

## Lithium battery life cycle analysis

Therefore, this paper provides a perspective of Life Cycle Assessment (LCA) in order to determine and overcome the environmental impacts with a focus on LIB production process, also the details regarding differences in previous LCA results and their consensus conclusion about environmental sustainability of LIBs.

Contribution of lithium-ion battery (LIB) and vanadium redox flow battery (VRB) components to the overall life cycle environmental impacts, along with life cycle phases of the LIB-based renewable energy storage systems (LRES) and VRB-based renewable energy storage system (VRES) resulting in significant impacts.

This review offers a comprehensive study of Environmental Life Cycle Assessment (E-LCA), Life Cycle Costing (LCC), Social Life Cycle Assessment (S-LCA), and Life Cycle Sustainability Assessment (LCSA) methodologies in the context of lithium-based batteries.

Nonetheless, life cycle assessment (LCA) is a powerful tool to inform the development of better-performing batteries with reduced environmental burden. This review explores common practices in lithium-ion battery LCAs and makes recommendations for how future studies can be more interpretable, representative, and impactful.

**Abstract.** This paper analyzes and compares the life cycle environmental impacts of two major types of Li-ion batteries using process-based and integrated hybrid life-cycle assessment (LCA) approaches. The life cycle inventories (LCIs) of Li-ion battery contain component production, battery assembly, use phase, disposal and recycling and other ...

You are accessing a machine-readable page. In order to be human-readable, please install an RSS reader.

All articles published by MDPI are made immediately available worldwide under an open access license. No special permission is required to reuse all or part of the article published by MDPI, including figures and tables. For articles published under an open access Creative Common CC BY license, any part of the article may be reused without permission provided that the original article is clearly cited. For more information, please refer to <https://>

Feature papers represent the most advanced research with significant potential for high impact in the field. A Feature Paper should be a substantial original Article that involves several techniques or approaches, provides an outlook for future research directions and describes possible research applications.

Feature papers are submitted upon individual invitation or recommendation by the scientific editors and must receive positive feedback from the reviewers.

Editor's Choice articles are based on recommendations by the scientific editors of MDPI journals from around the world. Editors select a small number of articles recently published in the journal that they believe will be particularly interesting to readers, or important in the respective research area. The aim is to provide a snapshot of some of the most exciting work published in the various research areas of the journal.

Visit our dedicated information section to learn more about MDPI.

Sadhukhan, J.; Christensen, M. An In-Depth Life Cycle Assessment (LCA) of Lithium-Ion Battery for Climate Impact Mitigation Strategies. *Energies* 2021, 14, 5555. <https://doi/10.3390/en14175555>

Contact us for free full report

Web: <https://kary.com.pl/contact-us/>

Email: [energystorage2000@gmail.com](mailto:energystorage2000@gmail.com)

WhatsApp: 8613816583346

