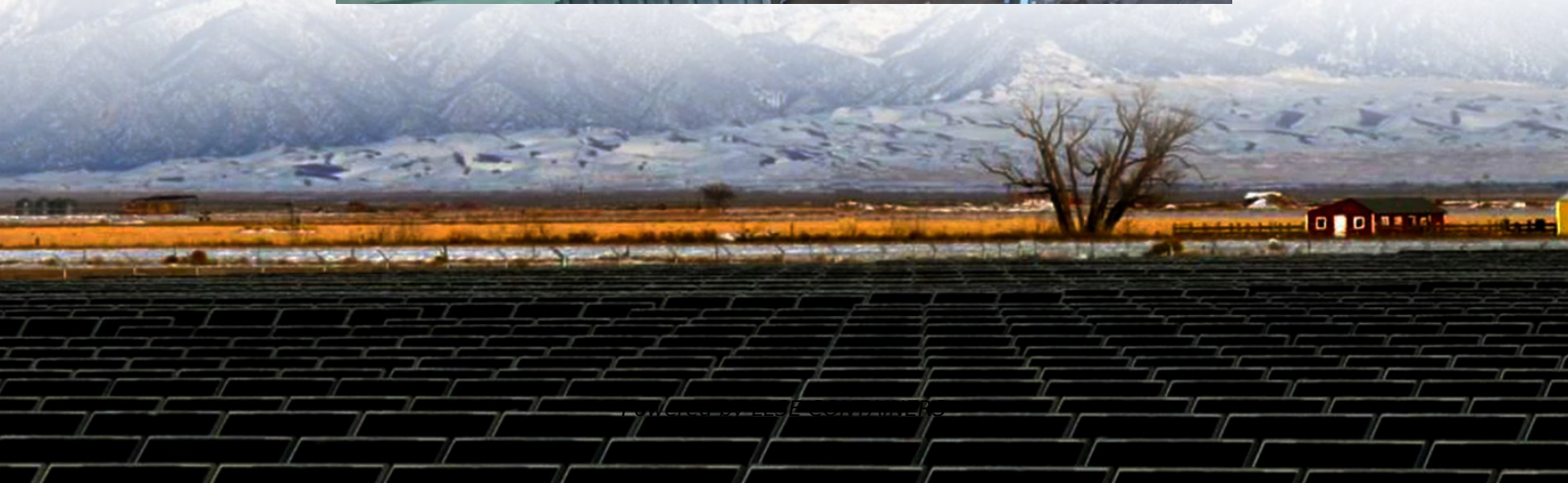


Copenhagen Compressed Air Energy Storage Power Generation





Overview

What is compressed air energy storage (CAES)?

Compressed Air Energy Storage (CAES) systems offer a promising approach to addressing the intermittency of renewable energy sources by utilising excess electrical power to compress air that is stored under high pressure. When energy demand peaks, this stored air is expanded through turbines to generate electricity.

What is an integrated energy storage system?

Zhang, Y.; Liang, T.; Yang, K. An integrated energy storage system consisting of compressed carbon dioxide energy storage and organic Rankine cycle: Exergoeconomic evaluation and multi-objective optimization. *Energy* 2022, 247, 123566. [Google Scholar] [CrossRef].

What is adsorption-based CO₂ energy storage?

Adsorption-based CO₂ energy storage leverages the temperature-dependent adsorption/desorption characteristics of zeolites and similar materials to achieve cyclic CO₂ storage/release. Operating typically within 0.1–0.2 MPa, experimental studies report a system gas storage density of 43.46 kg/m³.

Where is compressed air stored?

Storage: The compressed air is stored, typically in large underground caverns such as salt domes, abandoned mines, or depleted natural gas reservoirs. Above-ground alternatives include high-pressure tanks or specially designed vessels, though these are generally more expensive and limited in capacity.



Copenhagen Compressed Air Energy Storage Power Generation



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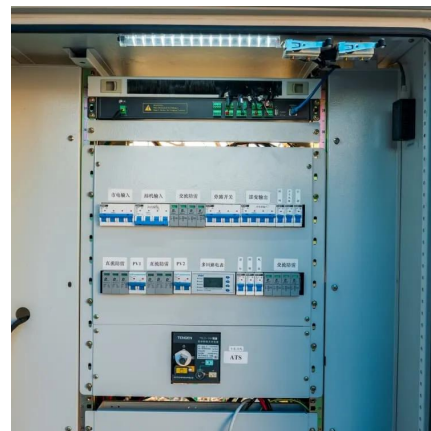
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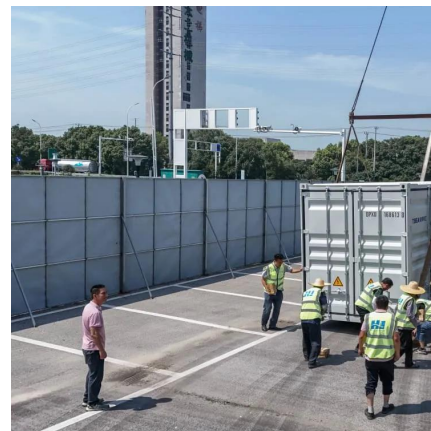
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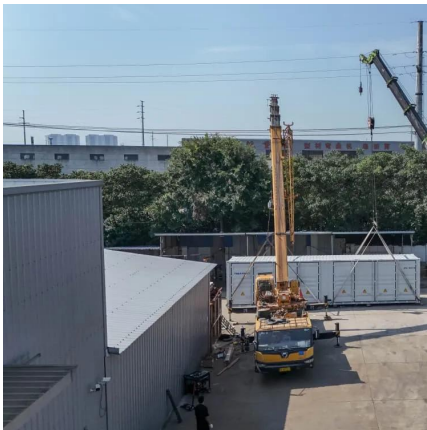
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