Swiss Battery Club (Short Report)

Circular Economy and Lithium-Ion Batteries 2023

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Affordable and "sustainable" lithium-ion batteries are key to the development of the electric vehicle market and to a clean energy transition.

Circular economy applied to end-of-life lithium-ion batteries mean helping to avoid the scarcity of primary raw materials while keeping environmental costs low - which is associated with the mining of these raw materials.

Circular value chains could also help solve waste and disposal problems when Li-ion batteries reach the end of their life - after some years.

However, *such "highly developed" and "sustainable" value chains do not yet exist*.

Complex mixtures of materials in today's myriad of commercial and diverse lithium-Ion battery designs, and the insufficient local waste scale hinder currently the development of cost-effective recycling and thus cost-effective reuse of materials.

There is hope that with the future up-scaling of the lithium-ion market for electric vehicles, the circular economy for lithium-ion batteries will improve.

Strategic and regulatory targets for the battery industry, a strategic waste collection system and agreed recycling rates, coupled with stewardship and take-back systems will help the lithium-ion battery ecosystem to follow circular economic principles.

Further readings and references

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