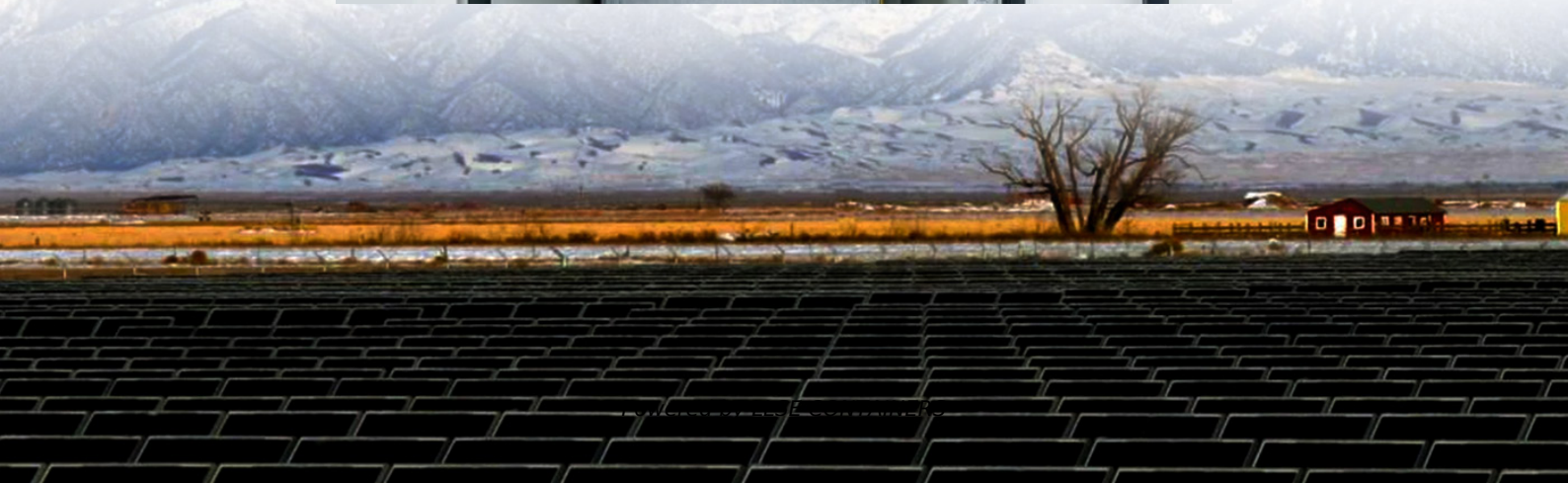


# **Increasing the capacity of lithium batteries for electric tools**





## Overview

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How to improve energy density of lithium ion batteries?

The theoretical energy density of lithium-ion batteries can be estimated by the specific capacity of the cathode and anode materials and the working voltage. Therefore, to improve energy density of LIBs can increase the operating voltage and the specific capacity. Another two limitations are relatively slow charging speed and safety issue.

How efficient are lithium-ion batteries?

For example, projects like the Hornsdale Power Reserve in Australia utilize lithium-ion batteries with a capacity of 194 MWh to deliver rapid-response services to the grid . The efficiency of lithium-ion batteries in terms of round-trip efficiency is crucial for grid applications.

What are the applications of lithium-ion batteries in grid energy storage?

One of the primary applications of lithium-ion batteries in grid energy storage is the management of intermittent renewable energy sources such as solar and wind . These batteries act as energy reservoirs, storing excess energy generated during periods of high renewable output and releasing it during times of low generation.

Can lithium-ion batteries be used for EVs and grid-scale energy storage systems?

Although continuous research is being conducted on the possible use of lithium-ion batteries for future EVs and grid-scale energy storage systems, there are substantial constraints for large-scale applications due to problems associated with the paucity of lithium resources and safety concerns .



## Increasing the capacity of lithium batteries for electric tools

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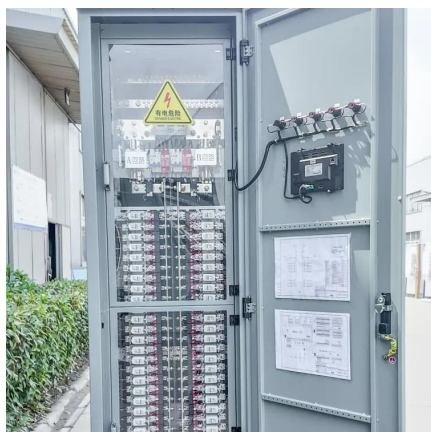


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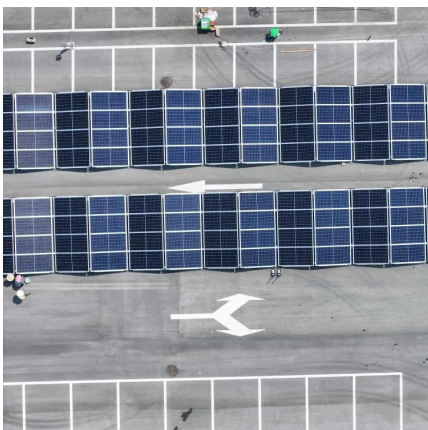


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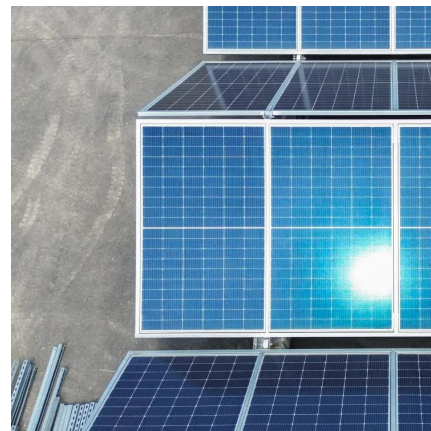


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