

How to efficiently use energy storage resources while meeting primary frequency modulation requirements?

In order to efficiently use energy storage resources while meeting the power grid primary frequency modulation requirements, an adaptive droop coefficient and SOC balance-based primary frequency modulation control strategy for energy storage is proposed.

What is energy storage primary frequency modulation integrated droop control?

Specifically, combining the performance advantages of virtual inertia control and droop control, an energy storage primary frequency modulation integrated droop control strategy based on inertia response is constructed.

What is dynamic frequency modulation model?

The dynamic frequency modulation model of the whole regional power grid is composed of thermal power units, energy storage systems, nonlinear frequency difference signal decomposition, fire-storage cooperative fuzzy control power distribution, energy storage system output control and other components.

Can thermal power units be combined in primary frequency modulation?

The combination of the two in primary frequency modulation of thermal power units can complement each other's advantages and effectively improve the effect of units in primary frequency modulation. Table 1. Characteristic parameters of the energy storage system.

Does frequency modulation affect SoC feedback of energy storage battery?

In order to ensure the effect of frequency modulation while ensuring the state of energy storage SOC and maintaining the long-term stable output of energy storage, an adaptive primary frequency modulation control strategy considering SOC feedback of energy storage battery is proposed in this paper.

Does primary frequency modulation affect SoC maintenance?

The balanced control strategy is introduced to realize the rational utilization of resources and the fast balance of SOC in the process of primary frequency modulation of energy storage battery under different charge states. Then, four evaluation indexes are proposed to evaluate the effect of primary frequency modulation and SOC maintenance.

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Web: <https://www.publishers-right.eu/contact-us/>

Email: energystorage2000@gmail.com

WhatsApp: 8613816583346

