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Wind-solar-storage system power ratio

Overview

What is the maximum wind and solar installed capacity?

The results indicate that a wind-solar ratio of around 1.25:1, with wind power installed capacity of 2350 MW and photovoltaic installed capacity of 1898 MW, results in maximum wind and solar installed capacity. Furthermore, installed capacity increases with increasing wind and solar curtailment rates and loss-of-load probabilities.

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.

How to optimize wind and solar energy integration?

The optimization uses a particle swarm algorithm to obtain wind and solar energy integration's optimal ratio and capacity configuration. The results indicate that a wind-solar ratio of around 1.25:1, with wind power installed capacity of 2350 MW and photovoltaic installed capacity of 1898 MW, results in maximum wind and solar installed capacity.

What is a good wind-solar ratio?

The results show that when the wind-solar ratio is 1.25:1, the overall system performance is optimal. At this ratio, the maximum wind-solar integration capacity reaches 3938.63 MW, with a curtailment rate of wind and solar power kept below 3 % and a loss of load probability maintained at 0 %.

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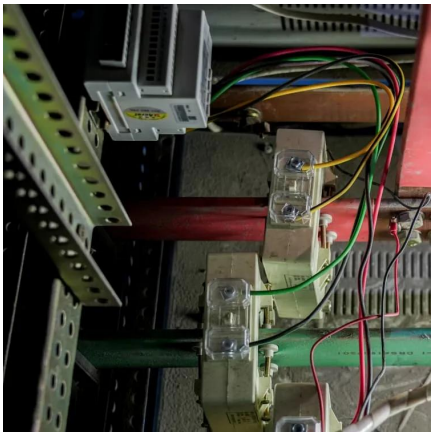

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