



Direct Battery Recycling

E-Mobilität

01. November, 2022



KYBURZ Switzerland AG



Seit 1991 Entwicklung,
Produktion und Verkauf von
Elektrofahrzeugen

100% in Privatbesitz

> 180 Angestellte

~ 56 Mio. CHF Umsatz
(2021)

> 25'000 Fahrzeuge im
Einsatz

Hauptsitz in Freienstein (CH)

Produktion in Embrach (CH)

Unser Produktportfolio



Personen
-
fahrzeuge

Zustell- und
Logistik-
fahrzeuge

Nutz- &
Kommunal-
fahrzeuge

Freizeit- &
Spass-
fahrzeuge

Autonome
-
fahrzeuge

Fleet
MGMT
Software





1stLife



2ndLife

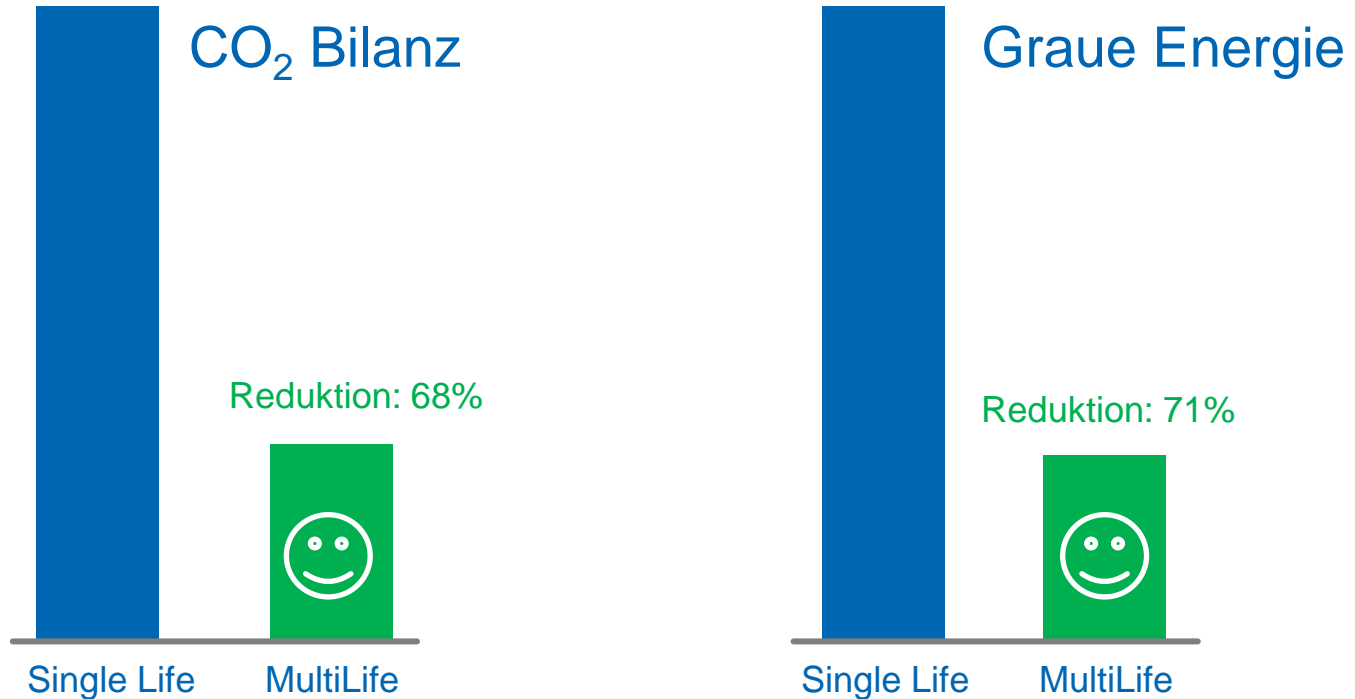


