UNIVERSITÄT BAYREUTH

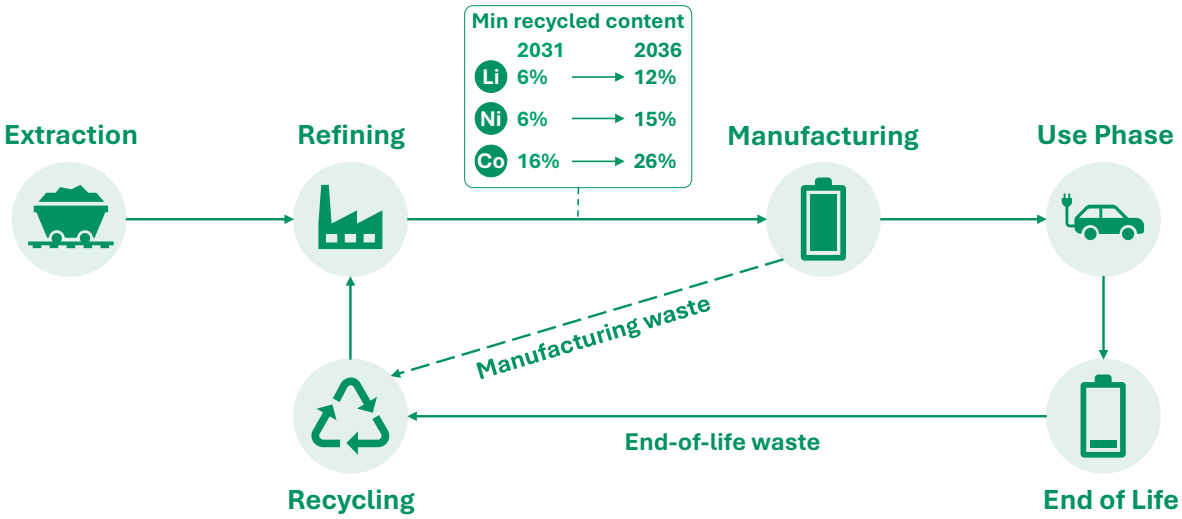
Lehrstuhl Ökologische ORT Ressourcentechnologie

RESEARCH MODULE

How much of the EU's recycled-content targets can end-of-life battery waste supply?

Batteries power electric vehicles and store renewable energy in stationery storage systems, making them key to the energy transition. The 2023 EU Battery Regulation requires minimum shares of recycled lithium, nickel, and cobalt in new batteries put on the European market from 2031, rising in 2036. These shares can come from manufacturing waste, end-of-life waste, or both.

With growing battery demand, it is unclear whether end-of-life waste can supply a sufficient share of these targets, even at the maximum feasible recycling rate. The conditions under which the targets can or cannot be met remain unknown and require investigation. The Commission will review these targets by 2028 to determine whether they can be met. Hence, the question is also relevant for policymakers.



In this research, you will carry out a material flow analysis (MFA) to answer this question. Your tasks:

a) Review the literature and collect data on current and future battery demand, battery lifetimes, collection rates, and material recovery efficiencies
b) Conduct MFA calculations to determine the maximum recycled content that end-of-life waste can supply by 2031 and 2036
c) Analyse the gap under realistic technological and economic scenarios, and how it could be closed

You will gain hands-on experience with MFA and insights into the EU Battery Regulation, battery recycling, and raw-material supply chains.

Prior knowledge from courses such as Environmental and Resource Technology, Industrial Ecology, Sekundärrohstoffe und Recycling or similar is required.

If you are interested in this topic, please contact
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