

PDEOZE PowerContainer

Battery energy storage safety concerns persist



Overview

A new report compiled by energy storage industry experts utilising extensive research discusses the current state of safety in battery energy storage systems (BESS), offering actionable insights to mitigate risks. Are large-scale battery energy storage systems safe?

Large-scale battery energy storage systems (BESS), particularly those using lithium-ion batteries, present several safety concerns despite advancements in technology and regulation: Lithium-ion batteries are prone to thermal runaway —a self-sustaining chain reaction causing rapid overheating, fires, and potential explosions.

How to reduce the safety risk associated with large battery systems?

To reduce the safety risk associated with large battery systems, it is imperative to consider and test the safety at all levels, from the cell level through module and battery level and all the way to the system level, to ensure that all the safety controls of the system work as expected.

Are battery storage systems safe?

However, alongside their numerous benefits, battery storage systems also present significant safety concerns that must be carefully addressed to ensure the protection of human life, property, and the environment (Abolarin, et. al., 2023, Eyo-Udo, Odimarha & Ejairu, 2024, Igbinenikaro & Adewusi, 2024).

Why do we need a safer battery system?

The demand for secondary batteries has significantly increased due to the growth of the electric vehicle and energy storage system industries. However, social concerns about the rise in battery-related fire incidents require safer battery systems.

What are the environmental impacts of battery storage systems?

Secondly, environmental impacts arise throughout the lifecycle of battery

storage systems, from raw material extraction to end-of-life disposal. Key issues include resource depletion, greenhouse gas emissions, and pollution from mining activities.

How can we promote safety and sustainability in battery storage systems?

By implementing robust regulations, investing in research and development, promoting collaboration, embracing circular economy principles, and raising public awareness, we can promote safety and sustainability in battery storage systems and accelerate the transition to a cleaner, more resilient energy future.

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Aug 22, 2024 · Abstract Solid-state lithium-metal batteries (SSLMBs) with high energy density and improved safety have been widely considered as ideal next-generation energy storage devices ...

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