



BUHLE POWER

Coal Power New Energy Storage





Overview

Can coal power plants be converted into energy storage and zero-carbon data centers?

This paper investigates a retrofitting strategy that turns coal power plants into thermal energy storage (TES) and zero-carbon data centers (DCs). The proposed capacity expansion model considers the co-locations of DCs, local renewable generation, and energy storage with the system-level coal retirement and retrofitting.

How can we repurpose coal power plants into storage systems?

Pathways for repurposing coal power plants into storage systems through Carnot Batteries schemes (Chile). Feasibility study of retrofitting Coal Power Plants in Chile (Chile). Conversion of the Guacolda thermoelectric plant to green ammonia (Chile).

Why should we convert coal-fired power plants into energy storage systems?

For instance, in the United States, converting coal-fired power plants into energy storage systems provides economic benefits, including reduced decommissioning costs, job preservation, enhanced grid reliability, and smoother integration of renewable energy.

Can thermal energy storage improve the flexibility of coal-fired power plants?

At present, large-scale energy storage technology is not yet mature. Improving the flexibility of coal-fired power plants to suppress the instability of renewable energy generation is a feasible path. Thermal energy storage is a feasible technology to improve the flexibility of coal-fired power plants.



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[Application Analysis of Energy Storage Technology for Coal ...](#)

Conclusion Finally, according to the application characteristics of coupled energy storage technology for coal-fired cogeneration units, the paper puts forward suggestions on the aging ...

[Repurposing Coal Power Plants into Thermal Energy ...](#)

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[New Sodium-Ion Batteries Threaten The US Coal Recovery Plan](#)

Nov 15, 2025 · The promise of a coal power revival is already being undermined by new energy storage technologies, including sodium-ion batteries.

[Repurposing Coal Power Plants into Thermal Energy Storage ...](#)

Jul 25, 2024 · Coal power plants will need to be phased out and face stranded asset risks under the net-zero energy system transition. Repurposing coal power plants could recoup profits and ...



[China Launches First 600MW Coal-fired Molten Salt Energy Storage ...](#)

Apr 22, 2025 · This pioneering project demonstrates the viability of integrating molten salt storage with coal-fired power generation at scale, providing critical technical support for building a ...

[China Brings Largest Coal Power + Molten Salt Storage ...](#)

Sep 1, 2025 · This enables time-shifted storage and release of 1,000 MWh of thermal energy. The team also developed an innovative coal-power-coupled steam-heated molten salt thermal

...



[Assessment of flexible coal power and battery energy storage ...](#)

Dec 30, 2024 · The use of renewable energy sources (RES) is expected to increase, potentially leading to volatility in the power system. Therefore, flexible power is essential to address this ...



Recent Progress on Thermal Energy Storage ...

Oct 23, 2024 · At present, large-scale energy storage technology is not yet mature. Improving the flexibility of coal-fired power plants to suppress the ...



Recent Progress on Thermal Energy Storage for Coal-Fired Power ...

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Conversion of Coal-Fired Power Plants Using Energy ...

Mar 27, 2025 · Key discussions at the seminar focused on four main areas: (1) lessons learned from retrofitting coal-fired power plants with energy storage systems; (2) policy and regulatory ...



Development Trends and Challenges of Energy Storage ...

Jan 18, 2024 · Abstract: With the rapid development of new energy sources such as wind and solar power, the global energy structure is undergoing profound changes. The increasing ...



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