

## **PDEOZE PowerContainer**

# **Wind regulation ratio of energy storage power station**



## Overview

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Integrating wind power with energy storage technologies is crucial for frequency regulation in modern power systems, ensuring the reliable and cost-effective operation of power systems while promoting the widespread adoption of renewable energy sources.

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In order to address the challenges posed by the inherent intermittency and volatility of wind power generation to the power grid, and with the goal of enhancing.

Firstly, the model of grid-connected VSPS-wind-solar HPS is established. Secondly, based on a calculating example, the transient characteristics of grid-connected VSPS-wind-solar HPS are analyzed by using numerical simulation.

In this paper, the optimal capacity of the wind-storage combined frequency regulation system is studied from the perspective of SFD. The time-domain expressions of two-stage system frequency response considering SFD are derived based on the wind-storage combined frequency regulation model.

In this study, a method for optimizing the frequency regulation reserve of wind PV storage power stations was developed. Moreover, a station frequency regulation model was constructed, considering the field dynamic response and the coupling between the station and system frequency dynamics.

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Energy storage can quickly compensate for wind power disturbances and has become an important equipment in regional power grids with a high proportion of new energy [6 - 8].

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