3rdLife



4thLife

Ökobilanz MultiLife Konzept



Nominationen 2022

KYBURZ gewinnt den Prix SVC Wirtschaftsraum Zürich 2022



Nominationen 2022

KYBURZ schafft es beim Green Business Award unter die Finalisten





1stLife



2ndLife



3rdLife



4thLife

Lebenszyklus der Fahrzeuge



+ Clean

+ Fast

+ Low maintenance

Produktion

Use

End of Life

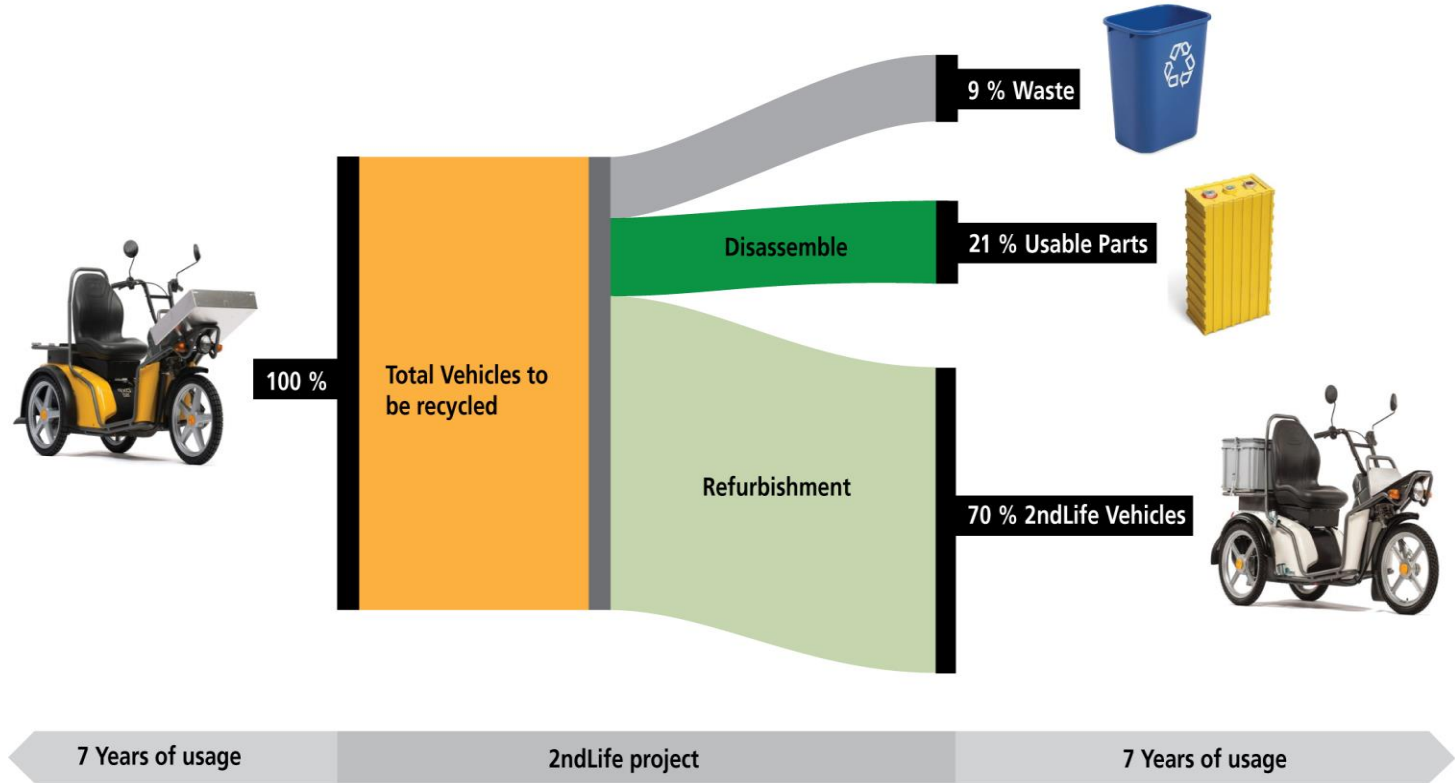
2ndLife

+ Smarter

KYBURZ 2ndLife Projekt



2ndLife Results





1stLife



2ndLife



3rdLife



4thLife

TWICE



1stLife



2ndLife

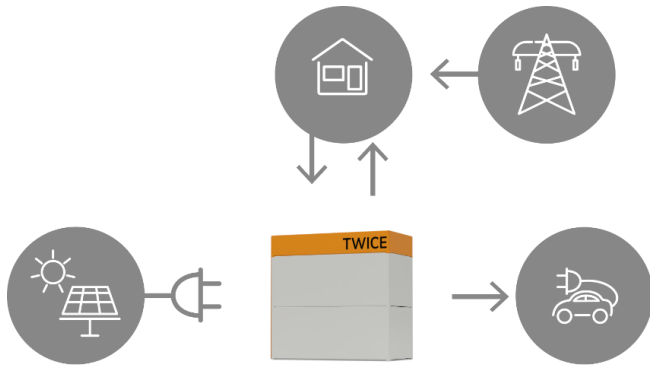


