

Title: Jingyu Power Plant Energy Storage Frequency Regulation System

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What is frequency regulation power optimization?

The frequency regulation power optimization framework for multiple resources is proposed. The cost, revenue, and performance indicators of hybrid energy storage during the regulation process are analyzed. The comprehensive efficiency evaluation system of energy storage by evaluating and weighing methods is established.

Can large-scale battery energy storage systems participate in system frequency regulation?

In the end, a control framework for large-scale battery energy storage systems jointly with thermal power units to participate in system frequency regulation is constructed, and the proposed frequency regulation strategy is studied and analyzed in the EPRI-36 node model.

Do energy storage systems participate in frequency regulation?

Current research on energy storage control strategies primarily focuses on whether energy storage systems participate in frequency regulation independently or in coordination with wind farms and photovoltaic power plants .

Do energy storage stations improve frequency stability?

With the rapid expansion of new energy, there is an urgent need to enhance the frequency stability of the power system. The energy storage (ES) stations make it possible effectively. However, the frequency regulation (FR) demand distribution ignores the influence caused by various resources with different characteristics in traditional strategies.

On March 14, 2025, the energy sector received a jolt when a lithium-ion battery storage system at Jingyu Power Plant ignited, causing China's first major energy storage explosion of the decade. This ...

In response to the above issues, this article proposes a frequency control strategy for battery energy storage systems to support power systems.

In this paper, the load frequency control problem of multi-area interconnected power systems containing PV and energy storage system is considered. First, based on the traditional...

As renewable energy penetration increases, maintaining grid frequency stability becomes more challenging due to reduced system inertia. This paper proposes an analytical control strategy ...

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A regional grid with a TPU and a hybrid ES station is used to validate the effectiveness of the proposed strategy. The results show that the FR resources are stimulated to improve their ...

This paper studies the frequency regulation strategy of large-scale battery energy storage in the power grid system from the perspectives of battery energy storage, battery energy storage ...

Among various grid services, frequency regulation particularly benefits from ESSs due to their rapid response and control capability. This review provides a structured analysis of four ...

This paper introduces in detail the configuration scheme and control system design of energy storage auxiliary frequency regulation system in a thermal power plant.

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