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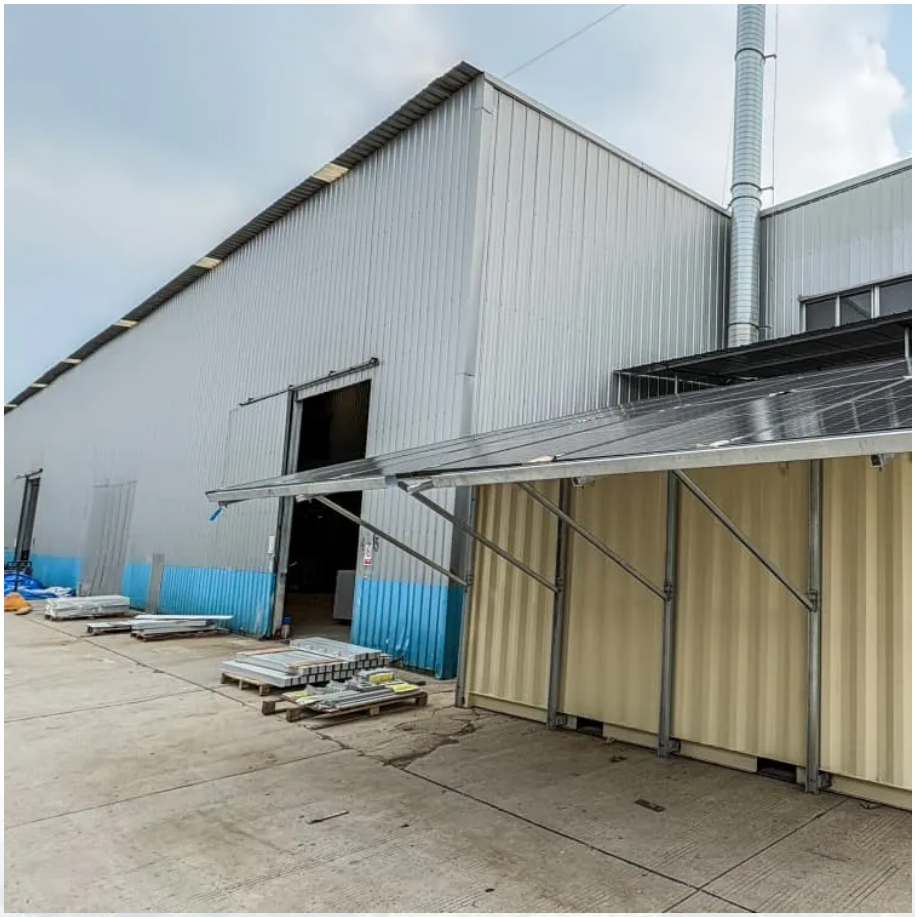
Comprehensive utilization of second-hand energy storage batteries



Overview

This paper systematically reviews the research progress in the field of power battery recycling and cascade utilization, and analyzes it from four dimensions: technical path, economic model, policy impact and environmental benefit.What is the research on power battery recycling & Cascade utilization?

At present, the research on power battery recycling and cascade utilization has formed a comprehensive research system that includes multiple dimensions such as technology, economy, policy and environment.

Can second-life batteries be used in energy storage?

Several European vehicle manufacturers, especially the leading players in the EV market, have introduced second-life battery alternatives in a variety of energy storage applications, from small-scale home energy storage to containerized SLB solutions in distributed energy systems .

Can secondary battery supply cover the demand for EVs?

Using MFA, this study investigated supply potentials of secondary batteries and analyzed how secondary supply can cover the battery demand for EVs through recycling and for stationary energy storage through the second use in California throughout 2050.

Why should you reuse EV batteries after end-of-life (EOL)?

After reaching end-of-life (EoL), reusing EV batteries supports the efficient and decentralized stationary storage of electrical energy, which can be released at any time.

Why is repurposing a second-life battery important?

With the high demand for clean and affordable energy, an effective storage means is crucial. An immediate benefit of implementing repurposing initiatives for second-life batteries is a reduction in energy storage costs, and indirectly, the demand for newly manufactured storage units would decrease; thus,

making the overall use of energy cleaner.

What is a second-life battery (SLB)?

Categorization and summarization of the second-life batteries aspects. A primary advantage of SLBs is their cost-effectiveness. They present a low-cost alternative (relative to new batteries) to applications that demand lower battery usage, such as home energy storage, backup systems, and microgrids.

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