

ICS 07.060
CCS D 10



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

GB/T 46559-2025

**Index system for the site assessment of geological carbon
dioxide storage**

二氧化碳地质封存场地评价指标体系

Issued on: December 2, 2025

Implemented on: July 1, 2026

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

Table of Contents

1 Scope	
2 Normative references	
3 Terms and Definitions	
4 General Principles	
5 Evaluation Index System	
7 Evaluation Methods	
15 Reference	17
Appendix A (Informative) Explanation and Basis for Feasibility Stage Indicators	

1 Scope

GB/T 46559-2025 is the Chinese national standard covering scoring a candidate storage site - the reservoir and seal, the capacity and injectivity, the seismic risk, the existing wells, the surface constraints and the monitoring feasibility, combined into a comparable index. First edition, under the Ministry of Natural Resources, with the offshore storage standards published this year. It was issued on 2 December 2025 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the Ministry of Natural Resources. 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 establishes an evaluation index system for carbon dioxide (CO₂) geological storage sites, specifies data requirements, and describes the corresponding evaluation criteria. method. This document applies to carbon dioxide geological storage sites in onshore and nearshore areas with deep saline aquifers and depleted oil and gas reservoirs as reservoirs. Selection of evaluation indicators.

2 Normative references

This document has no normative references.

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Through engineering techniques, captured carbon dioxide is directly injected into deep underground saline aquifers, depleted oil and gas reservoirs, and other formations to

achieve carbon dioxide reduction. The process by which carbon dioxide is isolated from the atmosphere for a long period of time.

3.2 The physical space for implementing carbon dioxide geological sequestration (3.1).

Note. This includes the geological formation for carbon dioxide storage, the engineering facilities required for constructing the carbon dioxide storage project, and the necessary areas to provide environmental safety assurance for the project.

3.3 The target mass of carbon dioxide that needs to be injected within a certain period.

Note. Includes total injection volume and injection volume per unit time, and annual carbon dioxide leakage from the storage site during the injection period and for 10,000 years after project closure. The amount shall not exceed 0.001% of the injected amount.

3.4 reservoir A rock stratum with numerous interconnected voids, allowing fluids to enter and flow.

3.5 caprock The gas reservoir is covered by a non-permeable or low-permeability formation that prevents reservoir fluids from migrating upwards.

Note. The caprock that is in direct contact with the reservoir is called the direct caprock, and the caprock above the direct caprock is called the indirect caprock.

3.6 bottomseal Located at the bottom of the reservoir, the rock strata have poor pore connectivity, making it difficult for fluids to enter and flow.

3.7 storage capacity The maximum mass of carbon dioxide that the reservoir (3.4) can hold without causing damage to the direct caprock.

15 Reference 17

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 Ministry of Natural Resources of the People's Republic of China. This document is under the jurisdiction of the National Technical Committee on Standardization of Natural Resources and Territorial Spatial Planning (SAC/TC93). This document was drafted by: Chinese Academy of Geological Sciences, Shaanxi Yanchang Petroleum (Group) Co., Ltd., and Beijing Jufengguang Technology Co., Ltd. Institute of Geology, Chinese Academy of Geological Sciences; Shengli Oilfield Branch of China Petroleum & Chemical Corporation; Intercontinental Strait Energy Technology Co., Ltd. The university is located in Jinan, Beijing Normal University, and Hubei University of Technology. The main drafters of this document are. He Qingcheng, Li Cai, Guo Chaobin, Wang Xiangzeng, Wang Jinsheng, Wei Dengfeng,

Liang Quansheng, Liu Ying, Yang Hong, and Qu Junfeng. Yang Lichao, Wang Jing, Yang Yong, Lü Guangzhong, Cao Xiaopeng, Li Bingnan, Xu Junxiang, Hu Litang, Zuo Rui, Li Yi, Fang Hao.

Carbon dioxide geological sequestration is an important measure to effectively reduce carbon dioxide emissions into the atmosphere. Site evaluation for carbon dioxide geological sequestration is... This is fundamental work to ensure the safety of carbon dioxide geological storage. Currently, the main geological bodies widely recognized for use in carbon dioxide geological storage include... Category 3. saline aquifers, depleted oil and gas reservoirs, and unminable coal seams. Among them, the depleted oil and gas reservoirs and saline aquifers have undergone decades of geological sequestration of carbon dioxide. Through practical experience, rich experience has been accumulated in the evaluation elements and indicators of carbon dioxide geological storage sites. In order to conduct scientific and standardized evaluations of carbon dioxide geological storage sites, Promote the popularization and development of related technologies, facilitate the rational site selection for carbon dioxide geological storage, ensure storage safety, and promote green, low-carbon, and sustainable development. This document is specifically formulated for this exhibition. Evaluation index system for carbon dioxide geological storage sites

Appendix A (Informative) Explanation and Basis for Feasibility Stage Indicators

8 Appendix B (Informative) Explanation of Indicators and Grading Basis for Preliminary Exploration Stage

11 Appendix C (Informative) Detailed Exploration Stage Indicator Explanation and Evaluation Reference Basis