3rdLife

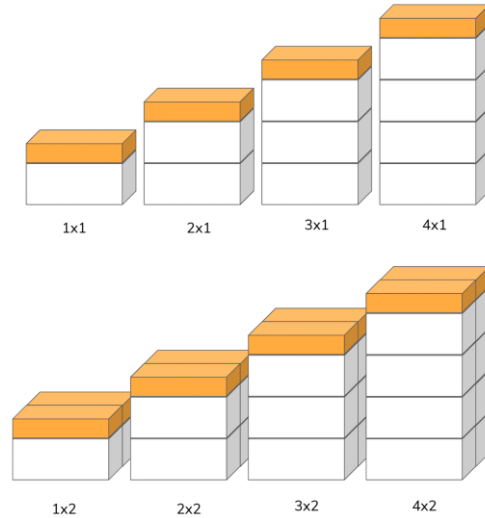


4thLife

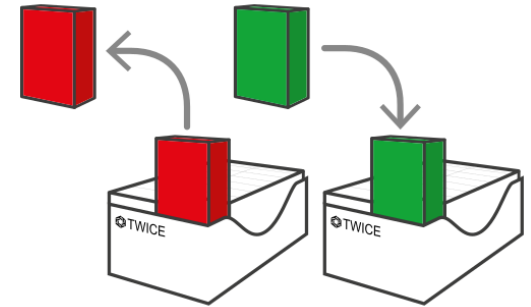
KYBURZ-TWICE Energy Storages



Application



Modular



Swap-System

KYBURZ- Battery location



Coast



Snow



Mountain



Country Side

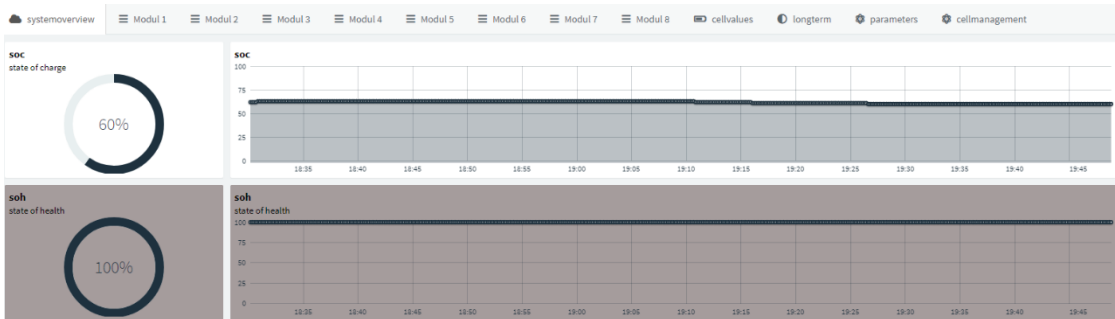


City



Race

KYBURZ-TWICE Batterie Management System





1stLife



2ndLife



3rdLife



4thLife

Industrial Conventional Recycling



Mechanical treatment

Plastik
Al, Cu
Black mass



Pyrometallurgical Recycling



Co, Cu, Ni-alloy + slag (Al, Li, Mn)

