CCS F 29

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 46873-2025

Method for the suitability assessment of CO2 storage sites in offshore saline aquifers

海上咸水层二氧化碳封存场地适宜性评价方法

Issued on: December 31, 2025 **Implemented on: July 1, 2026**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

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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 and is under the jurisdiction of the National Technical Committee on Standardization of Environmental Management (SAC/TC207). This document was drafted by: CNOOC Research Institute Co., Ltd., China National Institute of Standardization, and China Agenda

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Luli, Chen Jianwen, and Rui Zhenhua. Zhang Xian, Zhang Jiutian, Li Qi, Lu Jianrong, Sun Lili, Guo Kai, Shi Guangyu, Wang Zhao, Zhu Hetian, Wei Ning, Wang Jianqiang, Hu Ting, Peng Bo, Zhang Peng, Hu Peng Chang Le, Ji Zemin, Wang Rui, Li Jianghui, Zeng Qingbo, Li Zhun, Bai Yuhu, Feng Ruyong, Li Baozhen, Dai Jianwen, Feng Shasha, Li Gong, Liu Chuangxin Sheng Zhichao, Li Mingjun, Xiong Runfu, Yang Lei, Yu Yanbing, Zhang Haifeng, Li Pengchun, Diao Yujie, Li Lei, Li Yixi, Shang Huining, Zhang Jiahang. Suitability of offshore saline aquifer carbon dioxide sequestration sites Evaluation methods

1 Scope

GB/T 46873-2025 is the Chinese national standard covering whether a site is suitable at all - the reservoir and its caprock integrity, the faults and the wells already drilled through it, the seismicity, the marine environment above and the monitoring that will be possible once injection starts. First edition, the companion of GB/T 46874-2025 on capacity. It was issued on 31 December 2025 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document describes the purpose, process, content, indicators, and methods for evaluating the suitability of offshore saline aquifer carbon dioxide sequestration sites. This document applies to the suitability assessment and site selection assessment of carbon dioxide sequestration sites in offshore saline water layers.

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. SY/T 6285 Evaluation Methods for Oil and Gas Reservoirs SY/T 6942 Evaluation Methods for Oil and Gas Caprock

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 offshore storage site Located in the sea area, it has underground porous spaces or geological structures that can store carbon dioxide for a long time.

3.2 Storage safety The ability to stably store carbon dioxide within geological formations without leakage.

3.3 Sealing property The ability of caprocks, faults, and other geological features to prevent carbon dioxide from migrating or leaking into non-target areas.

4 Evaluation Purpose and Process

4.1 Evaluation Principles The suitability assessment of offshore saline aquifer carbon dioxide sequestration sites should follow these principles.

a) Prioritize ensuring the security of the sealed-off area, followed by economic considerations;

b) The site is feasible for the project;

c) Complies with relevant laws, policies, and environmental protection requirements.

4.2 Evaluation Objectives In the early planning stage of the carbon dioxide sequestration project, the suitability of offshore storage sites for carbon dioxide sequestration is evaluated to inform subsequent target selection and determination.