# Environmental assessment of liquid flow batteries for Hungarian communication base stations

How can LCA results be used in battery research & development?
In the context of batteries, LCA results can be used to inform battery research and development (R&D) efforts aimed at reducing adverse environmental impacts, [28 - 30] compare competing battery technology options for a particular use case, [31 - 39] or estimate the environmental implications of large-scale adoption in grid or vehicle applications.

Are lithium-ion battery production and applications affecting the environment?
Therefore, a strong interest is triggered in the environmental consequences associated with the increasing existence of Lithium-ion battery (LIB) production and applications in mobile and stationary energy storage system.

What are the characteristics of LCA studies on advanced battery systems?
Main characteristics of LCA studies on advanced battery systems identified by literature search (2010-2021). LT: Lifetime [cycles@ 80% DoD], LTSE: Lifetime specific energy [kWh/kg]; LCIA: Life Cycle Impact Assessment; GWP: Global Warming Potential; Eff: Battery charge-discharge efficiency. GWP, FDP, ODP, POFP.

What is the use phase of a battery LCA?
The use phase might be the most controversial and heterogenic part of battery LCAs. Use-phase impacts are associated with charge- discharge losses,self-discharge and auxiliary consumption. All can have significant contributions to the overall environmental impacts of a battery (system) but depend on the application and its load profile5.

Sustainability Story flow battery is a short- and long-duration energy storage solution with sustainability advantages over other technologies. These include long durability and lifespan, low ...

Nov 1, 2024 · This study conducts a comparative assessment of the environmental impact of new and cascaded LFP batteries applied in communication base stations using a life cycle ...

The exclusion of a specific life cycle stage might be justified for the isolated assessment of a single battery type (for example, eco-design study) or for the comparison of batteries that have ...

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 ...

The costs and risks of Hungarian battery production are high because of its specific characteristics, and if current practices remain ...

Our range of products is designed to meet the diverse needs of base station energy storage. From high-capacity

lithium-ion batteries to advanced energy management systems, each solution is crafted to ...

The costs and risks of Hungarian battery production are high because of its specific characteristics, and if current practices remain unchanged, the environmental, health and social ...

Main steps in the assessment of environmental impacts of lithium-ion batteries and Li beyond batteries based on LCA (Life-Cycle Assessment). Download: Download high-res image ...

This study examines the environmental and economic feasibility of using repurposed spent electric vehicle (EV) lithium-ion batteries (LIBs) in the ESS of communication base stations ...

From 2013, lithium-sulfur based flow batteries have been intensively studied for large-scale energy storage 18, 82 - 92 and are promising replacements for LIBs because of their high ...

For relatively mature battery technologies, such as lead-acid, nickel-metal hydride, and certain variations of lithium-ion batteries, a robust life cycle assessment (LCA) literature exists that ...

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