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Title: Environmental impact of lead-acid batteries in communication base stations

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How does lead-acid battery production affect the environment?

**Air Pollution:** The production of sulfuric acid, used in lead-acid batteries, releases sulfur dioxide (SO<sub>2</sub>) into the atmosphere. SO<sub>2</sub> is a harmful pollutant that can cause respiratory problems in humans and acid rain, which damages crops, forests, and aquatic ecosystems. 2. Manufacturing Process Energy Consumption

Is reusing waste libs a viable alternative to lead-acid batteries?

Yang et al.<sup>27</sup> used LCA to study the environmental feasibility of reusing waste LIBs in communication base stations. The results show that in all selected categories, the secondary use of EV LIBs has less environmental impact than the use of lead-acid batteries.

What are the benefits of recycling lead-acid batteries?

**Resource Recovery:** Recycling lead-acid batteries allows for the recovery of valuable materials, such as lead and plastic, reducing the need for new raw materials and the environmental impact of mining. **Pollution Prevention:** Proper recycling prevents toxic substances from leaking into the environment, protecting soil and water quality.

How does repurposing a battery affect the environment?

Additionally, the repurposing stage has a relatively low environmental impact throughout the battery's life cycle, accounting for 10% on average. The production of aluminum, which is used in the package of the battery pack, largely determines the outcome.

Lead-acid batteries have built a solid power guarantee network in the field of communication base stations and emergency power supplies by virtue of their stability, reliability, ...

Repurposing spent batteries in communication base stations (CBSs) is a promising option to dispose massive spent lithium-ion batteries (LIBs) from electric vehicles (EVs), yet the environmental ...

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In an era where lithium-ion dominates headlines, communication base station lead-acid batteries still power

# Environmental impact of lead-acid batteries in communication base stations

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To analyze the comprehensive environmental impact, 11 lithium-ion battery packs composed of different materials were selected as the research object.

Lead-acid batteries have long been a staple in various industries due to their reliability and cost-effectiveness. However, their sustainability has come under examination and discussion because to ...

Conclusion The environmental impact of lead-acid batteries is a significant concern, but with concerted efforts, it can be mitigated. By implementing effective recycling programs, improving ...

Jan 22, 2020 #183; Yang et al. [93] conducted an LCA study to compare the environmental impacts of retired LIBs and lead-acid batteries used in communication base stations and found that ...

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