SolarInnovate Energy Solutions

How to reduce the lithium-ion battery of communication base stations

Overview

Can repurposed EV batteries be used in communication base stations?

Among the potential applications of repurposed EV LIBs, the use of these batteries in communication base stations (CBSs) isone of the most promising candidates owing to the large-scale onsite energy storage demand (Heymans et al., 2014; Sathre et al., 2015).

Should repurposed lithium batteries be used as a lab system?

From the resource point of view, the MDP of repurposed LIBs isnot always preferable to that of the conventional LAB system. Recently, the environmental and social impacts of battery metals such as nickel, lithium and cobalt, have drawn much attention due to the ever-increasing demand (Ziemann et al., 2019; Watari et al., 2020).

What happens if repurposed lithium ion batteries are widely promoted?

On the other hand, if the secondary use of repurposed LIBs is widely promoted,a delay in metal circulation will occur; the material availability might be questionable, and more primary lithium, copper, and aluminum have to be extracted to meet the supply shortages in the manufacturing sector.

Does secondary use of lithium ion batteries reduce the MDP value?

The findings of this study indicate a potential dilemma; more raw metals are depleted during the secondary use of LIBs in CBSs than in the LAB scenario. On the one hand, the secondary use of LIBsreduces the MDP value by extending the service life of the batteries, although more metal resources are consumed during the repurposing activities.

Are lithium-ion batteries used in EV power supply systems?

Owing to the long cycle life and high energy and power density, lithium-ion batteries (LIBs) are themost widely used technology in the power supply system of EVs (Opitz et al. (2017); Alfaro-Algaba and Ramirez et al., 2020).

What is the recycling stage of a lithium ion battery?

In the recycling stage, the collectedLIB packs are dismantled to obtain the main components, such as battery cells, BMSs, and packaging, and various material fractions are recovered from these components separately (Table A1 in the supplementary materials).

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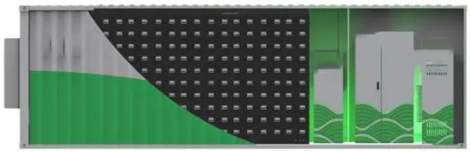

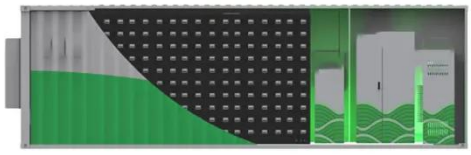

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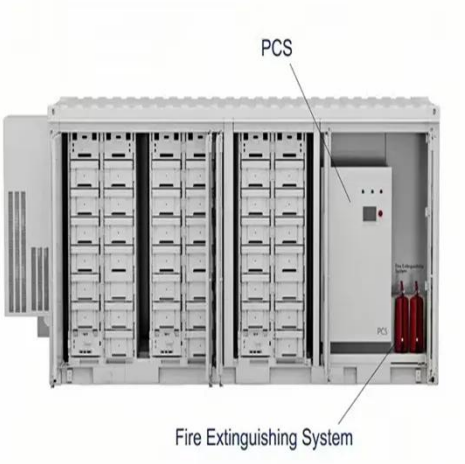

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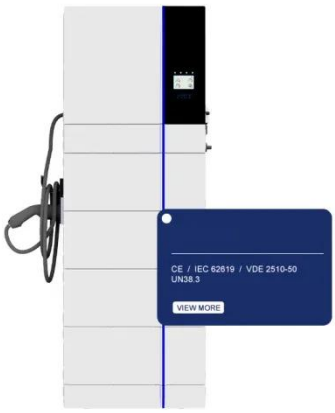

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