

The utilization rate of new energy power generation and energy storage is low

How much storage capacity should a new energy project have?

For instance, in Guangdong Province, new energy projects must configure energy storage with a capacity of at least 10% of the installed capacity, with a storage duration of 1 h. However, the selection of the appropriate storage capacity and commercial model is closely tied to the actual benefits of renewable energy power plants.

What is the allowable output fluctuation range after adding energy storage?

The allowable output fluctuation range respectively are 3% and 5%, and the allowable fluctuation range after adding energy storage expands to 5% to 30%.

Why is energy storage configuration important?

In the context of increasing renewable energy penetration, energy storage configuration plays a critical role in mitigating output volatility, enhancing absorption rates, and ensuring the stable operation of power systems.

Does a shared model improve the utilization efficiency of energy storage?

However, due to the absence of supporting policies for this function, the current utilization efficiency of energy storage is low. The shared model proposed in this paper can significantly improve the utilization efficiency and economic benefits of energy storage.

Why is a reasonable allocation of energy storage important?

A reasonable allocation of energy storage ensures the safety support of thermal power for system operation and reduces the operational hours of thermal power units. This mechanism contributes to solving the issue of large-scale renewable energy curtailment.

Which energy storage mode provides the highest overall benefit?

Simulation results validate the effectiveness of the proposed method and compare the benefits of the three modes, showing that the leased mode provides the highest overall benefit. This study provides a quantitative reference for the rational selection of energy storage modes in renewable energy projects.

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