Hydrometallurgical Recycling



Co, Mn, Li, Ni-salt



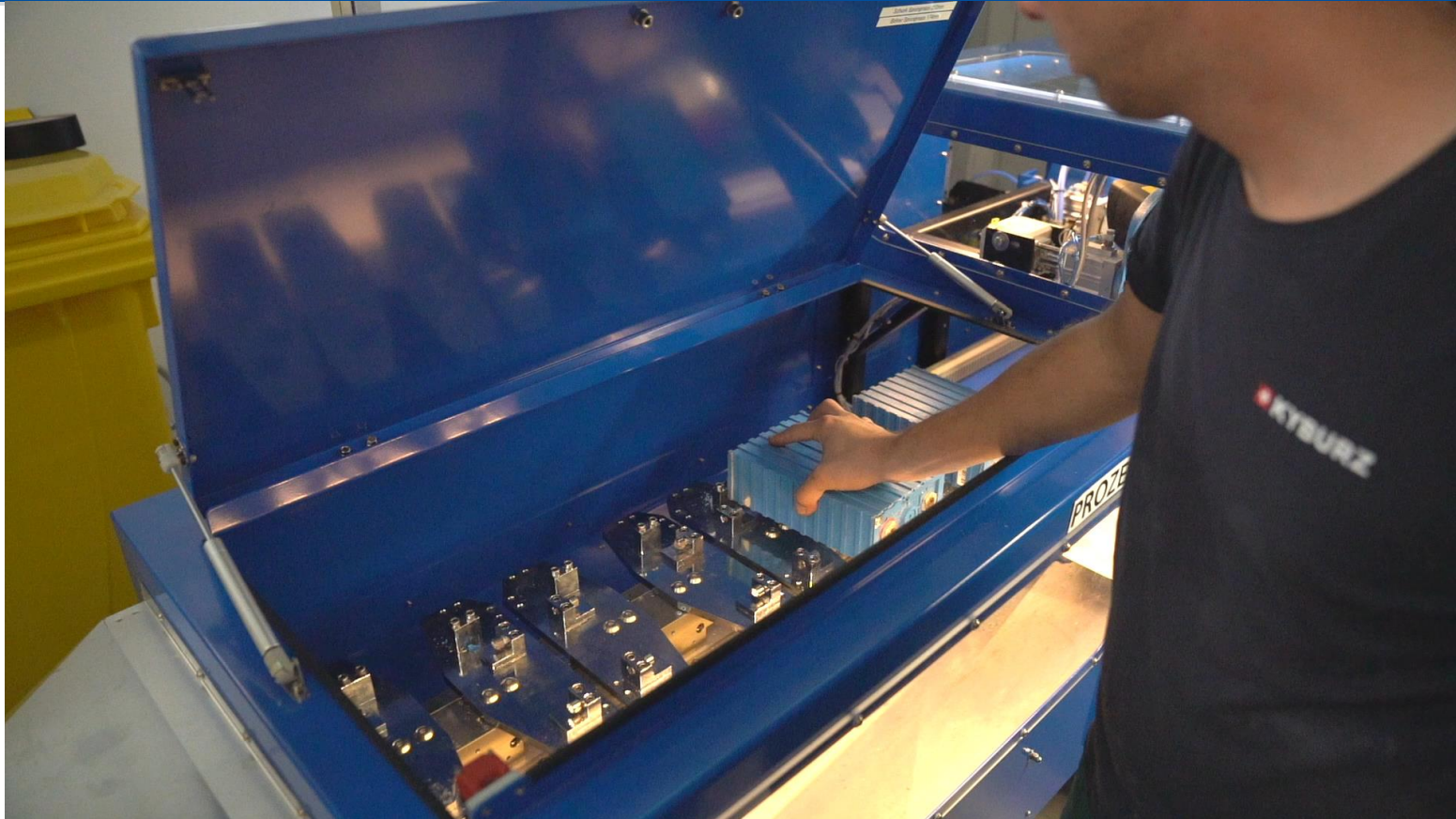
- Opening Ceremony
3. September 2020
- Unrestricted Operating
License since July 2022
- LFP Chemistry
- Prismatic cell
- Plastic or Aluminium cases
- Current Capacity: 95-105 Kg/h



- **Recycling Rate von über 91%**
- **Direktes and chemie freies recycling**
- **Kein black mass → Kathode & Anode active materials**
- **Lösung für Logistik**
- **Schliessung des Kreislaufs**



