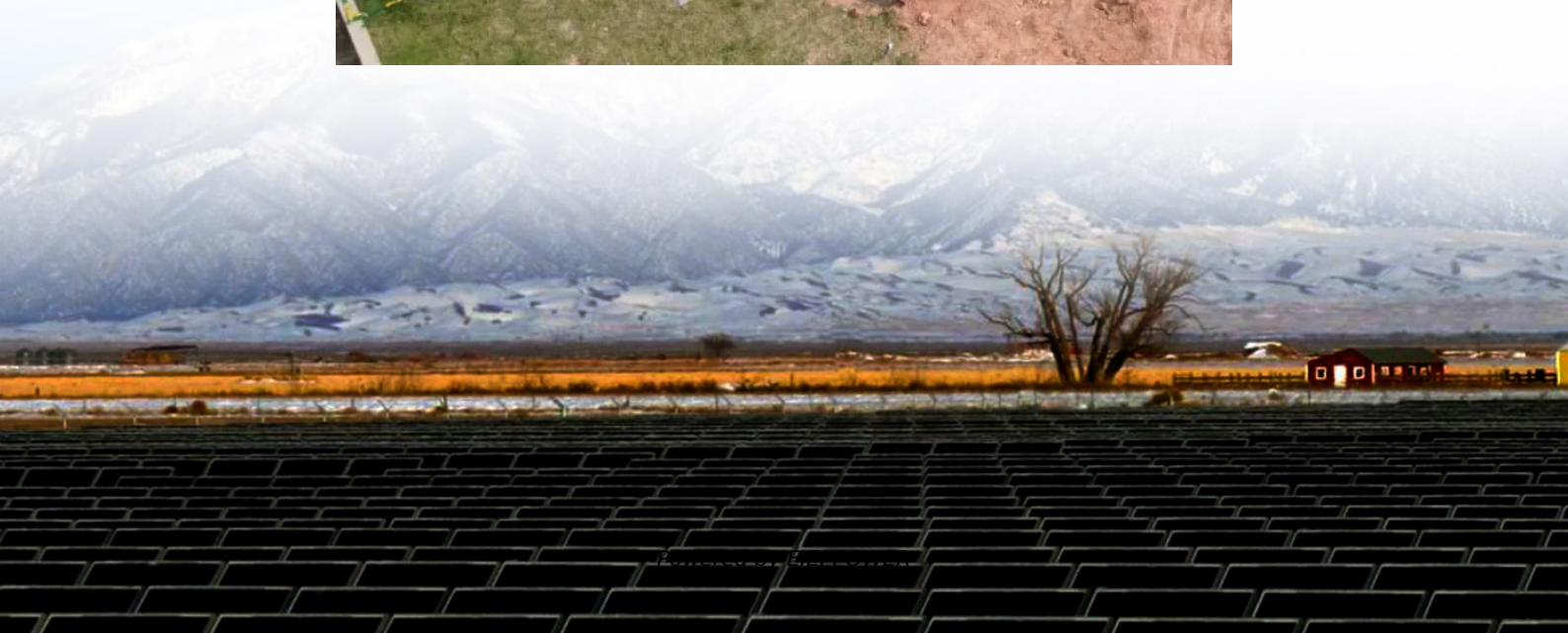


# **Coal mine compressed air energy storage power station**





## Overview

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Can compressed air energy storage chambers be renovated in abandoned coal mines?

This study focuses on the renovation and construction of compressed air energy storage chambers within abandoned coal mine roadways. The transient mechanical responses of underground gas storage chambers under a cycle are analyzed through thermal-solid coupling simulations.

Can abandoned coal mines be used for gas storage?

Regarding the practice of using abandoned coal mines for gas storage, in 2019, the Yungang coal mine in Shanxi Province started constructing the first compressed air energy storage power station in China by using abandoned coal mine chambers. The geological structure of the coal mine is stable, and the total length of the roadway is about 9000 m.

What is a compressed air energy storage station?

"The compressed-air energy storage station offers large capacity, long storage time (over 4 hours), and efficient response, making it comparable to small and medium-sized pumped storage power plants," Liu Yong, Secretary General of Energy Storage Application Branch of China Industrial Association of Power Sources told the Global Times on Wednesday.

