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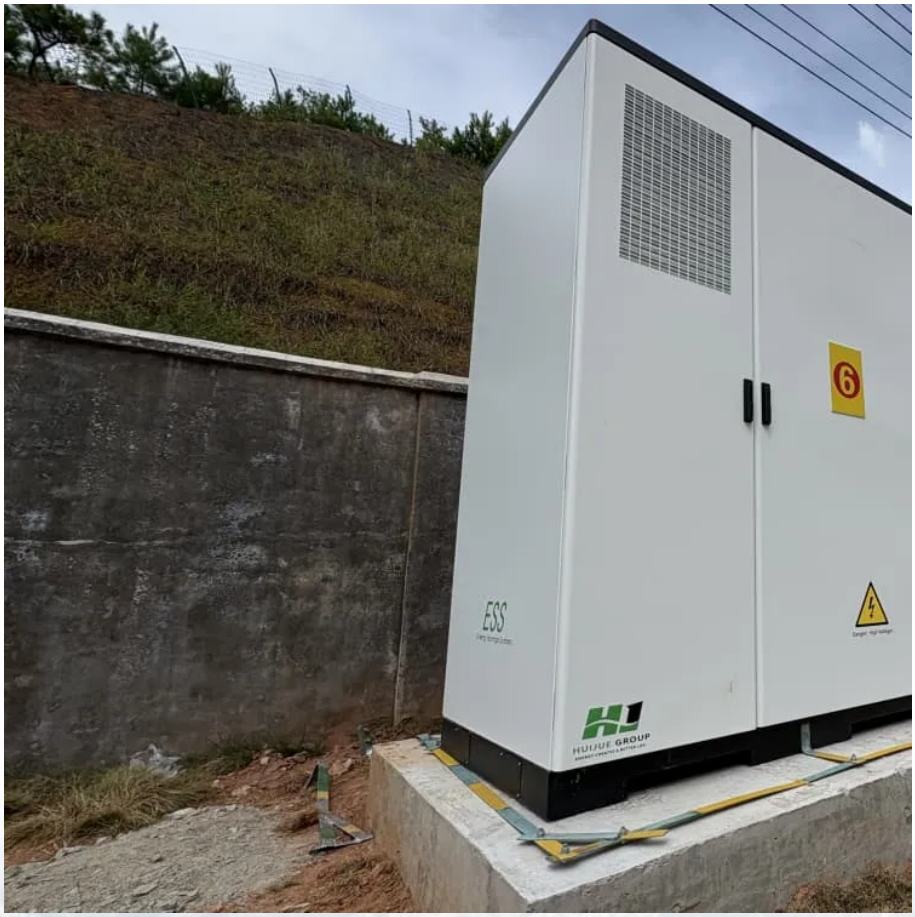
Source-load solar container energy storage system frequency regulation



Overview

How is the energy storage capacity configured based on frequency regulation demand?

In Section 3, the energy storage capacity is configured based on the system frequency regulation demand, and a wind-storage coordinated frequency regulation control strategy is proposed, which makes reasonable use of the frequency support potential of wind power and energy storage and ensures the dynamic stability of the system frequency.

Should energy storage participate in primary frequency regulation?

It is necessary to configure energy storage to participate in primary frequency regulation when the wind power penetration rate is high. Secondly, the allocation of energy storage capacity needs to meet the requirements of grid-connected wind power system standards.

What is the primary frequency regulation coefficient of energy storage?

Since the frequency deviation of the system should not exceed 0.5 Hz according to standards, the primary frequency regulation coefficient of energy storage, Kb can be in the range of 0 and 100. To maximize the power support from the energy storage when the power disturbance is large, the energy storage is supported by rated power, i.e., Kb = 100.

Can wind power and energy storage participate in frequency regulation?

Currently, research on the control of wind power and energy storage to participate in frequency regulation and configuration of the energy storage capacity is at its nascent stage. Similar to wind generators, energy storage can be involved in system frequency regulation through additional differential-droop control.

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