



GermanSolarZA

How much is the wind and solar power diesel storage per kilowatt





Overview

How much does an energy storage plant cost?

The energy storage plant cost is set as 150, 225, 300, 375 and 450\$/kWh respectively. The energy storage plant's optimum capacity of for a wind generation is calculated considering energy arbitrage, so is the annual benefit of wind-storage coupled system with the optimal capacity.

How does energy storage work in a wind farm?

After energy storage is integrated into the wind farm, one part of the wind power generation is sold to the grid directly, and the other part is purchased and stored with a low price, and then is sold with a high price through the energy storage system.

How much money does a simulated wind-storage system make?

When the energy storage system lifetime is of 10 years, and the cost is equal to or more than 375 \$/kWh, the optimization configuration capacity is 0 MWh, which means no energy storage installation. The annual revenue of the simulated wind-storage system is 12.78 million dollars, which is purely from the sale of wind generation.

What is the optimal energy storage capacity?

The optimal energy storage capacity and the corresponding annual revenue of wind-storage system increase when increasing the charging and discharging efficiencies and decreasing the energy storage system cost. The optimal storage capacity is 38MWh when the charging and discharging efficiencies are 95%, the energy storage cost is 150 \$/kWh.



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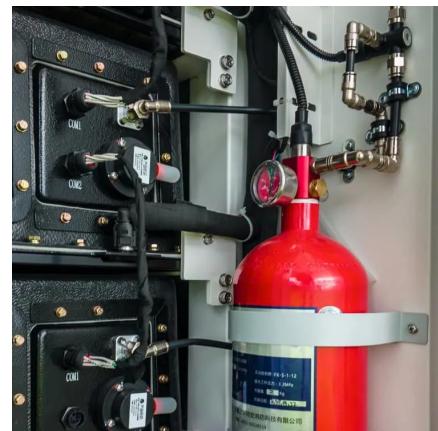
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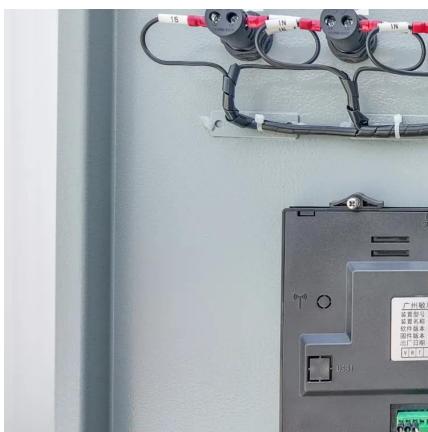
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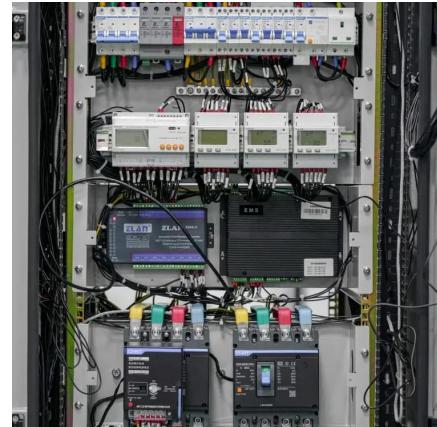
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