

A-Core Container

The longest energy storage time of lithium batteries



Overview

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Over the past few years, lithium-ion batteries emerged as the default choice for storing renewable energy on the electrical grid. The batteries work fabulously for discharging a few hours of electricity, but they're too expensive to dispatch energy for much longer.

Lithium-ion batteries enable high energy density up to 300 Wh/kg. Innovations target cycle lives exceeding 5000 cycles for EVs and grids. Solid-state electrolytes enhance safety and energy storage efficiency. Recycling inefficiencies and resource scarcity pose critical challenges.

But in practice, long duration lithium-ion is dominating the inter-day storage pipeline thanks to lower costs from economies of scale. Lithium-ion is LDES, and emerging techs are racing to prove that they can unseat it.

This report demonstrates what we can do with our industry partners to advance innovative long duration energy storage technologies that will shape our future—from batteries to hydrogen, supercapacitors, hydropower, and thermal energy.

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