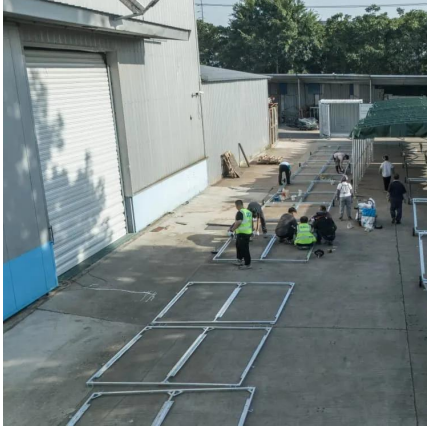
What are the underground spaces of abandoned coal mines?

The underground spaces of abandoned coal mines usually include mining chambers, coal seams, mine shafts, and other structures, which provide natural storage space for gas storage .



## Coal mine compressed air energy storage power station

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### [Design of a New Compressed Air Energy Storage System ...](#)

Aug 30, 2023 · Design of a New Compressed Air Energy Storage System with Constant Gas Pressure and Temperature for Application in Coal Mine Roadways Kangyu Deng 1, Kai Zhang ...

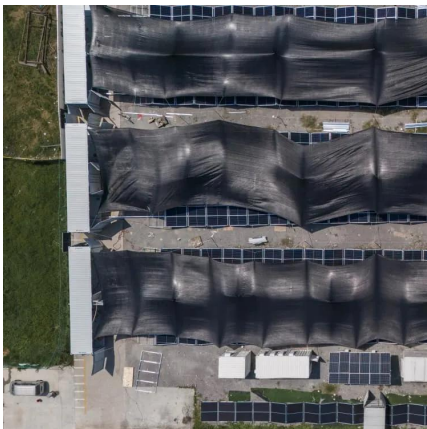
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Dec 18, 2024 · The world's largest compressed-air energy storage power station, the second phase of the Jintan Salt Cavern Compressed Air Energy Storage Project, officially broke ...



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### **China's Coal Mines Reborn: The Rise of Energy Storage Power Stations**

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powers ...



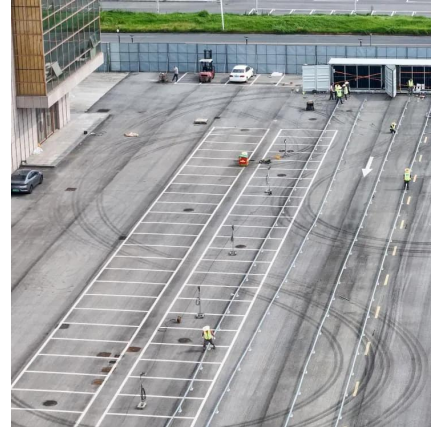
### Novel concept and stability analysis of pipe layout type abandoned mine

The utilization of abandoned mines to build compressed air energy storage (CAES) power stations can fully utilize land and space resources and reduce excavation costs. It possesses ...



### Research status and new design concept of compressed air energy storage

Compressed air energy storage (CAES) can be widely used in power grid peak load shifting and large-scale new energy consumption. It has the advantages of large installed capacity, ...



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## [World's Largest Compressed Air Energy](#)

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## **A Study on the Transient Response of Compressed Air Energy Storage**

...

Feb 19, 2024 · This study focuses on the renovation and construction of compressed air energy storage chambers within abandoned coal mine roadways. The transient mechanical responses ...



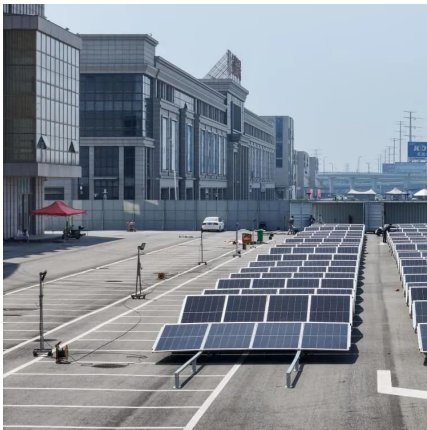
## **Exploring compressed air energy storage in abandoned flooded coal mine**

To address these challenges, this study focuses on the actual conditions of the Songzao coal mine in Chongqing and proposes a novel flooded coal mine compressed air energy storage ...



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## [How to use compressed air storage in flooded coal mines](#)

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