

Saubermacher

for an environment
worth living in

Battery Recycling

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Saubermacher

1979

founding year

€ 320

million turnover p.a.

3.350

employees

77

recycling plants

3,5

million tons of waste p.a.

680

specialised vehicles

75

participations

42.000

customers

Redux

> 20 Years

years of expertise,
leading battery recycling
company in Europe

4

production sites

110

employees

> 200.000

tons of recycled batteries

First industrial battery recycling plant

Lithium-ion batteries



Sorting Line



Recycling Line



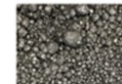
Discharging
– Feeding in our own grid

Disassembly
– Manual Separation

Thermal pretreatment
– Evaporation of electrolyte

Mechanical process
– Separation of valuable substances from cells

Capacity: 20.000 t/a
Throughput: 5 t/h
Output:



Al



Al/Cu

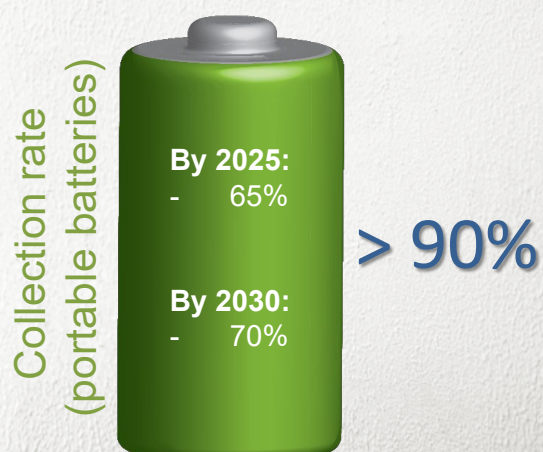
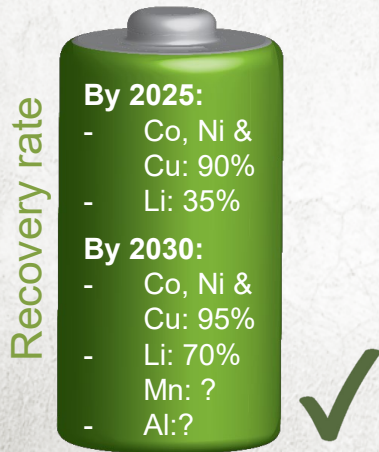


Black mass

EU- Battery regulation (proposal)

3 Important recommendations:

1. Recovery rate on more elements, eg. Mn, Al
2. The rules on calculation should be ready in 2022
3. Increase collection rates. Deposit refund systems and other tools to be set up



Increase collection rates. Separate and safe collection schemes

Redux Offenbach, May 2019



Quelle: extratip.com

Hackl, October 2017



Quelle: ORF.at

Villacher Saubermacher, April 2019



Quelle: 5min.at

Mayer Recycling, July 2018



Quelle: regionews.at

Development of fire damage

Using the example of Styria



Batteries in residual waste in AUT:

- 0.05 M-%, approx. 20 batteries per ton

Lithium batteries in residual waste in AUT:

- 0.002 M-%, approx. 1 battery per ton

Based on the residual waste amount (EU) of approx. 224,5 million tons

Ø 224.500.000 Pieces of lithium batteries

Estimation of the probability of fire damage ($p = 0,0001$)

Ø 22.450 potential fire incidents per year

Fire damages in Styria (based on R. Pomberger & T. Nigl, 2020)

Thank you

Saubermacher

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