

# Wind power station energy storage construction costs



## Overview

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What is the revenue of wind-storage system?

The revenue of wind-storage system is composed of wind generation revenue, energy storage income and its cost. With the TOU price, the revenue of the wind-storage system is determined by the total generated electricity and energy storage performance.

How much does a wind-storage system cost?

The optimal storage capacity is 38MWh when the charging and discharging efficiencies are 95%, the energy storage cost is 150 \$/kWh. The total annual income is calculated as 13.23 million US dollars from the wind-storage coupled 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.

Can integrated energy storage system generate more revenue than wind-only generation?

The integrated system can produce additional revenue compared with wind-only generation. The challenge is how much the optimal capacity of energy storage system should be installed for a renewable generation. Electricity price arbitrage was considered as an effective way to generate benefits when connecting to wind generation and grid.

Can energy storage improve solar and wind power?

With the falling costs of solar PV and wind power technologies, the focus is increasingly moving to the next stage of the energy transition and an energy

systems approach, where energy storage can help integrate higher shares of solar and wind power.

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.

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