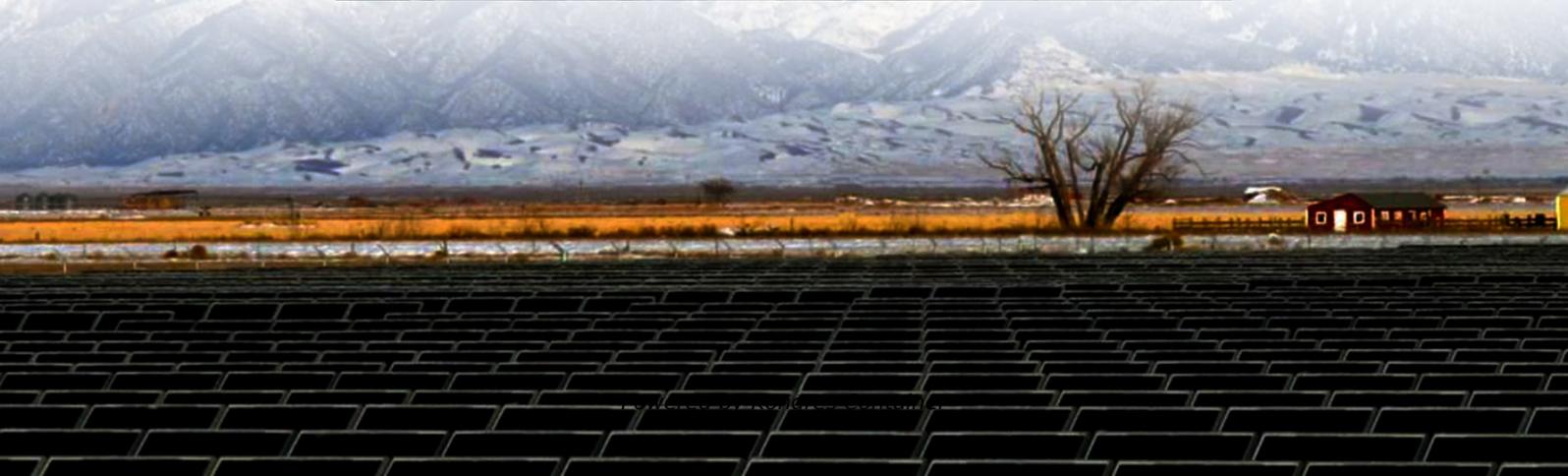


## Kongres Container

# Energy storage capacity configuration for wind power projects



## Overview

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The construction of wind-energy storage hybrid power plants is critical to improving the efficiency of wind energy utilization and reducing the burden of wind power uncertainty on the electric power sys.

How can energy storage improve wind energy utilization?

Simultaneously, wind farms equipped with energy storage systems can improve the wind energy utilization even further by reducing rotary back-up . The combined operation of energy storage and wind power plays an important role in the power system's dispatching operation and wind power consumption .

How to optimize energy storage capacity in wind-solar-storage power station?

Based on the actual data of wind-solar-storage power station, the energy storage capacity optimization configuration is simulated by using the above maximum net income model, and the optimal planning value of energy storage capacity is obtained, and the sensitivity analysis of scheduling deviation assessment cost is carried out.

What is a wind-energy storage hybrid power plant?

As a result, a wind-energy storage hybrid power plant, as a kind of combined power generation system, has received a lot of attention. Many Chinese provinces have issued corresponding policies to encourage or require the construction of a certain proportion of energy storage facilities in new wind farms.

Can a hybrid energy storage joint optimization model reduce wind power fluctuations?

Therefore, this paper proposes a hybrid energy storage joint optimization configuration model that considers the frequency regulation requirements of wind farms while mitigating wind power fluctuations. The effectiveness of the model is validated using annual data from a wind farm in the northwest region as an example.

What is a hybrid energy storage capacity allocation model?

A hybrid energy storage capacity allocation model based on the AO-VMD signal decomposition method is proposed, which gradually decomposes the original wind power signal to obtain the grid-connected reference power and smooth power curve.

How to manage energy storage capacity?

Managing energy storage capacity involves solving an optimization problem to determine the best estimate of the objective function under specific constraints, aiming for optimal capacity outcomes. Currently, there are numerous studies addressing the optimization of energy storage capacity allocation.

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