Lead-acid battery environmental protection extended responsibility system

How to solve the pollution problem of discarded lead-acid batteries?
The pollution control problem of discarded lead-acid batteries has become increasingly prominent in China. An extended producer responsibility systemmust be implemented to solve the problem of recycling and utilization of waste lead batteries. Suppose the producer assumes responsibility for the entire life cycle of lead batteries.

Do lead-acid battery manufacturers have a responsibility extension system?
To assess the performance of the responsibility extension system of lead-acid battery manufacturers, we verified the above theoretical analysis. To analyze the production, recycling, and reuse behaviors of lead-acid battery manufacturers, we investigated many lead-acid battery manufacturers.

How are lead-acid batteries recycled in China?
Based on the operating mechanism of the extended responsibility system for lead-acid battery producers in China, this article considers three recycling channel structures: recycling only by manufacturers (mode M), recycling by the union (mode R), and third-party recycling (mode C).

What are lead-acid batteries used for?
Lead-acid batteries (LABs) are widely used in electric bicycles,motor vehicles,communication stations,and energy storage systemsbecause they utilize readily available raw materials while providing stable voltage,safety and reliability,and high resource utilization. China produces a large number of waste lead-acid batteries (WLABs).

How can lead batteries reduce environmental pollution?
Suppose the producer assumes responsibility for the entire life cycle of lead batteries. In that case, it will effectively reduce environmental pollution caused by non-compliant disposal of waste lead batteries, reduce environmental pollution, and achieve the sustainable development of lead resources.

Do lead-acid batteries have an environmental risk assessment framework?
The environment risk assessment was presented in this paper particularly,the framework of environmental risk assessment on lead-acid batteries was establishedand methods for analyzing and forecasting the environmental risk of lead-acid batteries were selected.

The lead and lead-acid battery industries during 2002 and 2007 in China J. Power Sources, 191 (1) (2009), pp. 22 - 27 View PDF View article Google Scholar

The lead-acid battery recycling industry started replacing manual battery breaking systems by automated

facilities in the 1980s [9-11], subsequently separating the spent automobile battery into its components by efficient gravity units rst, the batteries are loaded into a battery breaker, either a crusher with a tooth-studded drum or a swinging-type hammer mill, where they are ...

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According to a 2017 report by the World Health Organization (WHO), Pb"s high recycling potential contributes to its prevalence in the battery industry as a result of its containment within the battery throughout the charging-discharging cycles. Socolow and Thomas (1997) conducted a study in the United States which reported that LAB recycling is gradually ...

In today"s world of energy storage, Battery Management Systems (BMS) are essential for ensuring the safety, efficiency, and longevity of batteries across various applications. When it comes to lead-acid batteries, ...

Lead-acid battery (LAB) is a well-established battery system. It still holds a large share of the battery market nowadays and intensively used in automotive, power back-up systems and stationary applications (Ambrose et al., 2014, Li et al., 2014, Parker, 2001).The advantages of LABs are low resource and manufacturing cost, high operational safety, relatively portable ...

Achievements and prospects of implementation of the extended producer responsibility (EPR) system for waste lead-acid batteries [J]. Chinese Journal of Environmental Engineering, ...

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When does a lead-acid battery become a spent lead-acid battery? When a LAB can no longer be able to be recharged and retain the charge applied its lifetime reaches its end and becomes "spent" as it is no longer useful for the application for which it was designed. This is mainly caused by a process known

The EPR system will be expanded to automobiles, lead-acid batteries, and packaging materials. With lessons from e-waste management, the new EPR scheme ...

According to him, "one of the contents of the National Environmental (Battery Control) Regulations, 2024, is that it is driven by the "Polluter Pays Principle" and has established an Extended Producer Responsibility" (EPR) system which means that we are going to cascade, so producers must take responsibility.

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1. Lead-Acid Batteries. Composition: Contain lead, sulfuric acid, and plastic.; Environmental Risks: Improper disposal can lead to soil and water contamination due to toxic lead and corrosive acid.; 2. Lithium-Ion Batteries. Composition: Made up of lithium, cobalt, nickel, and other metals.; Environmental Risks: Mining for these materials can result in habitat destruction ...

Extended Producer Responsibility: ... lead acid batteries and lithium-ion & other batteries. For both types, the calculation of EC includes the cost of handling, collection, transportation, and processing of waste batteries. ... seizing trade documents, and taking further legal action under Section 15 of the Environmental (Protection) Act of ...

As low-cost and safe aqueous battery systems, lead-acid batteries have carved out a dominant position for a long time since 1859 and still occupy more than half of the global battery market [3, 4]. However, traditional lead-acid batteries usually suffer from low energy density, limited lifespan, and toxicity of lead [5, 6].

Key words: waste lead-acid batteries /; extended producer responsibility(EPR) system /; collection and treatment; Abstract: In 2020, the newly amended Law of the People"s Republic of China on the Prevention and ...

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