LIBERTY 1



Water based separation and Purification





4thLife



**8 Zellen
pro Fahrzeug**

23'256 g Rohstoffe

3'168 g Kupfer

2'112 g Aluminium

4'752 g Graphit

8'184 g Li-Eisenphosphat

400 g Separator

4'640 g Kunststoff

91 % Rückgewinnung



4thLife

LIB recycling projects EU: July 2022*

Published by:

BATTERY-NEWS.DE



Corresponds to 100,000 t/a of installed and planned capacity

Sweden



STENA
2023, Halmstad
10,000 t/a

northvolt
2030, Skellefteå
125,000 t/a

REDWOOD MATERIALS 202X, Europe
X t/a

NISSAN 2025, Europe
X t/a

Finland



ACCUREC
Installed, Nivala
4,000 t/a

fortum

Installed, Ikaalinen
3,000 t/a + X
2023 Harjavalta

Norway



NIKKELVERK KLENSCØRE
Installed, Kristiansand
7,000 t/a

hydrovolt
Installed, Fredrikstad
12,000 t/a



2023, X
10,000 t/a

$\Sigma =$ Installed 115,750 t/a + X

Netherlands



TES
Installed, Rotterdam
14,000 t/a

Great Britain



GLENCORE BRITISHVOLT
2023, Northfleet
10,000 t/a

GIGAMINE™
202X, X
X t/a

VEOLIA
2024, Minworth
X t/a

ecobat
Installed, Darlaston
X t/a

Belgium



umicore
Installed, Hoboken
7,000 t/a

Aurubis
2025/26, Olen
X t/a

ABEE
2023, X
1,000 t/a

France



SWAM
202X, Saint Quentin
10,000 t/a

TES
Installed, Grenoble
2,200 t/a

GRUPE RENAULT VEOLIA
2023, Amneville
4,000 t/a

VEOLIA EDI
2023, Dieuze
5,000 t/a

SUEZ
2024, X
X t/a

Spain



endesa
Installed, Cubillos del Sil
8,000 t/a

IR RECYPIAS
Installed, Erandio
X t/a

InnoEnergy
202X, X
15,000 t/a

Italy



ITALVOLT
202X, Scarmagno
X t/a

Switzerland



BATREC
Installed, Wimmis
500 t/a

KYBURZ
Installed, Freienstein
100 t/a

librec
2023, X
8,000 t/a

Hungary



SungEel HiTech
Installed, Bátoronyterenyé
25,000 t/a

Germany



ACCUREC
Installed, Krefeld
3,250 t/a

Duesenfeld
Installed, Wendeburg
2,900 t/a

WALCH
2014, Baudenbach
1,000 t/a

Primobius
Installed, Hilchenbach
20,000 t/a

REDUX
Installed, Bremerhaven
10,000 t/a

STENA
Installed, Wangerland
350 t/a (2023: 2,500 t/a)

ROTH
202X, Wernberg-Köblitz
9,000 t/a

BASF
2024, Schwarzheide
15,000 t/a

ERLOS
Installed, Zwickau
950 t/a

WIPAC
Installed, Aue
4,000 t/a

VW
Installed, Salzgitter
1,500 t/a

Mercedes
2023, Kuppenheim
2,500 t/a

northvolt
2025, Heide
X t/a

Aurubis
202X, Hamburg
X t/a

Poland



SungEel HiTech POSCO
202X, Bukowice
20,000 t/a

ROYAL BEES™
2020, Legnica
3,600 t/a

ATTER®
2022, X
X t/a

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*Based on official announcements
**Conversion from 10 t/d to t/a (200 working days per year)

R&D programmes 2021-2024

Project	Project Goal	Contribution KYBURZ
Federal Office of Energy of Switzerland	Automated recovery of recycled LFP material	Automated recovery of recycled LFP material
Innosuisse Flagship Project (Swiss Government Sponsored R&D Project)	Circular Economy of LFP & NMC cells	Recovery of materials
EU Horizon Project RESPECT	Recovery of battery grade materials from cell recycling	Design and setup of a universal cell cutting machine

→ The work done within these projects will enable us to recycle LIB cells / modules in Switzerland on an industrial scale.

Timeline 2026



Please, contact us if you want to know more about the company

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