

Full cycle cost of carbon-lead energy storage





Overview

What is a life cycle cost?

The life cycle cost (LCC) refers to the ratio of the total cost of the energy storage system to the cumulative transmission power throughout the life cycle, and measures the economy of the unit discharge power. The calculation process of the life cycle cost of electricity is shown in Figure 2.

How can a life-cycle cost analysis improve energy storage decision-making?

To enable informed decision-making and support the large-scale deployment of energy storage under complex and uncertain renewable energy conditions, a more robust evaluation and selection methodology is required—one that integrates life-cycle cost analysis with multi-criteria decision-making techniques across diverse application scenarios.

Are batteries the future of energy storage?

Batteries are considered as one of the key flexibility options for future energy storage systems. However, their production is cost- and greenhouse-gas intensive and efforts are made to decrease their price and carbon footprint.

What drives life-cycle costs?

This corresponds with the findings by Hiremath et al. 9 and Battke et al., 19 who assessed the CF and LCC of different battery types in stationary applications. In line with these works, initial investment costs and battery replacement are found to be the main drivers of life-cycle costs (LCC).



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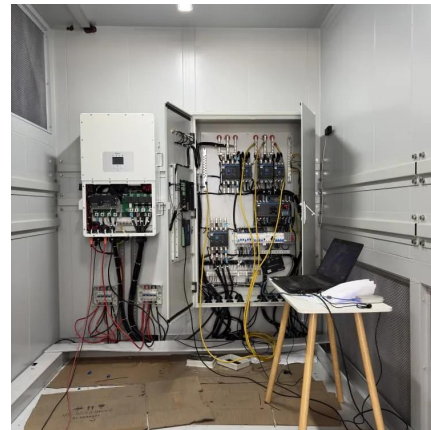
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