

A sustainable low-carbon transition via electric vehicles will require a comprehensive understanding of lithium-ion batteries" global supply chain environmental impacts. Here, we analyze the cradle-to-gate energy use and greenhouse gas emissions of current and future nickel-manganese-cobalt and lithium-iron-phosphate battery technologies.

There is a growing demand for lithium-ion batteries (LIBs) for electric transportation and to support the application of renewable energies by auxiliary energy storage systems. This surge in demand requires a concomitant increase in production and, down ...

This article outlines principles of sustainability and circularity of secondary batteries considering the life cycle of lithium-ion batteries as well as material recovery, component reuse, recycling efficiency, environmental impact, and economic viability.

It is estimated that between 2021 and 2030, about 12.85 million tons of EV lithium ion batteries will go offline worldwide, and over 10 million tons of lithium, cobalt, nickel and manganese will be mined for new batteries.

Strong growth in lithium-ion battery (LIB) demand requires a robust understanding of both costs and environmental impacts across the value-chain. Recent announcements of LIB manufacturers to venture into cathode active material (CAM) synthesis and recycling expands the process segments under their influence.

29 June 2021. Lithium-ion batteries need to be greener and more ethical. Batteries are key to humanity's future -- but they come with environmental and human costs, which must be mitigated....

As an important part of electric vehicles, lithium-ion battery packs will have a certain environmental impact in the use stage. To analyze the comprehensive environmental impact, 11...

With the environmental threats that are posed by spent lithium-ion batteries paired with the future supply risks of battery components for electric vehicles, remanufacturing of lithium batteries must be considered.

The environmental impact of lithium-ion batteries (LIBs) is assessed with the help of LCA (Arshad et al. 2020). Previous studies have focussed on the environmental impact of LIBs that have focused on specific areas like production, recycling, etc.

Are lithium-ion batteries environmentally friendly? Despite their advantages, scientists face a quandary when it comes to the environmental impact of lithium-ion batteries.

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